

Environmental Monitoring Report

PUBLIC

5 Semestral Report
November 2023

Pakistan: Balochistan Water Resources Development Sector Project

Prepared by Balochistan Irrigation Department and the Agriculture and Cooperatives Department
for the Islamic Republic of Pakistan and the Asian Development Bank (ADB).

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Abbreviations

ACD	Agriculture and Cooperatives Department
ADB	Asian Development Bank
BWRDSP	Balochistan Water Resources Development Sector Project
BEPA	Balochistan Environmental Protection Agency
BEQS	Balochistan Environmental Quality Standards
BID	Balochistan Irrigation Department
CSC	Construction Supervision Consultants
EMP	Environmental Management Plan
ES	Environment Specialist
GoB	Government of Balochistan
GRC's	Grievance Redressal Committee's
GRM	Grievance Redressal Mechanism
ha	Hectare
H&S	Health and safety
HSE	Health Safety and Environment
IA	Implementation Agency
IEE	Initial Environmental Examination
MRB	Mula River Basin
PMO	Project Management Office
PIS	Perennial Irrigation Scheme
PIO	Project Implementation Office
PPE's	Personal protective equipment's
SAEMR	Semi-annual Environmental Monitoring Report
SC	Supervision Consultant
SFA	Social Framework Agreement
SPDIS	Solar Powered Drip Irrigation System
SOPs	Standard Operating Procedures
SSEMP	Site Specific Environmental Management Plan
SSHSEMP	Site Specific Health Safety Environmental Management Plan
TBT	Toolbox Talk
WRB	Water Resources Building
ZRB	Zhob River Basin

BRIEF SUMMARY

1. The Asian Development Bank (ADB) is partnering with the Government of Balochistan Province (GoBP), to undertake the Balochistan Water Resources Development Sector Project (BWRDSP) in Zhob and Khuzdar Districts.
2. The BWRDSP will support the implementation of the integrated water resources management policy of the Government of Balochistan (GoB). This policy provides a comprehensive framework for the province to address the issues of water management and development in the context of basin approach, with water harvesting, and groundwater recharging as an integral part of watershed management. About 11 potential sub-projects out of over 300 longlists in the Zhob and Mula river basins were selected for potential ADB financing based on a set of criteria such as water and land availability, economic viability, and a balanced approach to extending development support to different tribal groups. The project was approved by ADB on 31 August 2018 for a concessional loan of \$100 million from ADB's ordinary capital resources (L3700-PAK), a grant of \$3 million from the Japan Fund for Poverty Reduction (JFPR, G9197-PAK), and a grant of \$2 million from the High-Level Technology Fund (HLTF, G0597-PAK). The loan, grants, and project agreements were signed on 5 January 2019. The loan and grants became effective on 7 March 2019. The physical completion of the project will be on 31 July 2026.
3. The project is focused on achieving two significant outcomes in Balochistan: enhancing farm income and improving water resources management. By effectively implementing this project, we aim to witness a remarkable increase in agricultural production in the project areas.
4. Outputs: The project has three outputs:
 - (i) Irrigation infrastructure constructed and/ improved;
 - (ii) Command area and watershed protection expanded and improved; and
 - (iii) Institutional capacity strengthened.
5. For the whole project, the civil works contract packages are divided into sub-projects. The Contractor names of various sub-projects of BWRDSP with sub-project name and contract number are as under

S. No.	Name of Sub-project	Contract No	Name of Contractor
1.	Ahmedzai PIS	NCB 08	M/s Noor ul Haq & Brothers

2.	Water Resources Building	NCB 04	M/S Abdul Hameed Bangulzai JV M/S Muhammad Akram Shawani.
3.	Karakh valley development sub-project	NCB 01	M/S Zahir Khan Brothers VS Agha Construction Company
4.	Kharzan Hatachi Infiltration Gallery	NCB 02	M/s Agha Brothers Construction Company, M/s Agha Construction Company and M/s Sadaat Enterprises
5.	Sir Toi Dam	ICB 01	M/s Noor ul Haq & Brothers
6.	Kili Sardar Akhtar	NCB 06	M/s Noor ul Haq & Brothers

6. Details of Sub-projects

- Ahmedzai Perennial Irrigation Scheme NCB 08:** This sub-project named Ahmedzai Irrigation Scheme NCB 08 is located in District Zhob at a distance of about 51 km South-East of Zhob City. This sub-project will rehabilitate and improve damaged weir, canals and appurtenant structures to serve an area of 612 ha. Main components of the sub-project include; (i) a weir structure on the Saward Rud (river) with an irrigation outlet for Perennial channel on the right side and a head regulator for Flood channel on the left side;(ii) a 3.5 km long Perennial Irrigation channel to irrigate 208 ha of command area on right bank (iii) a 7.5km long Flood Irrigation Channel to irrigate 404 ha of land by Sailaba irrigation on the left bank of the river. The proposed project is awarded to Noor ul Haq & Brothers Contractors.
- Karkh valley development sub-project NCB 01:** This sub-project is comprised of 2250 ha of culturable land, which will be brought under irrigated agriculture. It is estimated that around 20 MCM of water is available annually for developing agriculture in the command area on the both right and left banks of the river. Currently, cropping intensity in the core sub-project area is 89% and it will be increased to 120 percent after the completion of the core sub-project. There will be an appreciable socio-economic development as a result of the project. The proposed Karkh valley development sub-project consists of three parts: (a) general works – which relate to the Karkh Valley as a whole, (b) weir construction at Jhalaro, and (c) weir rehabilitation at Chutta. The design interventions for the sub-project include; (a) guide bund / flood protection works, (b) construction of new Jhalaro weir, (c) weir rehabilitation at Chutta, (d)

Rehabilitation of Chutta lift irrigation (pump house), and (e) lining of unlined existing channels. The proposed project is awarded to M/S Zahir Khan Brothers VS Agha Construction Company.

- **Water Resources Building NCB 05:** The proposed civil works Water Resources Building Quetta (NCB 05) is located on an existing building compound of Irrigation Department, Balochistan which is on government-owned land. Construction Contract has been awarded to M/S Abdul Hameed Bangulzai JV M/S Muhammad Akram Shawani.
- **Kharzan Hatachi Infiltration Gallery NCB 02:** The Kharzan-Hatachi Infiltration Gallery sub-project NCB 02 is located in District Khuzdar in Mula River Basin on Mula River. The proposed intervention for the sub-project include; (a) Construction of two infiltration galleries, (b) Construction and rehabilitation of water conveyance system and associated structures, (c) flood protection works for irrigation canals and command area. The sub-project is aimed to rehabilitate and improve damaged infrastructure to enhance size of command area having irrigation facility. Construction contract of this project has been awarded to M/s Agha Brothers Construction Company, M/s Agha Construction Company and M/s Sadaat Enterprises.
- **Siri Toi Dam ICB 01:** The Siri Toi Dam sub-project (ICB 01) is located in Union Council Sambaza, Tehsil and District Zhob. The main dam will be 72 m high Earth fill Dam about 304 m long. More than 28,243 m of main and distributary channels have been designed for CCA of 3948 ha. irrigation channel and about 50 km of secondary channel. Construction contract of this project has been awarded to M/s Noor ul Haq & Brothers.
- **Kili Sardar Akhtar NCB 06:** The Killi Sardar Akhtar sub-project comprises (i) infiltration gallery across the stream Sawar Rud-a tributary of Zhob River and (ii) perennial irrigation scheme along right bank. The proposed sub-project will use sub-surface flow for irrigation. The Perennial Irrigation Scheme (PIS) supplies water round the year. The sub-project will improve 106 ha of existing command area of Killi Akhtarzai and Killi Ghundai whereas 124 ha new area of Bazkhel will be brought under cultivation. After construction of sub-project, it will significantly improve the agricultural production and rural livelihood. Construction contract of this project has been awarded to M/s Noor ul Haq & Brothers.

7. In last SAEMR, the construction works on NCB 08, NCB 05 and NCB 01, NCB 02 and ICB 01 were reported in detail. In addition to the above sub-project sites, construction works on NCB 06 have commenced on 22 December 2022 .

8. Status of Site Specific Environmental Management Plan of all sub-projects is as follows,
- ICB 01 got approved on 9th December 2022.
 - NCB 08 was conditionally approved by ADB on 20 November 2021.
 - NCB 05 was approved by ADB on 27 February 2022.
 - NCB 01 SSEMP – 1st Draft was reviewed by ADB and updated draft has been submitted on 4 April 2023 to the PMO.
 - NCB 02 - submitted to client office for further process on 16/05/2022.
 - NCB 06 – Consultants provided comments on 31st March 2023 and shared with the contractor for improvement.
 - NCB 04 Contractor's Environmental Specialist addressing SC comments.
 - NCB 07 Contractor's Environmental Specialist addressing SC comments.
9. This report refers to the 5th Semi Annual Environmental Monitoring Report for Balochistan Water Resources Development Sector Project (BWRDSP) from January, to June 2023, which is prepared to analyse the effectiveness of the implementation of environmental safeguards on project sites and compliance of applicable national & international laws & regulations. For this purpose, environmental audits, various site visits and meetings with project staff have been conducted during the reporting period to ensure the implementation of environmental safeguards.
10. Details of project activities during Current Reporting Period is given below:

Exhibit 01: Details of ongoing construction activities.

S.No.	Details of Activities	Current Status	Length Covered
Siri Toi Dam ICB 01			
1.	Camp establishment	Masonry	
2.	Earth work (Spillway)	Excavation	
3.	Dyke	Key Trench Excavation	
4.	Access Road	Excavation	
Karakh valley development sub-project NCB 01			
5.	Jhalaro Weir	D/S RCC of cut of wall completed	12 meters length
6.	Jhalaro Weir	U/S RCC cut of wall completed	8 meters length
7.	Jhalaro Weir	D/S RCC bed	D3, D6, D7 and D8
8.	Jhalaro Conduit	RCC bed, wall and top slab	RD 0+00 to 0+017
9.	Jhalaro Weir	Excavation layout cut of wall	12 meters length
10.	Jhalaro Weir	D/S plum concrete bed	D8, D9 and D10

11.	Jhalaro Weir	Bitchumen coating of RCC beds	D3, D4, D6, D7 and D8
12.	Bund 3	Stone masonry wall	RD 0+370 to 0+410
13.	Bund 3	10 layers done	RD 0+500 to 0+675
14.	Bund 3	6layers done	RD 0+750 to 0+900
15.	Bund 3	14 layers done	RD 0+500 to 0+675
16.	Bund 3	Top layers done	RD 0+410 to 0+500
17.	Bund 2	Stone pitching work in progress	RD 0+00 to 0+650
18.	Khadri channel	Nakkas completed	
19.	Jhalaro Weir	U/P and D/S slope crest plum concrete	Panel 3, 4, 6, 7, 9 and 10
Water Resources Building sub-project NCB 05			
1.	WRB Quetta	Conference Hall walls brick masonry	
2.		Conference Hall roof concrete	
3.		Lift walls RC concrete	
4.		Ground Floor flooring conduit	
5.		Door frames installation at ground floor	
Kharzan-Hatachi sub-project NCB-02			
1.	Bund # 2	Total earth Excavation 91325	
2.	Bund # 3 B	cu.m	
3.	Bund 3 C & 3 A	In progress	
Kili Sardar Akhtar Sub Project NCB 06			
1.	Stone Masonry	R.D 6+000	
2.	Excavation	R.D 6+100	

11. A project level Grievance Redress Mechanism (GRM) has been established to address grievances arising from environmental and social impacts. The GRM is prepared in English and Urdu languages and approved by ADB. The GRM is fully implemented in the camp areas and construction sites. The GRM record is being checked on monthly basis.
12. A good working relationship is being maintained among the PMO, Contractor and the Consultant's environmental staff. Trainings on regular basis are performed by Contractor's HSE Officers on sites for the capacity building of the relevant workers/staff. They are briefed on updating the environmental monitoring checklists

and strictly follow the EMP, which they submit on weekly/monthly basis to adhere with Environmental Management and Monitoring activities.

13. Corrective Action Plan (CAP) devised by PMO and PIC is communicated to the contractors for effective implementation. SC has advised the contractor to address noncompliance as per agreed CAP. The corrective actions included better housekeeping on camp and active sites, provision of proper PPE's to the workers, on-job trainings, avoid littering activities, etc. On-site sanitation at subproject sites utilizes septic tanks for sewage waste disposal, positioned near construction camps before discharging into nearby drainage areas.
14. In accordance with the project's EMP, the Contractors of NCB 01 and NCB 02 have conducted quarterly environmental monitoring through a third-party environmental testing laboratory certified by Balochistan EPA during March and June 2023. NCB 05 and ICB-01 have conducted it during March 2023, and NCB 06 has conducted it during June 2023, respectively. Sampling and analysis were conducted in the presence of the SC Environmental Specialist in March and June 2023. The testing was previously missed in the last SAEMR's due to Covid-19 situations and security reasons. Sampling and lab testing have been carried out for ambient air quality, gaseous emissions, drinking/groundwater, surface water, wastewater, and noise.
15. Additional field staff was nominated by Contractors and trainings on housekeeping including waste management and good practice measure was provided to all labors and staff, which decreased minor non-conformance levels months from January to July 2023.

1 INTRODUCTION

General

16. This report represents the 5th Semi - Annual Environmental Monitoring Review for Balochistan Water Resources Development Sector Project from January to June 2023. It contains findings of Environmental Compliance monitoring activities at following sub-project sites i.e Ahmedzai Perennial sub-project NCB 08, Water Resources Building NCB 05, Karakh Valley Development Sub-Project on Mula River NCB 01, NCB 02 Kharzan Hatachi Infiltration Gallery and ICB 01 Siri Toi Dam. This 5th SAEMR for the project consisting of the following sub-projects:

Ahmedzai Perennial and Flood Irrigation Sub-Project NCB 08

- Weir
- Flood Protection Channel
- Perennial Channel

Water Resources Building, Quetta NCB 05

- Multi-storey Building

Karakh Valley Development Sub-Project on Mula River Basin NCB 01

- Rehabilitation of weirs including raising of protection and guide bund
- Construction of flood protection Bunds.
- Solar pumping system at one place
- Construction of the new channel and crossing structure

Kharzan Hitachi Infiltration Gallery Sub-Project NCB 02

- Construction of two infiltration gallery.
- Construction and rehabilitation of water conveyance system and associated structures.
- Flood Protection works for irrigation canals and command area.

Siri Toi Dam Sub Project ICB 01

- Construction of Siri Toi Dam Sub Project

Kili Sardar Akhtar Subproject 06

- Construction of infiltration gallery.
- Construction and rehabilitation of water conveyance system and associated structures.

Location of sub-project sites

17. The sub-projects location of Mula River Basin and Zhob River Basin are shown in Figure 1 and 2 respectively.

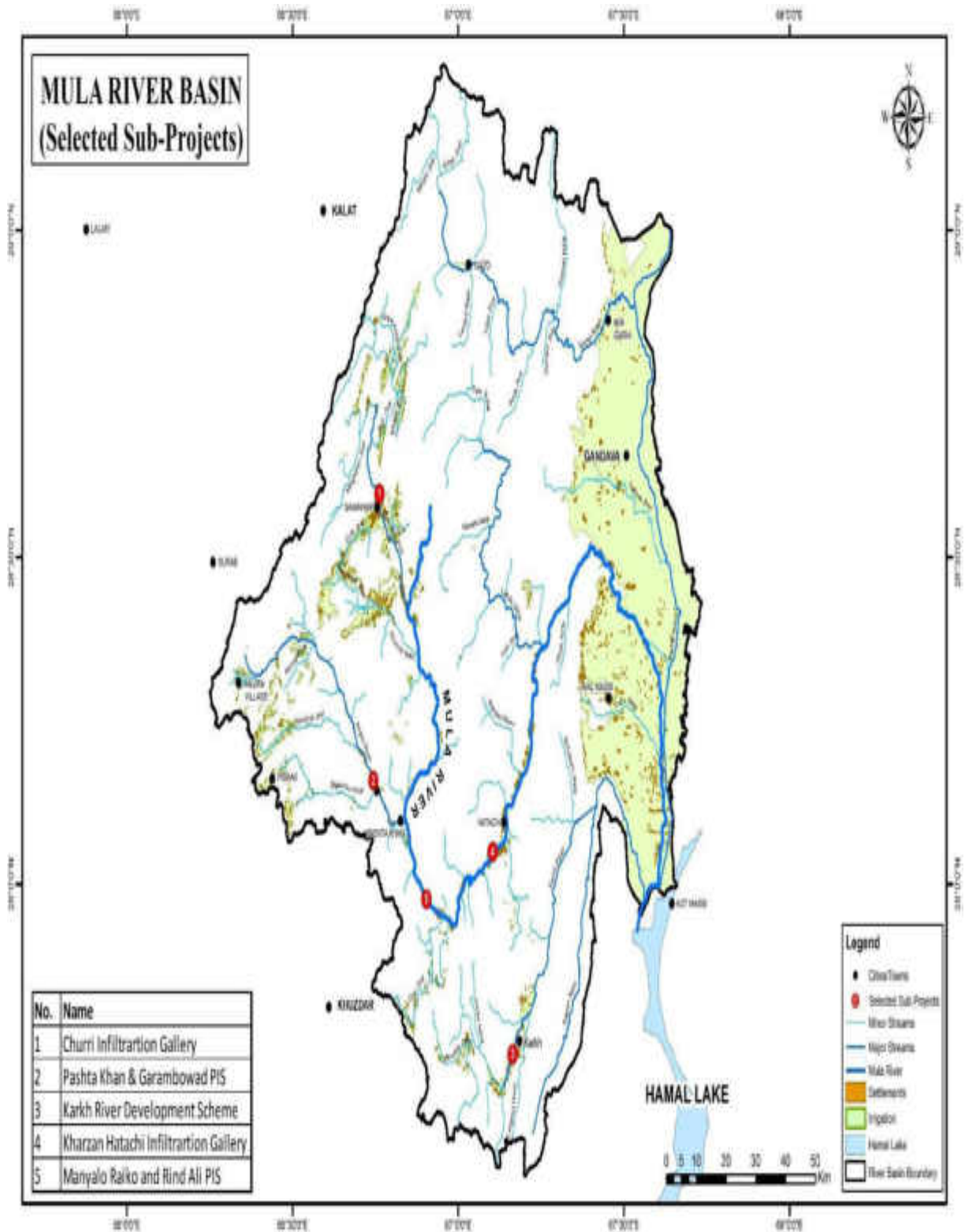


Figure 1: Location map of Mula River Basin

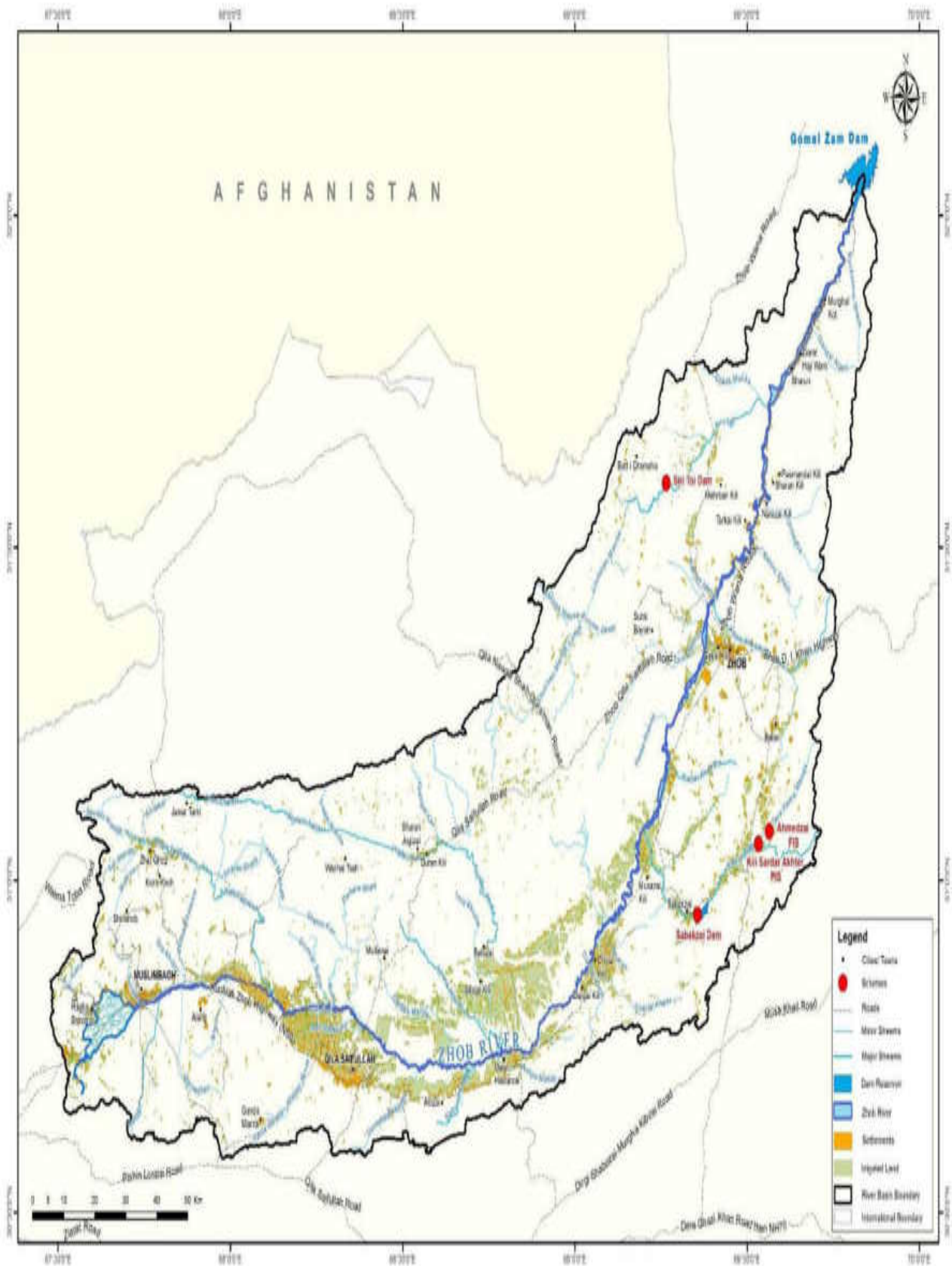


Figure 2: Location map of Zhub River Basin



Figure 3: Ahmedzai Sub-project NCB 08 camp location

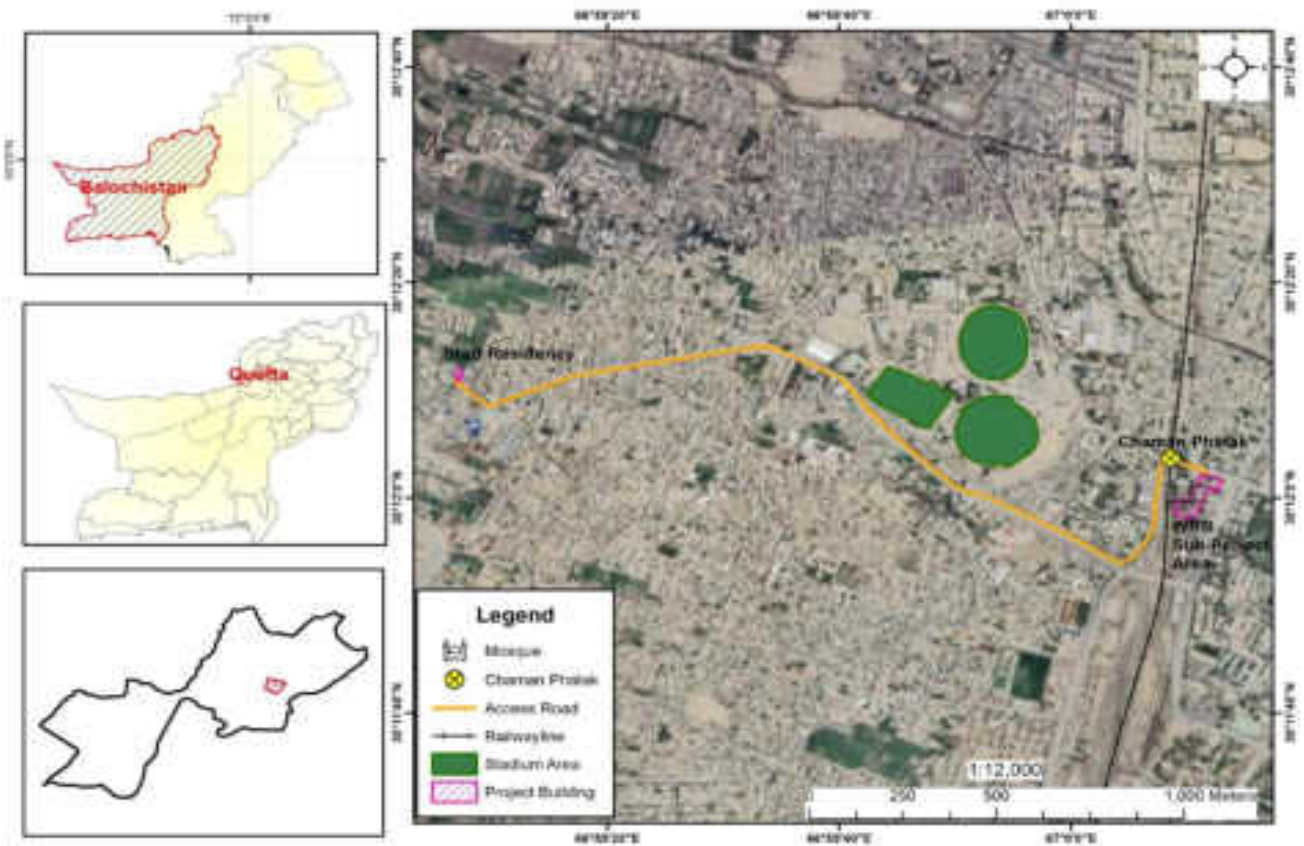


Figure 4: Water Resources Building sub- project NCB 05 Contractor staff Residency

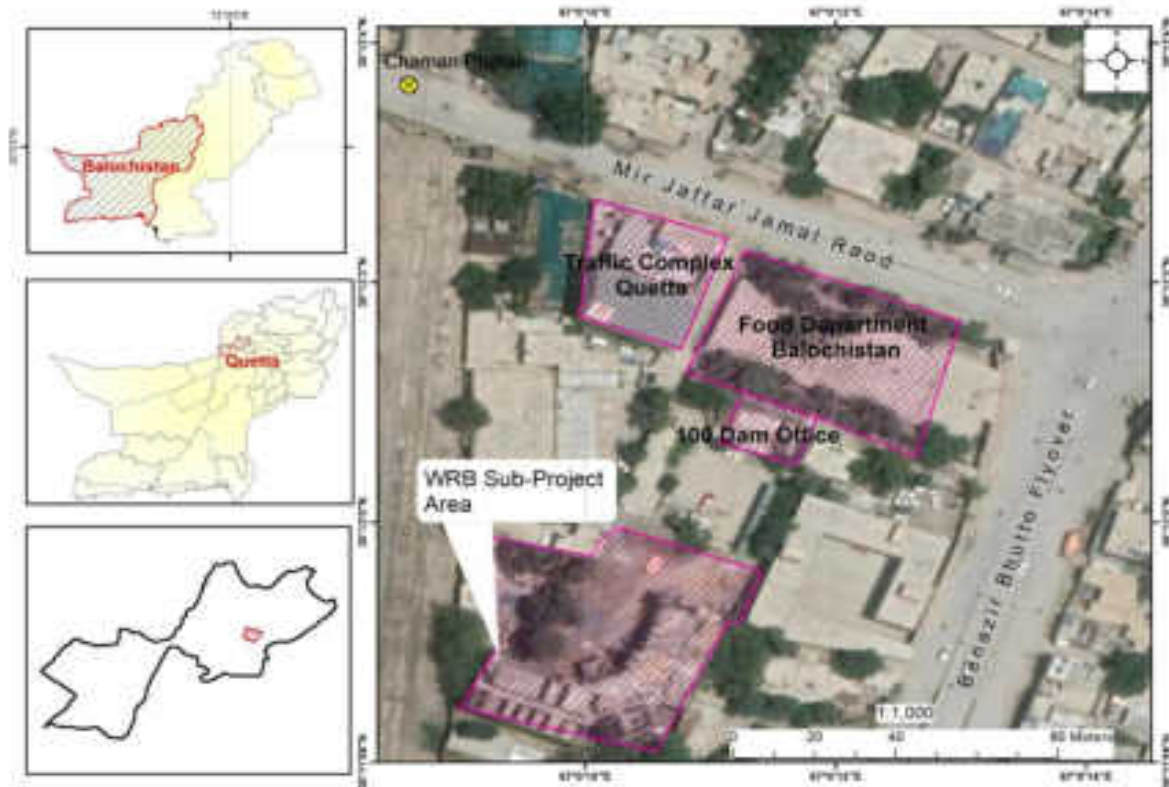


Figure 5: Proposed project location WRB sub-project NCB 05 Quetta

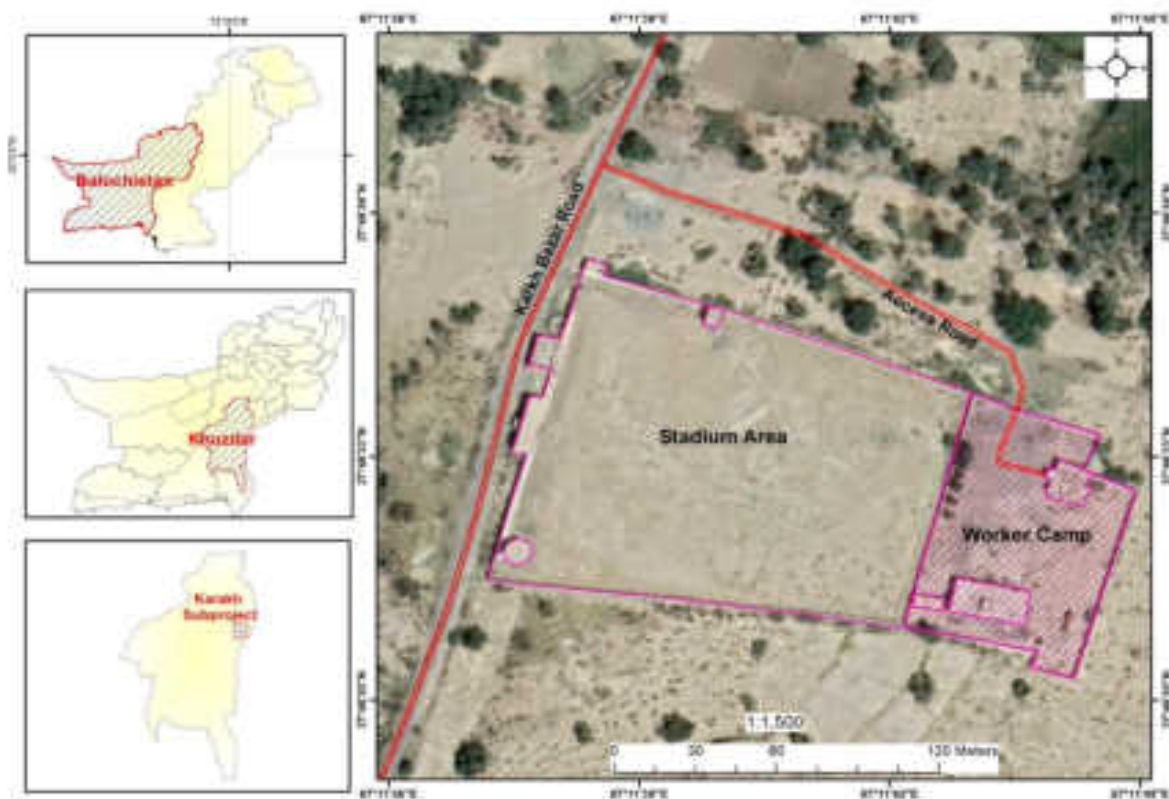


Figure 6: Karakh valley development sub-project NCB 01 location

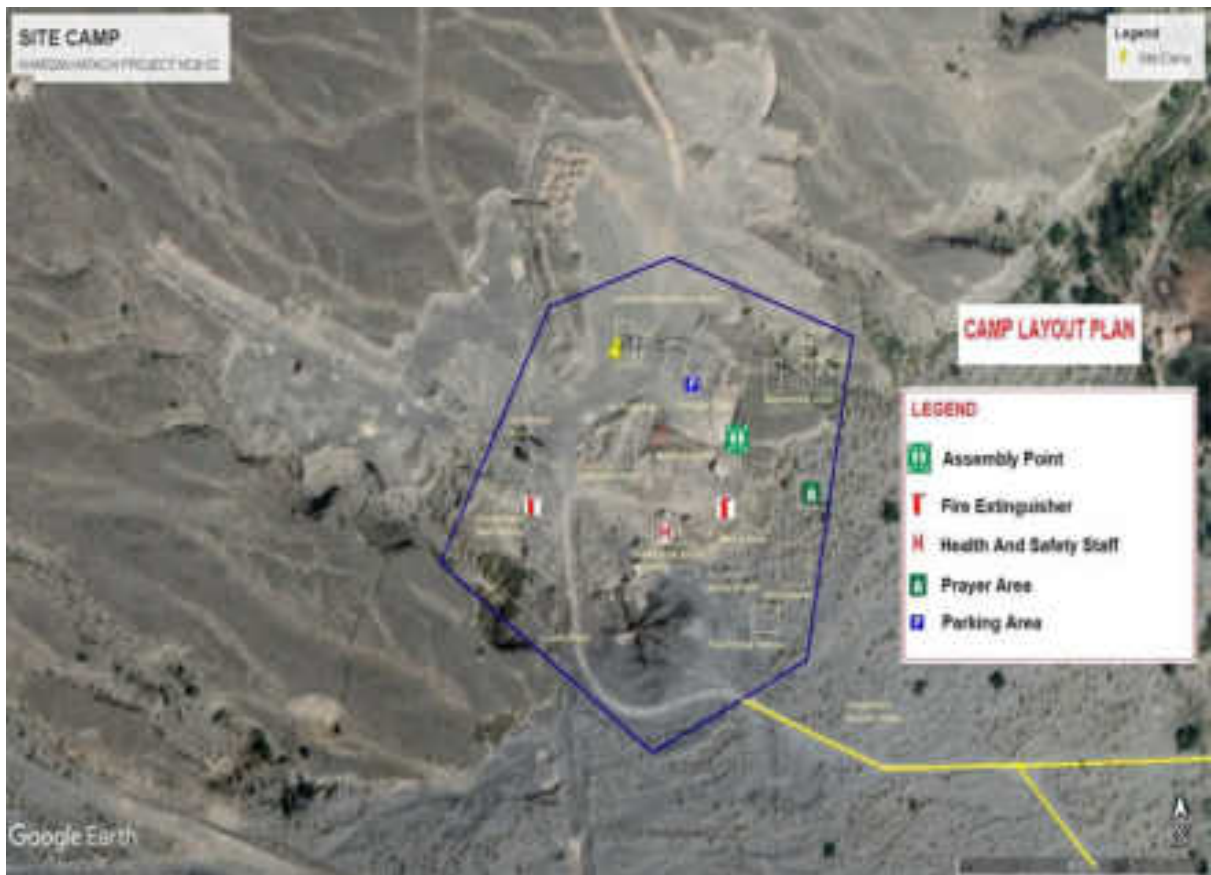


Figure 7: Kharzan Hatachi Infiltration Gallery sub-project NCB 02 location



Figure 8: Siri Toi Dam camp site sub-project ICB 01 location

2 PROJECT DESCRIPTION AND CURRENT ACTIVITIES

Project Description

18. The Asian Development Bank (ADB) is partnering with the Government of Balochistan Province (GoBP), to undertake the Balochistan Water Resources Development Sector Project (BWRDSP) Zhob and Khuzdar Districts.
19. The BWRDSP will support the implementation of the integrated water resources management policy of the Government of Balochistan (GOB). The policy provides a comprehensive framework for the province to address the issues of water management and development in the context of basin approach, with water harvesting, and groundwater recharging as an integral part of watershed management. About 11 potential sub-projects out of over 300 longlists in the Zhob and Mula river basins were selected for potential ADB financing based on a set of criteria such as water and land availability, economic viability, and a balanced approach to extending development support to different tribal groups. The project was approved by ADB on 31 August 2018 for a concessional loan of \$100 million from ADB's ordinary capital resources (L3700-PAK), a grant of \$3 million from the Japan Fund for Poverty Reduction (JFPR, G9197-PAK), and a grant of \$2 million from the High-Level Technology Fund (HLTF, G0597-PAK). The loan, grants, and project agreements were signed on 5 January 2019. The loan and grants became effective on 7 March 2019. The physical completion of the project will be on 31 July 2026.
20. The project is aligned with the following impacts: Increased farm income in Balochistan and improved water resources management in Balochistan. The project is focused on achieving two significant outcomes in Balochistan: enhancing farm income and improving water resources management. By effectively implementing this project, we aim to witness a remarkable increase in agricultural production in the project areas. Outputs: The project has three outputs: (i) irrigation infrastructure constructed and/ improved; (ii) command area and watershed protection expanded and improved; and (iii) institutional capacity strengthened.
 - I. **Output 1: Irrigation Infrastructure and watershed protection constructed and/or rehabilitated:** The output will consist of the construction, upgrade, or rehabilitation of the following: (i) Siri Toi Dam with a storage capacity of 30 million cubic meters, which will include a spillway and a water intake. (ii) Weirs and infiltration galleries. (iii) Approximately 276 kilometers of irrigation network, which will include headworks, off-takes, aqueducts, culverts, sluice gates, guide bunds, drop/fall facilities, washing structures, transition chambers, and livestock drinking facilities. (iv) Flood protection works aimed at reducing flood risks to irrigation canals and the command area.

-
- II. **Output 2: Command Area established and/or Improved:** This output will support Command Area Development, which includes the improvement of approximately 11,603 hectares of land to maximize the benefits from the irrigation investments. The improvements will be achieved through the following activities: (a) Construction and rehabilitation of secondary and tertiary canals in schemes identified for improvement under Output 1. (b) Construction of lined watercourses. (c) Improvement of on-farm water management and agronomic techniques, such as land leveling and irrigation scheduling. (d) Construction of Kacha track/access roads. (e) Implementation of rainwater harvesting and storage facilities. (f) Provision of farm machinery. (g) Providing farming training for sustainable farming practices. The expected targets for this output are as follows: i) Approximately 11,603 hectares of land will be improved and served by rehabilitated irrigation and Khushkaba infrastructure. About 5,989 hectares of land will be developed under new irrigation infrastructure. About 130 hectares of high-value agriculture will be piloted with a drip irrigation system through the JFPR grant. At least 22 women-led small-scale income-generating agri-businesses will be launched. The implementation of these targets aims to enhance agricultural productivity, improve water management, and promote sustainable farming practices in the region.
- III. **Output 3: Institutional capacity strengthened:** The Water Resources Information System (WRIS) has been established and is now operational with the help of technical assistance. This output aims to achieve the following targets: Utilization of high-level technology hydro-meteorological equipment for field validation of satellite-based WRIS data to monitor water resources in 3 river basins under the Grant Project. Capacity building for project management and implementation skills of at least 40 trained staff from the Irrigation Department (ID), Agriculture and Cooperative Department (ACD), and Project Management Office/Project Implementation Office (PMO/PIO). At least 30% of these trained staff should be women. Training of at least 750 farmers to enhance their knowledge and skills in the efficient use of water and value-added farming practices. Training of at least 250 women for income-generating high-value agri-businesses. Pilot implementation of high-value agriculture on approximately 130 hectares of land in the project area. This includes the installation of about 160 cost-effective solar-powered drip irrigation systems, construction of two olive oil extraction plants and two processing plants for fruits and vegetables. Additionally, at least 22 women-led small-scale income-generating agri-businesses for livestock will be established to strengthen high-value farming technology and contribute to increasing agricultural production. Strengthening of high-value farming technology through technology demonstrations on at least 130 hectares in 160 farms. Guidelines on efficient water usage and agriculture inputs will be provided to further

support agricultural production. Enhancement of community capacity in high-value agriculture, including training for efficient water use and value-added farming practices.

Project Contracts and Management

21. The Government of Balochistan (GOB), through its Irrigation Department, serves as the executing agency, while the Agriculture and Cooperatives Department (ACD) acts as the implementing agency, being wholly responsible for the Project implementation. This arrangement was jointly agreed upon between the borrower and ADB and is in accordance with the policies and procedures of both the government and ADB. To oversee the overall project implementation and coordination, the Project Management Office has been established in Quetta.

22. Table 1 provides the environmental management teams for this project along with their respective roles.

Table 1: Key Project stakeholders and their contacts

Organization	Discipline/ Designation	Deployed Team	Location	Contact no	Email Id
PMO	Project Director	Muhammad Sufyan Durrani	Quetta	0333- 5172464	pd.bwrdsp@gmail.com
	Deputy Project Director (MRB)	Mr. Nadeem	Khuzdar	0333- 4198491	
	Deputy Project Director (ZRB)	Mr. Abu Bakar	Zhob	0333- 7872140	
PIO	Deputy Project Director	Asif Mastooi	Quetta	0333- 3122310	pio.bwrdsp@gmail.com
ADB	Environment Specialist	Syed Asim Ali Sabzwari	Islamabad	(+632) 632-6757	asabzwari@adb.org
ADB	Environment Specialist (Consultant)	Abdul Basit Khan	Islamabad	0333- 3427609	abkhan.consultant@adb.org
NESPAK/ RHC	Team Leader	Habib Ullah Bhutto	Quetta	0334- 8665251	bwrdsp@gmail.com
NESPAK/ RHC	Environment Specialist	Dr Akhtar Iqbal	Lahore	0300- 8381968	enviro@rehmanhabib.com
	Environment Specialist	Sibghat Ullah Khan	Quetta	0331- 9017601	sibghat.envir86@gmail.com
Siri Toi Dam (ICB 01)	(Environment Specialist)	Allah Dino	Karachi	0334- 1271590	Adamur105@gmail.com
Contractor (WRB)	HSE	Tarique Rahim	Quetta	0334- 2190723	Adamur105@gmail.com
Contractor (Ahmedzai)	HSE Supervisor	Abdullah Khan	Ahmedzai Zhob	0334- 9278908	AbdullahHKD95@gmail.com
Contractor (Karakh)	HSE Supervisor	Shah Meer Ahmed	Karakh (Khuzdar)	0333- 0395887	Shahmeerahmed1960@gmail.com

Contractor (Kharzan Hatachi)	(Environment Specialist)	Arif Hameed	Kharzan Hatachi	0331-3933627	Arifhameed710@gmail.com
Contractor (Kharzan Hatachi)	HSE Supervisor	Zakria Baloch	Kharzan Hatachi	0332-2657057	
Contractor (Pashta Khan)	Environmental Specialist	Shehzad Channa	Khuzdar	0333-7770410	

23. The Government of Balochistan (GoB), through the Irrigation Department, serves as the executing agency for the project, while the Agriculture and Cooperatives Department (ACD), with active support from relevant departments such as Forestry and Wildlife, and Livestock and Dairy, acts as the implementing agency. To ensure effective project implementation and coordination, a Project Management Office (PMO) has been established in Quetta. The PMO, led by a Project Director, is directly responsible for Output 1 and Output 3. Additionally, a Project Implementation Office (PIO) has been established within the ACD to handle the implementation of Output 2. For Output 1, the PMO receives support from the Deputy Director of Irrigation in Zhob and Khuzdar districts, as well as the District Forest Officers and their staff in Zhob and Khuzdar districts for the implementation of watershed protection measures. Regarding Output 2, the PIO is assisted by Deputy Directors responsible for on-farm water management in Zhob and Khuzdar districts. Output 3 will be implemented by the PMO, with support from the PIO.

24. The BWRDSP Consultants have been assigned the specific responsibility of assisting the PMO in ensuring safeguard compliance of civil works, with particular emphasis on monitoring the implementation of Environmental Management Plans (EMPs) through the Contractors' Site-Specific Environmental Management Plans (SSEMPs) and other related aspects of the project.

Project Activities during reporting period

25. This report represents the 5th Semi-Annual Environmental Monitoring Report for the Balochistan Water Resources Development Sector Project, covering the period from January to June 2023. The report contains findings of Environmental Compliance monitoring activities conducted at the following sub-project sites:

1. Siri Toi Dam ICB 01,
2. Ahmedzai Perennial sub-project NCB 08,
3. Water Resources Building NCB 05,
4. Karakh Valley Development Sub-Project on Mula River NCB 01,
5. Kharzan Hatachi Infiltration Gallery NCB 02.
6. Kili Sardar Akhtar NCB 06.

2.1.1 Siri Toi Dam Sub Project ICB 01

26. The Siri Toi Dam sub-project (ICB 01) is situated in Union Council Sambaza, Tehsil, and District Zhob. The primary dam structure will be an Earth fill Dam with a height of 72 meters and a length of approximately 304 meters. For a Command Area of 3948 hectares, more than 28,243 meters of main and distributary channels have been designed, along with about 50 kilometers of secondary channels. The construction contract for this project has been awarded to M/s Noor ul Haq & Brothers.

27. The Siri Toi Dam camp is located at a considerable distance from the local community/settlement. The total area of the leased land for the camp is estimated to be 20 acres. The camp includes various facilities, such as consultant and contractor offices, consultant and contractor staff residences, accommodations for laborers, mess for staff and labor, a residency for FC, and a Mosque. The contractor staff will be accommodated in the camp, which also features worksite facilities capable of housing between 100 and 200 workers, with an average permanent staffing and workers on-site.

Table 2: Siri Toi Dam Subproject ICB-01 works progress

Sr. No	Activity	Status
1.	Camp Establishment	95% completed
2.	Dyke [Trench Excavation]	16 % completed
3.	Spillway [Excavation]	95% completed
4.	Access Road	5%

Table 3: Details of ongoing construction activities.

S. No.	Siri Toi Dam ICB 01	
1.	Camp establishment	Masonry
2.	Earth work (Spillway)	Excavation
3.	Dyke	Key Trench Excavation
4.	Access Road	Excavation

Table 4- Detail of material and sources of Siri Toi Dam sub-project ICB 01 are as under

Sr. No.	Name of Material	Source of Material	Quantities Used
1	Cement	D.G Lucky, Lucky cement, Fauji cement, Mapple leaf cement	50700 bags
2	Steel	Agha steel, Faizan steel, Naveena steel	179990 Kg
3	Earth work and excavation	Borrow Material areas	3200000 cu.m
4	Crush aggregates		56640 Tons

5	Sand	As per approved sources nearby site	93360 Tons
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28. The campsite has facilities for offices, residential accommodation for staff, as well as workers/labors. Kitchen, dining, and washroom areas have been properly developed to ensure hygienic requirements.
29. A material testing laboratory has been constructed inside the camp.
30. A dispensary has been provided near the offices, which has facilities with qualified medical staff along with all necessary medicines. A full-time ambulance facility is provided for any serious emergencies.
31. In accordance with SSEMP (Site Specific Environmental Management Plan), a waste collection area has been provided in the camp with proper signs.
32. A diesel-powered generator is also stationed in the camp.
33. Security rooms and a mosque have also been provided in the camp, which are close to the main entrance of the camp.
34. The following table presents the number of workers during the period January to June 2023. The number of workers has increased manifold in each month, which is attributed to the increase in the volume of work.

Table 5- Manpower Technical/skilled/ unskilled staff details

Designation	Numbers
Project Manager	1
Chief Surveyor/Quantity Surveyor	1
Surveyor	3
Surveyor Helper	3
General Forman	2
Material Engineer	1
Lab Technician	1
Lab Helper	1
AutoCAD Operator	2
Accountant	1
Storekeeper	1
Procurement Officer	1
Supervisor	1
Mechanic	2
Auto Electrician	1
Batching Plant Operator	1

Batching Plant Helper	1
Crush Plant Operator	1
Crush Plant Helper	2
Heavy Machinery Operator	40
Heavy Machinery Helper	24
Diesel Store	3
Security Guard	3
Cook	2
Cook Helper	2
Labor	44
Mason	14
Steel fixer	2
Total	161

35. Details of machinery/equipment's of sites has been given in Exhibit 5.

Table 6: List of Machinery/Equipment's

Name of Machine	Numbers
Excavator	12
Roller	3
Grader	3
Loader	3
Dozer	2
Transit Mixer	2
Dumper	9
Tractor 240	3
Tractor 385	3
Tractor Trolley	1
Pickup	3
Generator	5
Water Bowser	4
Batching Plant	1
Crush Plant	1
Diesel Tank	5
Tractor with Blade	-
Mechanical Hand Mixture Machine	-
Water Pump for dewatering	-
Jack Hammer	-
Light Travelling Vehicle	-
Welding Plants	-
Motor Cycle	2
Low Bed	-

Steel Machine	7
Toyota Car (Surf)	2
Total	69

2.1.2 Ahmedzai Sub Project NCB 08

36. The sub-project Ahmedzai Irrigation Scheme (NCB 08) is situated in District Zhob, approximately 51 km South-East of Zhob City. The construction of this sub-project was completed on 21 December 2022. Following the completion, the Defect Liability Period (DLP) commenced on 22 December 2022, as indicated in the letter provided in Annexure I.

Table 7: Ahmedzai Subproject NCB-08 Contractor works progress

Sr. No	Activity	Status
A. Weir		
1.	Weir Structure	100% completed
B. Perennial Channel		
1.	Stone masonry side wall	99 % completed
C. Flood Channel		
1.	Earth work (excavation, filling)	100% completed
2.	Stone masonry side wall	100 % completed

2.1.3 Karakh Valley Development Sub Project NCB 01

37. The Karkh Valley Development sub-project (NCB 01) encompasses 2250 hectares of culturable land, which will be brought under irrigated agriculture. An estimated 20 million cubic meters (MCM) of water is available annually for agricultural development in the command area on both the right and left banks of the river. Currently, the cropping intensity in the core sub-project area is 89%, and it is expected to increase to 120% after the completion of the core sub-project. This development is anticipated to lead to significant socio-economic improvements in the region. The proposed Karakh Valley Development sub-project consists of three parts: (a) General works - which pertain to the Karakh Valley as a whole, (b) Weir construction at Jhalaro, and (c) Weir rehabilitation at Chutta. The design interventions for the sub-project include: (a) Guide bund/flood protection works, (b) Construction of a new Jhalaro weir, (c) Weir rehabilitation at Chutta, (d) Rehabilitation of Chutta lift irrigation (pump house), and (e) Lining of unlined existing channels. The contract for the proposed project has been awarded to M/S Zahir Khan Brothers VS Agha Construction Company.

38. The primary campsite for the Karakh sub-project is located on Khuzdar road, while a temporary campsite is situated nearby the sub-project site on Karakh village road. The camp facilities can accommodate between 100 and 200 workers, with an average permanent staffing of 35 workers on-site. This includes professional and technical personnel, workers, drivers, and operators involved in various tasks, including those related to the canteen.

Table 8: Karakh Valley Development sub-project NCB-01 Contractor works progress

Sr. No	Sub-project Name	Earthwork/excavation status
1.	Wanderi	90% completed
2.	Chutta	90% completed
3.	Kadri	90% completed
4.	Jhalaro	80% completed
5.	Acherwand	75% completed
6.	Sinjori	60% completed
7.	Norwah	30% completed
8.	Bund 2	80% completed
9.	Bund 3	50% completed
10.	Bund 6	100% completed
11.	Bund 7	100% completed
12.	Bund 8	100% completed

Table 9- Detail of material and sources of Karakh Valley Development sub-project NCB 01 are as under

Sr. No.	Name of Material	Source of Material	Quantities Used
1	Cement	Power D.G Lucky	820010 bags
2	Steel	Faizan Amberley	245560 Kg
3	Earth work	Borrow Material from site	Record awaited
4	Crush	Karakh	
5	Sand	Wadh	
6	Aggregate	Karakh River	

39. The campsite has facilities for offices, residential accommodation for staff as well as workers/labors. The kitchen, dining, and washrooms have been properly developed to ensure hygienic requirements.

40. A material testing laboratory has been constructed inside the camp.

41. A register is placed for record maintenance of first aid provided to workers.

42. A diesel-powered generator is also stationed in the camp area.

43. The following table presents the number of workers during the period January to June 2023. The number of workers has increased manifold each month, which is attributed to the increase in the volume of work.

Table 10: Details of ongoing construction activities.

Karakh valley development sub-project NCB 01			
1.	Jhalaro Weir	D/S RCC of cut of wall completed	12 meters length
2.	Jhalaro Weir	U/S RCC cut of wall completed	8 meters length
3.	Jhalaro Weir	D/S RCC bed	D3, D6, D7 and D8
4.	Jhalaro Conduit	RCC bed, wall and top slab	RD 0+00 to 0+017
5.	Jhalaro Weir	Excavation layout cut of wall	12 meters length
6.	Jhalaro Weir	D/S plum concrete bed	D8, D9 and D10
7.	Jhalaro Weir	Bitchumen coating of RCC beds	D3, D4, D6, D7 and D8
8.	Bund 3	Stone masonry wall	RD 0+370 to 0+410
9.	Bund 3	10 layers done	RD 0+500 to 0+675
10.	Bund 3	6layers done	RD 0+750 to 0+900
11.	Bund 3	14 layers done	RD 0+500 to 0+675
12.	Bund 3	Top layers done	RD 0+410 to 0+500
13.	Bund 2	Stone pitching work in progress	RD 0+00 to 0+650
14.	Khadri channel	Nakkas completed	
15.	Jhalaro Weir	U/P and D/S slope crest plum concrete	Panel 3, 4, 6, 7, 9 and 10

Table 11- Manpower Technical/skilled/ unskilled staff details

Designation	Number
Project Manager	1
Chief Surveyor/Quantity Surveyor	1
Surveyor	2
Surveyor Helper	2
General Forman	4
Material Engineer	1
Lab Technician	1

Lab Helper	1
AutoCAD Operator	1
Accountant	1
Storekeeper	1
Procurement Officer	1
Supervisor	4
Mechanic	1
Auto Electrician	1
Batching Plant Operator	2
Batching Plant Helper	1
Crush Plant Operator	2
Crush Plant Helper	1
Heavy Machinery Operator	27
Heavy Machinery Helper	18
Diesel Store	1
Security Guard	11
Cook	3
Cook Helper	1
Labor	22
Mason	4
Total	116

Table 12- List of Machinery/Equipment's

Name of Machine	Number
Excavator	5
Roller	2
Grader	2
Loader	3
Transit Mixer	3
Dumper	5
Tractor Trolley	7
Pickup	3
Generator	3 (Heavy)
Water Bowser	3
Batching Plant	1
Diesel Tank	1
Tractor with Blade	1
Mechanical Hand Mixture Machine	1
Water Pump for dewatering	4

Jack Hammer	1
Welding Plants	1
Motor Cycle	2
Steel Machine	1
Total	49

2.1.4 Water Resources Building Sub Project NCB 05

44. The proposed civil works for the Water Resources Building in Quetta (NCB 05) are situated on an existing building compound owned by the Irrigation Department, Balochistan, which is located on government-owned land. The construction contract for this project has been awarded to M/S Abdul Hameed Bangulzai JV M/S Muhammad Akram Shawani.

45. The Water Resources Building site in Quetta is situated in a highly congested area within the city. Despite the limited space, the contractor has managed to arrange three rooms on-site to accommodate laborers. Additionally, a water dispenser is available to provide safe drinking water, and toilet facilities are also present at the site to cater to the needs of the workers.

Table 13- Detail of material and sources of WRB NCB 05 are as under

Sr. No.	Name of Material	Source of Material	Quantities Used
1	Cement	Fauji Cement Ltd, Mapple leaf	30000 Bags
2	Steel	Agha Steel Pvt Ltd Karachi	180 Tons
3	Earth work/back filling	Yarro Sand	35000 cu.m

Table 14: NCB-05 Water Resources Building Contractors works Progress

Sr. No	Activity	Status
1.	Excavation	100% completed
2.	Anti-termite	100% completed
3.	Lean concrete	100% completed
4.	Raft foundation	100% completed
5.	Backfilling	100% completed
6.	Plinth steel	100% completed
7.	Plinth concrete	100% completed

46. First and second conference halls are completed; only finishing items are remaining, and the work is in progress.

Table 15: Details of ongoing construction activities.

Water Resources Building sub-project NCB 05
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1.	Conference Hall walls brick masonry	WRB Quetta
2.	Conference Hall roof concrete	
3.	Lift walls RC concrete	
4.	Ground Floor flooring conduit	
5.	Door frames installation at ground floor	

Table 16- Manpower Technical/skilled/ unskilled staff details

Designation	Numbers
Project Manager	1
Chief Surveyor/Quantity Surveyor	1
Surveyor	1
Surveyor Helper	1
General Forman	1
Material Engineer	1
Lab Technician	1
Lab Helper	1
AutoCAD Operator	2
Accountant	1
Storekeeper	1
Procurement Officer	1
Supervisor	1
Mechanic	1
Auto Electrician	1
Heavy Machinery Operator	2
Heavy Machinery Helper	2
Diesel Store	1
Security Guard	1
Cook	1
Cook Helper	1
Labour	10
Mason	5
Steel fixer	2
Total	40

Table 17- List of Machinery/Equipment's

Name of Machine	Numbers
Excavator	2
Roller	1
Grader	1
Loader	1
Dozer	-

Transit Mixer	2
Dumper	2
Tractor 240	1
Tractor 385	-
Tractor Trolley	1
Pickup	1
Generator	1
Water Bowser	1
Diesel Tank	1
Tractor with Blade	-
Mechanical Hand Mixture Machine	-
Water Pump for dewatering	-
Low Bed	-
Steel Machine	1
Toyota Car (Surf)	-
Total	16

2.1.5 Kharzan Hatachi Infiltration Gallery Sub Project NCB 02

47. The Kharzan-Hatachi Infiltration Gallery sub-project (NCB 02) is situated in District Khuzdar in the Mula River Basin, specifically along the Mula River. The proposed interventions for the sub-project include: (a) Construction of two infiltration galleries. (b) Construction and rehabilitation of the water conveyance system and associated structures. (c) Implementation of flood protection works for irrigation canals and the command area. The primary aim of this sub-project is to rehabilitate and improve the damaged infrastructure, thereby enhancing the size of the command area with improved irrigation facilities. The construction contract for this project has been awarded to M/s Agha Brothers Construction Company, M/s Agha Construction Company, and M/s Sadaat Enterprises.

48. The Contractor campsite for the Kharzan Hatachi sub-project is located in Union Council Abad, Tehsil Mula, District Khuzdar. The contractor has set up two separate camps—one for the residence of staff and another for labor residence. The contractor is providing basic facilities at these camp sites, and staff members have been hired to oversee all activities as required. The camp incharge ensures proper maintenance of good housekeeping at the campsite.

Table 18- Detail of material and sources are as under

Sr. No.	Name of Material	Source of Material	Quantities Used
1	Cement	Power D.G Lucky	12000 bags
2	Steel	Agha Steel Pvt Ltd Karachi	51.4 tons

3	Earth work	Borrow Material from site	55142
4	Crush	Asif crush plant	414100 ft
5	Sand	Jahn Jal	26694 ft

Table 19: Kharzan-Hatachi NCB-02 Contractors works Progress

Sr. No	Sub-project Name	Earthwork/excavation status
1	Stone spawl	57% completed
2	Stone pitching on slop	45% completed
3	Stone pitching on level	71% completed
4	Excavation in Conduit	50% completed
5	Earthwork of FP Bund	35% completed
6	Excavation in channels	25% completed
7	Construction joint in lining	6% completed
8	Expansion joint in lining	4% completed
9	Water stopper	20% completed
10	Concrete class B(PCC)	14% completed
11	Steel	14% completed
12	Bund # 2	75% completed
13	Bund # 3 B	100% completed
14	Bund 3 C & 3 A	70% completed
15	Bund # 1	0%
16	Bund # 4 A	0%
17	Bund # 4 B	0%

Table 20: Details of ongoing construction activities.

Kharzan Hatachi Infiltration Gallery sub-project NCB 02		
1.	Bund # 2	Total earth Excavation 91325 cu.m
2.	Bund # 3 B	
3.	Bund 3 C & 3 A	In progress

Table 21- Manpower Technical/skilled/ unskilled staff details

Designation	Number
Project Manager	1

Chief Surveyor/Quantity Surveyor	1
Surveyor	1
Surveyor Helper	4
General Forman	1
Material Engineer	1
Lab Technician	1
Lab Helper	1
AutoCAD Operator	1
Accountant	1
Storekeeper	1
Procurement Officer	1
Supervisor	1
Mechanic	2
Auto Electrician	1
Environmental Specialist	1
HSE Officer	1
Batching Plant Operator	1
Batching Plant Helper	1
Crush Plant Operator	1
Crush Plant Helper	2
Heavy Machinery Operator	36
Heavy Machinery Helper	10
Diesel Store	1
Security Guard	3
Cook	2
Cook Helper	1
Labor	21
Total	100

Table 22:List of Machinery/Equipment's

Name of Machine	Number
Excavator	3
Roller	2
Grader	2
Loader	1
Dozer	1
Dumper	8
Tractor 240	1
Pickup	3

Generator	3
Water Bowser	2
Batching Plant	1
Crush Plant	1
Motor Cycle	1
Low Bed	1
Total	30

2.1.6 Kili Sardar Akhtar Sub Project NCB 06

49. The Killi Sardar Akhtar (PIS) sub-project is situated in the Union Council of Laka Bund, Tehsil, and District Zhob, approximately 49 km south-east of Zhob city in Gosa Kibzai. Access to the site is through a metaled road, starting from Zhob to D.I. Khan road, covering a distance of 17 km. The proposed interventions for the sub-project include: (a) Construction of infiltration galleries. (b) Construction and rehabilitation of the water conveyance system and associated structures. The main objective of this sub-project is to rehabilitate and improve the damaged infrastructure, thereby enhancing the size of the command area and improving irrigation facilities. The construction contract for this project has been awarded to M/s Noor ul Haq & Brothers.

50. As of now, the campsite for the Killi Sardar Akhtar sub-project is under construction and is located nearby the proposed channel. The camp is equipped with worksite facilities and has the capacity to accommodate between 50 and 100 workers. On average, the camp will have a permanent staffing of 55 workers on-site, including professional and technical personnel, workers, drivers, and operators associated with canteen tasks. The camp is being set up to support the project's construction activities and cater to the needs of the workers during the project implementation.

51. The construction camp will have the following facilities for the labours working on site:"

- Constant supply and accessibility of safe drinking water.
- Living Accommodations/Shelter.
- Sanitary and toilet facilities.
- Washing facilities.
- Kitchen/mess
- Laboratory for material testing
- Contractor offices
- Consultant offices
- Mosque etc

52. For the construction activities, borrow areas have been selected for the extraction of materials, which have already been approved by the Engineers. The contractor has prepared a Borrow Area Management Plan that pertains to the measures incorporated during the identification of borrow area locations, material extraction, and rehabilitation.

Table 23- Detail of material and sources are as under

Sr. No.	Name of Material	Source of Material	Quantities Used
1	Cement	Fauji Cement Ltd, Mapple Leaf	30000 bags
2	Steel	Agha Steel Pvt Ltd Karachi	180 tonne
3	Earth work/fill	Borrow Material from site	35000 cu.m

Table 24: Kili Sardar Akhtar NCB-06 Contractors works Progress

Sr. No	Activity	Status
D. Infiltration Gallery		
1.	Excavation	0% completed
E. Main Channel		
2.	Excavation	55% completed
3.	Back Filling	70% completed
F. Ghundai Channel		
3.	Earth work (excavation, filling)	0% completed

Table 25: Details of ongoing construction activities.

Kili Sardar Akhtar NCB-06		
1.	Stone Masonry	R.D 6+000
2.	Excavation	R.D 6+100

Table 26- Manpower Technical/skilled/ unskilled staff details

Designation	Number
Project Manager	1
Chief Surveyor/Quantity Surveyor	1
Surveyor	1
Surveyor Helper	2
General Forman	2
Material Engineer	1

Lab Technician	1
Lab Helper	2
AutoCAD Operator	1
Accountant	1
Storekeeper	2
Procurement Officer	1
Supervisor	2
Mechanic	1
Auto Electrician	1
Environmental Specialist	1
HSE Officer	-
Batching Plant Operator	-
Batching Plant Helper	-
Crush Plant Operator	1
Crush Plant Helper	2
Heavy Machinery Operator	5
Heavy Machinery Helper	2
Diesel Store	1
Security Guard	2
Cook	1
Cook Helper	1
Labor	15
Mason	4
Total	55

Table 27- List of Machinery/Equipment's

Name of Machine	Number
Excavator	2
Roller	1
Grader	1
Loader	1
Dozer	-
Transit Mixer	2
Dumper	3
Tractor 240	-
Pickup	1
Generator	2
Water Bowser	1
Batching Plant	-

Crush Plant	1
Diesel Tank	2
Motor Cycle	-
Low Bed	-
Steel Machine	1
Toyota Car (Surf)	1
Total	19

Description of Any Changes to Project Design

53. No changes to the project design have taken place during the reporting period of this report.

Description of Any Changes to Agreed Construction methods

54. No changes in the construction methodology have taken place during the reporting period of this report, with the initially developed method statements still applicable.

3 ENVIRONMENTAL SAFEGUARD ACTIVITIES

General Description of Environmental Safeguard Activities

55. During the reporting period, the BWRDSP consultants conducted environmental compliance monitoring of sub-project ICB-01. The field visits were conducted by the Site Coordinator (SC) Environmental Specialist, along with the contractor's Environmental Engineer. The Contractor's environmental team was responsible for conducting day-to-day inspections on the construction site and ensuring the implementation of measures as specified in the Environmental Management Plan (EMP).

Site Inspection

56. Site inspections of the sub-project are being performed to comply with the EMP provisions' requirements, and the Contractor is immediately directed to resolve any non-compliance identified during these inspections.

Issues Tracking (Based on Non-Conformance Notices)

57. During the reporting period, the BWRDSP Consultants noted that the contractor working on sub-project ICB 01 has been making efforts to improve environmental compliance based on the issues identified during the site visits.

58. During the monitoring process, non-compliances were identified, such as not wearing the full set of Personal Protective Equipment (PPE), inadequate site cleaning, improper installation of warning and information signs boards, and other related issues. In response, the BWRDSP Contractor was requested to implement appropriate corrective measures to address these non-compliances. Furthermore, the BWRDSP Consultants issued a warning to the Contractor, informing them that if they do not follow the recommendations provided by the Consultants, the Environmental Management Plan (EMP), and the Site-Specific Environmental Management Plans (SSEMP), Non-Conformance Notices will be issued. This warning was aimed at ensuring strict adherence to environmental standards and compliance with the specified guidelines to prevent any further non-compliances and to maintain environmental safeguards during the project implementation.

59. On 16 June 2023, the Consultant issued non-compliance notices to the sub-project contractor (Non-compliance notices - Annexure I & II, which were quickly resolved by the Contractor. Additionally, the Contractor is actively working on improving other identified issues.

60. The Subproject Environmental Staff implements daily, weekly, and monthly environmental monitoring checklists to assess various environmental parameters, enabling them to take corrective action for any observed non-conformance (sample checklists can be found in

Annexure III, IV, V, and VI). These checklists offer a comprehensive overview of various environmental aspects, including but not limited to: Soil conditions and contamination/Fuel and oil usage and spills/Generation and disposal of waste materials/Traffic management/Management of borrow areas/Drainage systems/Operations of diesel generators/Emergency response protocols/Camp management practices/Proper use of Personal Protective Equipment (PPE)/Maintenance of septic tanks/Vehicle movement guidelines/Worker's training and safety protocols/Placement of safety signs/Preservation of vegetation and tree-cutting procedures/Labor hiring procedures. The checklists are thoughtfully designed to address all relevant environmental parameters, and monitoring is carried out at regular intervals. In case of any non-compliance, the Environmental Staff takes appropriate corrective actions promptly. The Contractor's staff utilizes the data gathered through these checklists to develop reports assessing the level of compliance with the measures specified in the Environmental Management Plan (EMP). This monitoring process ensures that the project maintains adherence to environmental standards and complies with the required environmental safeguards.

61. The BWRDSP Consultants' environmental team discussed the revealed findings with the Contractor's team during their physical presence on the site or over phone conversations to identify the best corrective measures.

Table 28: Environmental Safeguards Activities Carried out During Reporting Period (January - June 2023)

Environmental Safeguard Activities	Dates
<ul style="list-style-type: none"> ▪ Review of Cost Estimates for EMP implementation; 	June 2023
<ul style="list-style-type: none"> ▪ Supervised and assisted the contractor Environmental Specialist for SSEMP preparation; 	Quarterly Daily
<ul style="list-style-type: none"> ▪ Regular coordination with the contractor Environmental Specialist for implementation of environmental mitigation measures taken in SSEMP and EMP. 	Regularly Daily
<ul style="list-style-type: none"> ▪ Regularly coordinated with engineers regarding updates on the project design and works; 	Daily/Weekly
<ul style="list-style-type: none"> ▪ Site inspections and guiding Contractor's personnel to constantly use PPE's and improving hygienic conditions at camp. 	Daily/Weekly
<ul style="list-style-type: none"> ▪ Guided Contractor HSE staff regarding preparation of Contractor's Environmental Monthly Report; 	Monthly

Trends

62. With a review of compliance to non-conformances and the Corrective Action Plan (CAP) provided in the previous SAEMR, it has been observed that the sub-projects of BWRDSP

are progressing and improving their compliance with environmental requirements in accordance with their respective Environmental Management Plans (EMPs). Sub-projects have made significant investments in environmental compliance by allocating staff and providing facilities for effective environmental management.

63. Based on the previous CAP record, it was noted that fire extinguishers were not available on sites, and quarterly instrumental monitoring was not being performed, as previously reported. However, the Contractor has taken appropriate action to address these issues. Fire extinguishers have now been provided at the camp sites, and instrumental monitoring is being conducted regularly at each site. This indicates the Contractor's commitment to addressing non-compliance and implementing corrective measures to enhance environmental compliance on the project sites. The efforts made by the sub-projects are contributing to the overall improvement in environmental performance, aligning with the prescribed EMPs and ensuring the project's adherence to environmental safeguards.

Unanticipated Environmental Impacts or Risks

64. No new environmental impact or risk identified during this reporting period.

Grievance Redressal Mechanism (GRM)

65. The Grievance Redressal Committee has been formed. No grievances have been received up until the reporting period at any of the project sites.

4 ENVIRONMENTAL MANAGEMENT

General

66. The Environmental Management Plan (EMP) is an integral part of the BWRDSP sub-project bidding documents and is being broadly followed by the contractor. The Environmental Specialist/HSE Advisor of the contractor's staff is regularly and strictly monitoring the overall compliance related to environmental and safety issues."

67. The overall Environmental and Social Performance is observed to be good/satisfactory, while efforts for continuous improvements are being carried out.

Site Specific Environmental Management Plan (SSEMP)

68. A Site-Specific Environmental Management Plan (SSEMP) minimizes adverse or negative impacts of construction activities on local communities and the natural environment. It aims to reduce the induced impacts of construction activities and prevent pollution, ensuring that construction activities are carefully planned to eliminate any risk to the environment. By making these adjustments, the sentence flows more smoothly and maintains its intended meaning. The SSEMP is clearly defined as a tool to mitigate negative impacts, reduce induced impacts, and ensure environmental safety during construction activities.

69. The SSEMP also provides an approach for managing and monitoring environmental and social-related issues. It offers a mechanism to address the adverse environmental impacts of a project during its construction, thus accelerating project benefits. Additionally, the SSEMP describes the institutional framework and resource allocations proposed by the PMO to effectively implement the plan. With this revision, the sentence is clearer in its structure, and the meaning is more apparent. It highlights the various roles of SSEMP, such as managing environmental and social issues, addressing adverse impacts, and outlining the necessary institutional support for successful implementation.

70. Site-Specific Environmental Management Plan details of sub-projects are given below

- ICB 01 has been approved on 9th December 2022.
- NCB 08 conditionally approved by ADB on 20 November 2021.
- NCB 05 is approved by ADB on 3 December 2021.
- NCB 01 SSEMP – 1st Draft has been reviewed by ADB and updated draft has been submitted on 4 April 2023 to the PMO.
- NCB 02 - submitted to client office for further process on 16/05/2022.
- NCB 06 – Consultants have provided comments on 31st March 2023 and shared with the contractor for improvement.
- NCB 04 Contractor Environmental Specialist addressing SC comments.

- NCB 07 Contractor Environmental Specialist addressing SC comments.

Emergency Response Arrangements:

71. Emergency response plans are comprised of the following mandatory work plans as per the requirements of the approved EMP/SSEMP and are being implemented

- Health, Safety and Environment Plan
- Risk Assessment Plan
- Construction Safety Plan
- Emergency Preparedness Response Plan

72. Emergency response procedures and contact details were displayed at the sub-project sites, indicating whom to contact in the event of a fire as elaborated here

- Site Supervisor
- Environmental Engineer
- Fire Brigade
- Nearby Doctor
- Nearby Hospital

73. The Emergency Response Plan (ERP) has been elaborated in plain language, and subsequently, all prone areas and dangerous spots will be monitored on a daily basis. Monitoring safety observation cards will be produced for inspection, and if any unsafe act or unsafe condition is observed in the project, it will be promptly mitigated. With these revisions, the sentence reads more smoothly and clearly describes the elaboration of the Emergency Response Plan (ERP) and the daily monitoring of prone areas and dangerous spots. Additionally, the use of safety observation cards for inspection and prompt mitigation of any unsafe acts or conditions are highlighted effectively.

Waste Management Plan

74. The Waste Management Plan (WMP) includes the collection, storage, transportation, and disposal of the generated waste in an environmentally safe manner. The WMP is designed for the active construction sites and camp sites. The workers are trained to implement the WMP at the camp(s) and construction sites. The following are the important features:

- Waste segregation at source.
- Reusable and recycled material (cardboard, packing material, Bottles, cans, empty bags, drums) is re-used whereas rest is sold in the market.
- Transportation of solid waste as per SOPs.

75. The following section provides the details of major types of waste materials that have been produced from project activities, mainly kitchen/domestic waste and construction waste, and how they are being managed.

Current Period

I. Siri Toi Dam Sub-project Zhob River Basin

76. The construction activities began after obtaining approval for the Site-Specific Environmental Management Plan (SSEMP) on 9th December 2022. The camp establishment is currently 95% complete. Contractor staff has received assistance in marking the designated area for solid waste management. Signboards were observed during the reporting period, and photographic evidence is provided below.



Sign boards provided near waste collection bins

Inspection of waste bins in Siri Toi Dam Camp site

Figure 9: Signage and waste segregation

77. The Contractor has provided waste collection bins at various points in the camp, as well as at work sites. Consequently, wastes are being collected in these waste bins throughout

the camp. Construction wastes, such as plastics and paper, are collected and transported to the designated waste receiving area within the camp.

78. All the excavated materials are used for filling the cut and low areas. Hence, no soil heaps have been observed due to excavation activities.
79. Local communities are usually asked to take away domestic/kitchen waste. Small quantities of waste are left for final disposal. Therefore, wastes are managed at the camp in designated ditches made for a specific purpose.
80. As discussed in the previous section, small quantities of waste, including plastics, cloth pieces, and cartons, have been observed at a few locations due to a windstorm. Such waste can be managed through the provision of improved waste storage areas designated in the campsite.
81. At the waste collection area of the camp, wastes of economic value are segregated and sold to recyclers, while the remaining waste, mostly degradable in nature, is then dumped in a pit near the camp with the approval of the Project Consultant.

Table 29- Solid Waste generated at sub-project sites are as under

Sr. #	Name of Sub-Project	Solid Waste generated in Kilograms/day	Types of Waste	Remarks
1	Siri Toi Dam ICB 01	1.2 Kg/day	Plastic, polythene bags	Solid waste is preferable reused, recycled and disposed of at designated dumping site.
		2 Kg/day	Solid waste/ cans etc	
		1 Kg/day	Kitchen waste/ Organic waste	

II. Ahmedzai Sub-project

82. Site activities have been closed since December 2022.

III. Water Resources Building

83. There is no workshop area, washing yard, or batching plant at the project site. Therefore, no bulk waste is produced from this site. The burning of solid waste at the workplace is strictly prohibited. Waste material is disposed of in the waste yard in a safe condition, ensuring that it does not block access for other users and people.

a. Kitchen and General/Domestic Waste

84. This type of waste has been generated from the construction site and offices of the project. The solid waste produced at the site is being collected into waste bins and transported to a nearby municipal collection point.

b. Hazardous Waste – Medical Waste and Oily Waste

85. Medical waste is generated from the site's first aid facilities, while oily empty drums are generated from construction activities. The medical waste generated from the project site is collected at one designated location and sent to an incinerator for safe disposal. Other hazardous waste is transported to disposal sites using a vehicle. Additionally, hazardous waste such as oily drums is kept at the project site until they become completely dry. Subsequently, these dry drums are sold to third-party junk dealers.

Table 30- Solid Waste generated at sub-project sites are as under

Sr. #	Name of Sub-Project	Solid Waste generated in Kilograms/day	Types of Waste	Remarks
1	Water Resources Building WRB NCB 05	1 Kg/day	Plastic waste/polythene bags	Solid waste is preferable reused, recycled and disposed of at designated dumping site.
		10 Kg/day	Solid waste (Steel wastes, bottle, cans, cement bags)	
		2 Kg/day	Kitchen waste/organic waste	

IV. Karakh Valley Development Sub-project Mula River Basin

86. The contractor has selected a designated area for waste disposal, approximately 2 kilometers away from Karakh city. The selected area naturally has a ditch shape where waste is dumped for disposal.

a. Kitchen and General/Domestic Waste

87. Kitchen/domestic waste has been generated from all the camp sites, offices, and construction sites of the project. Dustbins are provided in offices and camp residences, which are regularly monitored and emptied by the contractor staff or a sweeper, and the waste is disposed of in a nearby area. The empty cement bags and associated items generated from construction activity have been sold to a local vendor accordingly.

b. Hazardous Waste – Medical Waste and Oily Waste

88. Medical waste is generated from the first aid facilities on the construction sites, whereas oily empty drums are generated from the construction activities of the project. The medical waste generated from all the construction sites is collected and disposed of in a designated ditch or landfill located away from the project site. Hazardous waste collected in drums is being transported to disposal sites using a vehicle. Additionally, hazardous waste like oily drums is kept at the campsite until it becomes completely dry. Subsequently, these dry drums will be sold to third-party junk dealers accordingly.

Figure 10: Waste Segregation at Camp site

Waste bins provided on Karakh Camp site

Waste bins provided on Karakh Camp site

Table 31- Solid Waste generated at sub-project sites are as under

Sr. #	Name of Sub-Project	Solid Waste generated in Kilograms/day	Types of Waste	Remarks
1	Karakh Valley Development NCB 01	4 Kg/day	Plastic, polythene bags	Solid waste is preferable reused, recycled and disposed off at designated dumping site.
		8 Kg/day	Kitchen waste/organic waste	
		10 Kg/day	Solid waste including cement bags	

V. Kharzan Hatachi Infiltration Gallery Sub-project Mula River Basin

a. Solid Waste Management:

89. Workers' actions pertaining to waste management are found to be responsible and careful. The priority has always been to reduce the waste generated; therefore, the 3Rs (reduce, reuse, and recycle) are observed as the 2nd step of effective waste management, following the 1st priority of preventing waste at the point source on the site. Most of the waste produced is biodegradable. Dust bins are provided for site use and are conveniently located. Due to the limited duty time and the low number of staff, the waste is produced in such low quantities that it can be easily transported to its designated area. This activity is done on a regular basis to ensure that the small waste does not accumulate into large amounts, making waste management and its impacts following remedial actions more expensive and time-consuming, thus diverting resources from useful work.

b. Housekeeping and Material Storage

90. Proper storage and stacking are promoted at work sites, as good housekeeping and properly stored material have the potential to reduce safety incidents by roughly 70%. For

this reason, housekeeping and material storage are done in a responsible way to protect workers from untoward safety events or any damage to the environment.

91. The following measures regarding housekeeping are taken:

- All materials, spoils, debris, etc., are cleaned up to avoid accumulation at the end of each work shift.
- Accumulation of trash and debris is prevented by proper covering with polythene sheets and water sprinkles to suppress the mud.
- Access walkways and roadways are kept clear to avoid trips and falls.
- Dustbins are placed at appropriate locations.
- Good housekeeping is maintained at the camp as well as on the working site.

c. Hazardous waste

92. Waste with the characteristics of flammability, toxicity, reactivity, and corrosivity is regarded as hazardous. At the moment, no hazardous waste is being generated. However, a designated area has been prepared for the storage of any hazardous waste. During field visits, it is ensured that hazardous waste generation will be prevented through responsible storage and handling practices. In the event that hazardous waste is generated, its storage is carefully considered, ensuring a safe distance of nearly 100m (as practically applicable) from the surface water for its handling and storage. (Photographic evidence is provided as follows).



Figure 11: Waste Segregation at camps

Table 32- Solid Waste generated at sub-project sites are as under

Sr. #	Name of Sub-Project	Solid Waste generated in Kilograms/day	Types of Waste	Remarks
1	Kharzan Hatachi Infiltration Gallery NCB 02	1 Kg/day	Plastic waste	Solid waste is preferable reused, recycled and disposed off at designated dumping site.
		5 Kg/day	Solid waste including wood ply	
		1 Kg/day	Kitchen waste	

VI. Kili Sardar Akhtar Sub-project Zhob River Basin

a. Solid Waste Management:

93. Construction of the camp is in progress, and the Contractor workers' actions pertaining to waste management are found to be responsible and careful. The priority has always been to reduce the waste generated; therefore, the 3Rs (reduce, reuse, and recycle) will be observed as the 2nd step of effective waste management, following the 1st priority of preventing waste at the point source on the site. This activity will be done on a regular basis to ensure that the small waste does not accumulate into large amounts, thus preventing management and impact issues that may lead to expensive and time-consuming remedial actions, potentially diverting resources from useful work. Waste generated on-site during camp construction is reported as Exhibit 39.

b. Housekeeping and Material Storage

94. Proper storage and stacking are promoted at work sites. Good housekeeping and properly stored materials have the potential to reduce safety incidents by roughly 70%. Due to this reason, housekeeping and material storage will be done in a responsible way to protect workers from untoward safety events or any damage to the environment.

95. The following measures regarding housekeeping will be taken:

- All materials, spoils, debris, etc. will be cleaned up to avoid accumulation at the end of each work shift.
- Accumulation of trash and debris will be prevented by proper covering with polythene sheets and water sprinkles to suppress the mud.
- Access walkways and roadways will be kept clear to avoid trips and falls.
- Dustbins will be placed at appropriate locations.
- Good housekeeping will be maintained at the camp as well as on the working site.

c. Hazardous waste

96. The waste with characteristics of flammability, toxicity, reactivity, and corrosivity is regarded as hazardous. At the moment, no hazardous waste is being generated. However,

a designated area will be selected for the storage of hazardous waste. It will be ensured that in case hazardous waste is generated, soil or water contamination is prevented through its responsible storage and handling. In the event that hazardous waste is generated, its storage will be carefully considered, ensuring a safe distance of nearly 100m (as practically applicable) from the surface water for its handling and storage.

Table 33- Solid Waste generated at sub-project sites are as under

Sr. #	Name of Sub-Project	Solid Waste generated in Kilograms/day	Types of Waste	Remarks
1	Kili Sardar Akhtar NCB 06	2 Kg/day	Plastic, Polythene bags	Solid waste is preferable reused, recycled and disposed off at designated dumping site.
		4 Kg/day	Kitchen waste/Organic waste	
		1 Kg/day	Solid Waste	

Traffic Management & Diversion Plan (TMP)

97. Pursuant to the EMP and SSEMP, all sub-project sites are located in remote areas. To ensure smooth traffic flow during the execution of construction works and in cases of partial or full closure of roads for the safety of transporters, road users, assets, and the general public, the Contractor is committed to delivering the following during the reporting period:

- Ensure that vehicular movement does not cause any adverse impacts.
- Ensure that vehicular movement does not result in disturbances for the local community residing in the vicinity of the project as far as possible.
- Ensure that site activities adhere to the guidelines of TMP and all regulatory requirements.
- Flagmen/signboards were observed near diversions.

Training's

Training Imparted by the Contractors

98. A good working relationship is being maintained between the Contractor and the Consultants' environmental staff. Training's and awareness campaigns are being conducted at the Contractor's Camp and Work Sites at regular intervals to raise awareness about worker's safety. The basic purpose of these sessions is to keep workers well informed about the different risks and hazards associated with site-specific construction activities and to make them well-prepared to respond to any kind of emergency situation. **(Annuxure VIII).**

Table 34- Training details on sub-project sites are as under

Sr. #	Name of Sub-Project	Training Details	Date
1	Siri Toi Dam ICB 01	Importance of PPE's	10-3-2023
2	Water Resources Building WRB NCB 05	Electrical safety and mandatory PPE's	11-3-2023
3	Karakh Valley Development NCB 01	Awareness regarding importance of safety during work	15-3-2023
4	Kharzan Hatachi Infiltration Gallery NCB 02	Housekeeping on site	4-3-2023
5	Kili Sardar Akhtar	Importance of PPE's	10-06-2023

99. Toolbox talks are conducted by the HSE Supervisor/Officer on a daily basis for site-specific scopes of work. Additionally, toolbox talks are also conducted when there is a change in season to make workers well aware of various infectious and viral diseases. The toolbox talk topics will be repeated periodically in response to changes in the workforce or scope of work at the site.

5 RESULTS OF ENVIRONMENTAL MONITORING

Overview of Monitoring Conducted during Current Period

100. Environmental monitoring consists of two types. The first type requires field sampling and laboratory analysis for example water quality, air quality and noise levels. The second type refers to visual inspections of such things as soil erosion, restoration of vegetation, solid waste disposal and so on. The field sampling and laboratory analysis has been conducted, including air, noise, and water quality during the current reporting period. Environment Inspector of SC undertook field inspections on fortnightly basis. Environmental Specialist of SC also inspected sub-projects on periodical basis. SC prepared Corrective Action Plans in consultation with contractors.
101. The environmental monitoring was carried out by CSC to assess actual nature and extent of key impacts and the effectiveness of mitigation and enhancement measures outlined in the Initial Environmental Examination (IEEs) and Environmental Management Plans (EMPs). The IEEs prepared for sub-projects includes Environmental management plan (EMP) that addresses the potential impacts. Mitigation measures are considered so that the projects are designed, constructed, and operated in compliance with applicable national and provincial laws and regulations and meets the requirements of ADB SPS, 2009. Contractors are provided with monitoring checklist for the better understanding of the Environment. The overall status of Environmental Compliance was monitored and presented as Annex IX.
102. In accordance with the project's EMP, the Contractors of NCB 01, NCB 02 have conducted quarterly environmental monitoring through a third-party environmental testing laboratory certified by Balochistan EPA during March and June 2023, NCB 05, and ICB-01 have conducted it during March 2023 and NCB 06. During June 2023 respectively. Sampling and analysis were conducted in the presence of the SC Environmental Specialist in March and June 2023. The testing was previously missed in the last SAEMR's due to Covid-19 situations and security reasons. Sampling and lab testing have been carried out for ambient air quality, gaseous emissions, drinking/groundwater, surface water, wastewater, and noise.
103. Environmental testing was carried out and results were compared with NEQS/PEQS, IFC/WHO standards was made to identify those parameters that exceed the stringent standard available for any parameter. For comparison and assessment purpose the stringent standard has been followed. Test results are provided in annexure IX.

104. Subproject construction activities should not lead to pollution or contamination of surface and groundwater in the sub-project area knowing that contamination bears direct effects on human health. Therefore, preventive measures are required to be taken to save water sources. Contractors are guided to take measures at camp site to prevent water pollution in the adjoining stream, water channel and in groundwater: Construction of sewage system with septic tank to dispose of sanitary wastewater and lined wash areas are the other measures contractors were asked to take to prevent pollution of water. Furthermore, contractors are asked to avoid oils spills in sub-project areas.
105. Environment staff of CSC has observed no surface or groundwater pollution caused by construction activities. Contractors tested surface and drinking water from certified labs for physical, chemical and biological parameters. No water borne disease (gastro, diarrhoea, etc.) has been noticed. Sewerage system/septic tanks at camp sites were constructed. Contractors are advised to ensure operation and maintenance of drainage system to avoid contamination of ground and surface water sources. Contractors are also advised to avoid oil spill to protect ground water and surface water channels.
106. Water quality testing was carried out at sub projects where construction activities were in progress. The results of instrumental monitoring are attached as Annexure X.

Soil Erosion.

107. No damages to the agricultural lands due to borrow pits or soil erosion is observed.

Natural Habitat Protection .

108. The contractors are advised to avoid damaging the natural habitats and to replant the damaged plants, if unavoidable, after construction. Also, the native wildlife and habitats should not be disturbed. However, no tree has been cut during construction processes on any of the sub-project. Similarly, no native species are being disturbed due to the construction activities.
109. Neither flora nor fauna were disturbed by the contractors at any of the sub-project area since the most of the sub-projects are rehabilitation /restoration project which locate farer to wildlife habitats. Wildlife sanctuary does not exist near any sub-project site. No hunting of birds and animal is reported. Continuous monitoring is being carried out by environmental inspectors of CSC to check any hunting activity or activities damaging vegetation or wildlife habitat.

Waste Management

Current Period

Currently, there are two types of waste at all sub-project areas.

- a. Domestic waste from camps, offices, labours, etc.
- b. Construction waste including hazardous waste from construction sites

Cumulative Waste Generation

110. The waste generated from the cutting of earth is reused for back filling. The unused excavated material is disposed of at designated sites. Negligible construction waste including wire cutters, plastic and paper, etc. is generated at the site which can be recycled and reused in second market. Currently, all such waste is segregated disposed of temporarily on designated sites, identified and demarked before construction. Such waste is then removed to be reused in second market on regular interval with the help of specified subcontractors, assigned by each contractor.
111. For all sub-project sites, the Contractors have provided waste collection bins at various locations to ensure proper waste management. Organic waste is collected at the same point to avoid its dispersal in the camp area. To maintain cleanliness and proper waste disposal, the Contractor's housekeeping staff is mobilized for the removal of solid waste. Currently, all wastes are segregated and disposed of in designated sites that were identified and demarked before construction began. The waste is then removed and sent to specified subcontractors assigned by each contractor for reuse in the second market.
112. Sewage waste from the construction camp of slri Toi dam is being disposed of by the development of on-site sanitation systems i.e., septic tank prior to discharge to nearby depression area/drain. Septic tanks are located adjacent to the construction camp. Similarly , septic tanks are present along camps of other subproject sites.
113. This process is carried out on a regular interval to ensure effective waste management and environmental sustainability.



Health and Safety

Community Health and Safety

114. During the reporting period, the Contractor took a number of initiatives towards community health and safety.

a. Siri Toi Dam Sub-project ICB 01

115. The contractor's environmental specialist is assisted by the consultant team in providing adequate training to staff for community health and safety. Signboards at designated spots and curves, as well as at the campsite, are installed at various locations to control vehicle speed limits. The campsite is barricaded and constantly monitored to ensure that local residents and domestic animals/livestock (cows, goats, sheep, and dogs)

stay away from the construction area. Moreover, no incidents related to community health and safety have occurred or been reported.

116. The project site is cordoned-off, especially the areas where machinery is involved, with barricades and constant monitoring to ensure that local residents, particularly children, stay away from the construction area. Additionally, no machinery is being left unattended, especially in running condition. Drivers are provided orientation on safe driving practices to minimize accidents and prevent the spillage of hazardous materials. Daily Tool Box Talk (TBT) is conducted by the HSE Supervisor in the morning before starting any activity on the site. The HSE Officer uses daily, weekly, and monthly environmental monitoring checklists to assess various environmental parameters, enabling the Environmental staff to take corrective action for any non-conformances observed (Annexure I,II).

b. Karakh Valley Development Sub-project NCB 01

117. The unpaved service roads used by the Contractor's vehicles are regularly sprinkled to suppress dust and protect general commuters from the related impact and diseases. To avoid noise disturbance at night, no construction activities are carried out during nighttime.

c. Water Resources Building NCB 05

118. During the reporting period, the Contractor took utmost care for community health and safety. There have been no massive traffic activities initiated during this duration of the project. Only material supply vehicles are being used at the site for shifting materials. The project site is located near office buildings, and no heavy machinery is involved. No incidents related to community health and safety have occurred during the current reporting period (Annexure VIII).

d. Kharzan Hatachi Infiltration Gallery Sub-project NCB 02

119. No incidents related to community health and safety have occurred or been reported yet.

Worker Safety and Health

e. Siri Toi Dam Sub-project ICB 01

120. The provision of an adequate First Aid kit, a medical room, an ambulance, and a medical technician have been ensured during site visits. Construction activities in the camp have minor impacts on the safety and health of workers. Prior to starting the project, engineering and administrative control measures are taken by the contractor. For example, the provision of Personal Protective Equipment (PPE) to the workforce is being ensured on-site. Other safety measures to avoid exposure to accidents due to construction operations, vehicle movements, and machinery operations are also being ensured.

Additionally, the contractor has 4WD vehicles to deal with any kind of emergency (see Annexure VIII, Section 5). No significant incidents related to the workers' health and safety have occurred during the current reporting period.

f. Water Resources Building NCB 05

121. First aid medical facilities are being provided by the contractor at the site. Proper supervision and monitoring of excavation and compaction activities during the construction phase are carried out in compliance with the Health and Safety requirements as per standard specifications outlined in the EMP and in the Contract. No incidents related to the workers' health and safety have occurred during the current reporting period. (Annexure VIII, Section 2).

g. Karakh Valley Development Sub-project NCB 01

122. For the construction workers, the Contractor has conducted trainings on safety issues with practical demonstrations of responses in case of any emergency. Before starting the work, toolbox talks focusing on HSE related issues were regularly held. The availability of First Aid Boxes is being ensured to provide emergency medical assistance in case of any incidents. The Contractor has also ensured the supply of clean drinking water to the workers, both at the camp and at the sites. The Contractor's camp is equipped with all basic necessities, including accommodation, dining halls, sanitation facilities, etc. (Annexure VIII, Section 3). No incidents related to the workers' health and safety have occurred or been reported yet.

h. Kharzan Hatachi Infiltration Gallery Sub-project NCB 02

123. First aid kits are provided by the contractor at the campsite, and this provision is being ensured. The contractor also ensures the provision of Personal Protective Equipment (PPE) to the workforce on site. Additionally, other safety measures to avoid exposure to accidents due to construction, vehicle movements, and machinery operations are also ensured. The contractor has provided 4WD vehicles to deal with any kind of emergency (Annexure VIII, Section 4). No incidents related to the workers' health and safety have occurred or been reported yet.

Corrective Action Plans (CAPs):

124. During the reporting period, the Environment Specialist of PIC/SC conducted regular visits and monitored the project for the implementation of the Environmental Management Plan (EMP). As a result of these visits, Corrective Action Plans (CAPs) have been prepared for EMP non-compliance in various sub-projects, including Siri Toi Dam, Karakh

valley development, Water Resources Building, and Kharzan Hatachi. The details of these CAPs are provided in the exhibits below.

Table 35- Siri Toi Dam sub-project Corrective Action Plan (Issues Resolved)

Sr. No	Date	Raised By	Location	Issues	Category*	Corrective Action	Responsibility	Original Target Date	Updated Status Closed/open
1	January-June 2023	CSC	Siri Toi Dam Sub-project	SSEMP approval	Major	SSEMP approved by ADB	Contractor	9 th December 2022	Closed
2				Scarcity of safety signs	Moderate	Proper safety signs should be installed by the Contractor near diversions and slopes	Contractor	31 st December 2022	Closed
3				Water Sprinkling	Moderate	Water sprinkling on sites and within camp is greatly required	Contractor	Regularly	Closed
4				Weekly Environmental Report/Checklist	Moderate	Weekly Environmental Report/Checklist submission is maintained properly	Contractor HSE Supervisor	31 st December 2022	Open
5				Use of PPE's especially safety boots ensured	Major	Contractor should ensure use of PEE's especially safety boots to labors	Contractor HSE Supervisor	31 st December 2022	Closed
6				Medical Health Facility available/First Aid Kits/ fire extinguishers	Major	First Aid kits were not available on sites	Contractor HSE Supervisor	31 st December 2022	Closed
7				Arrangement of waste disposal and management.	Major	Routinely	Contractor	31 st December 2022	Closed

*Pictorial Evidences for closed issues are mentioned as annexure VIII

Table 36- Siri Toi Dam sub-project Corrective Action Plan (CAP) Carry forward issues

Sr. No	Date	Raised By	Date of Issues Raised	Issues	Category*	Corrective Action	Responsibility	Original Target Date	Updated Status Closed/open
1	January-June 2023	CSC	15 th June 2022	HSE advisor has not been hired	Major	Environmentalist/HSE advisor has been hired for monitoring Environmental Compliance	Contractor	31 st July 2023	Open
2			15 th June 2022	No Barricading of construction site	Major	Site should be barricaded especially at camp site, borrow areas and areas where construction activities are being	Contractor	31 st December 2022	Open
3			15 th June 2022	Weekly Environmental Report/Checklist	Moderate	Weekly Environmental Report/Checklist submission is maintained properly	Contractor HSE Supervisor	31 st December 2022	Open
4			15 th June 2022	Establishment of concrete base under generator	Major	Concrete base under generator should be established on first priority	Contractor	25 April 2023	Open
5			10 th March 2023	Vehicles washing area not concrete	Moderate	Concrete base is required for vehicle washing area	Contractor	30 April	Open
6			30 th June 2023	Submission of SAEMR to Consultant office	Major	Semi annual environmental monitoring report submission	Contractor Environmental Specialist	10 th July 2023	Open

Table 37- Karakh Valley Development Subproject Corrective Action Plan (Issues Resolved)

Sr. No	Date	Raised By	Issues	Category	Corrective Action	Responsibility	Original Target Date	Updated Status Closed/open
1	Jan-June 2023	CSC	Use of PPE's including Helmets, gloves, safety vests not being ensured	Major	Implementation of health and safety measures shall be enforced and wearing of PPE be ensured during construction activities. Wearing of safety boots by all workers should be ensured. Number of safety jackets should be increased /maximize and provide to all workers.	Contractor	30 th November 2021	Closed
3			Fire Safety Equipment is available in camp.	Major	Fire Safety Equipment especially Fire Extinguishers should be available in Contractor camp and construction site.	Contractor	30 th March 2023	Closed
3			Improper Toilet facilities with unhygienic condition.	Moderate	Washrooms should be with sufficient facilities and hygienic condition	Contractor	30 th November 2021	Closed
4			Monthly HSE Progress Report are not being submitted that is required as per contract documents	Major	Monthly HSE reports should be submitted on regular basis	Contractor	After approved SSEMP	Closed

5			Daily/weekly Environmental checklists are not being filled.	Moderate	Daily/weekly Environmental checklist should be filled on regular basis	Contractor	30 th November 2021	Closed
6			Arrangement of waste disposal and management.	Major	Routinely	Contractor	30 th November 2021	Closed
7			SSEMP is not approved	Major	Contractor shared revised SSEMP with client office for ADB approval.	Contractor	30 th December 2022	Closed

*Pictoral Evidences for closed issues are mentioned as Annexure VIII.

Table 38- Karakh Valley Development Subproject Corrective Action Plan (Carry forward issues)

Sr. No	Date	Raised By	Date of Issue Raised	Issues	Category	Corrective Action	Responsibility	Target Date	Updated Status Closed/open
1	Jan-June 2023	CSC	15 March 2023	Medical health facility at camp site	Major	Ambulance availability on site in case of any emergency at contractor camp and at construction site	Contractor	20 th March 2023	Still awaited/open
2			22 Dec 2021	Scarcity of Safety signs	Moderate	Proper safety signs should be installed by the contractor	Contractor	31 st July 2023	Still awaited/open
3			22 Dec 2021	No Barricading of construction site	Major	Sites should be barricaded especially at borrow areas and areas where	Contractor	31 st July 2023	Still awaited/open

Table 39- Water Resources Building sub project -Corrective Action Plan CAP (Issues Resolved)

	Date	Raised By	Issues	Category*	Corrective Action	Responsibility	Original Target Date	Updated Status Closed/open
1	July-December 2022	CSC	SSEMP is submitted	Major	SSEMP is conditionally approved	Contractor	27 th February 2022	Closed
2			Unhygienic Toilet condition	Moderate	Washrooms should be with sufficient facilities and hygienic condition	Contractor	15 th March 2022	Closed
4			Weekly Environmental Report/Checklist submitted	Moderate	Weekly Environmental Report/Checklist submission is maintained properly	Contractor	Timely submitted	Closed

Table 40- Water Resources Building sub project -Corrective Action Plan CAP (Carry forward Issues)

	Date	Raised By	Date of Issue Raised	Location	Issues	Category*	Corrective Action	Responsibility	Original Target Date	Updated Status Closed/open
1	Jan-June 2023	CSC	31st March 2023	Water Resources Building, Quetta	Scarcity of Safety signs	Moderate	Proper safety signs should be installed by the contractor	Contractor	15 th April 2023	Still awaited/open
2			31st March 2023		Use of PPE's especially safety boots ensured	Major	Contractor should ensure use of PEE's especially safety boots by labor	Contractor	15 th April 2023	Open
3			20 th Feb 2023		Presence of register at construction site	Moderate	Maintenance of register to record patients number treated through first aid facility	Contractor Medical officer	15 th March 2022	Open
4			10 June 2023		Elevator Shaft not barricaded properly	Major	Elevator Shaft should be barricaded properly	Contractor	15 June 2023	Open
5			10 June 2023		Side railing not installed at WR Building	Moderate	Side railing of Staircase should be installed at the earliest	Contractor	17 June 2023	Open
6			10 June 2023		Poor Housekeeping at WRB site	Moderate	Good housekeeping should be maintained on the working site.	Contractor	20 June 2023	Open

Table 41- Kharzan Hatachi Infiltration Gallery sub-project Corrective Action Plan (Issues Resolved)

Sr. No	Date	Raised By	Location	Issues	Category*	Corrective Action	Responsibility	Original Target Date	Updated Status Closed/open
1	Jan-June 2023	CSC	Kharzan Hatachi Infiltration Gallery Subproject	Water Sprinkling	Moderate	Water sprinkling on construction sites and within camp is greatly required	Contractor	Regularly/ Continuous process	Closed
2				Weekly Environmental Report/Checklist	Moderate	Weekly Environmental Report/Checklist submission is maintained properly	Contractor HSE Supervisor	31 st December 2022	Closed
3				Use of PPE's especially safety boots ensured	Major	Contractor should ensure use of PPE's especially safety boots by working labors	Contractor HSE Supervisor	31 st December 2022	Closed
4				Medical Health Facility available/First Aid Kits/ fire extinguishers	Major	First Aid kits were not available on sites	Contractor HSE Supervisor	31 st December 2022	Closed
5				Environmental/HSE advisor has been hired	Major	Environmental/HSE advisor has been hired for monitoring Environmental Compliance	Contractor	31 st July 2022	Closed
6				Arrangement of waste disposal and management.	Major	Routinely	Contractor	31 st December 2022	Closed

Table 42- Kharzan Hatachi Infiltration Gallery sub-project Corrective Action Plan (Carry forward Issues)

Sr. No	Date	Raised By	Date of Issue Raised	Location	Issues	Category*	Corrective Action	Responsibility	Target Date	Updated Status Closed/open
1	Jan-June 2023	CSC		Kharzan Hatachi Infiltration Gallery Subproject	SSEMP is submitted	Major	SSEMP submitted for ADB review	Contractor	16 th May 2022	Closed
2			22 Dec 2022		Scarcity of safety signs	Moderate	Proper safety signs should be installed by the Contractor	Contractor	25 th March 2023	Open
3			22 Dec 2022		No Barricading of construction site	Major	Site should be barricaded especially at borrow areas and areas where construction	Contractor	25 th March 2023	Still awaited/open

Table 43- Kili Sardar Akhtar sub-project NCB 06 Corrective Action Plan (Carry forward Issues)

Sr. No	Date	Raised By	Date of Issue Raised	Location	Issues	Category*	Corrective Action	Responsibility	Original Target Date	Updated Status Closed/open
1	Jan-June 2023	CSC		Zhub	SSEMP is submitted	Major	SSEMP submitted for ADB review	Contractor	6 th June 2023	Open
2			11 th March 2023		Scarcity of safety signs	Moderate	Proper safety signs should be installed by the Contractor	Contractor	30 th June 2023	Open
3			-do-		Water Sprinkling	Moderate	Water sprinkling on sites and within camp is greatly required	Contractor	Regularly	Open
4			-do-		No Barricading of construction site	Major	Site should be barricaded especially at borrow areas and areas where construction activities are being carried on	Contractor	30 th June 2023	Still awaited/open
5			-do-		Weekly Environmental Report/Checklist	Moderate	Weekly Environmental Report/Checklist submission is maintained properly	Contractor HSE Supervisor	30 th June 2023	Open
6			-do-		Use of PPE's especially safety boots ensured	Major	Contractor should ensure use of PPE's especially safety boots to site working labors	Contractor HSE Supervisor	30 th June 2023	Closed
7			-do-		Medical Health Facility available/First Aid Kits/ fire extinguishers	Major	First Aid kits must be available on sites	Contractor HSE Supervisor	30 th June 2023	Open
8			-do-		Environmental/HSE advisor has been hired	Major	Environmental/HSE advisor has been hired for monitoring Environmental Compliance	Contractor	30 th June 2023	Open
9			-do-		Arrangement of waste disposal and its management.	Major	Routinely	Contractor	30 th June 2023	Still awaited/open

6 GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

Good Practice

The good practices are mentioned as:

Siri Toi Dam Sub-project

- Establishment of the Contractor's camp has been done according to the permissible standards and parameters provided in SSEMP.
- Satisfactory installation of signboards is done at various locations in the campsite and construction site.
- Signboards are also installed on road diversions at various locations on unpaved roads.
- The officers' mess has been established with good housekeeping of the offices.
- A medical room is set up for first aid and emergency response, and an ambulance is available at the campsite.
- The dispensary is equipped with the required medicines, equipment, furniture, and a First Aid kit, all labeled, and is operational under the supervision of a qualified male nurse/Dispenser.
- Medicines are being provided in the First Aid Kit at the site.
- A mosque and a material testing laboratory is available in the camp, located close to the main entrance of the camp.
- The use of PPE's/safety boots, jackets, and safety helmets by workers has been noticed as a good practice.
- A grievances register is placed at the campsite, and signboards are installed at the main entrance to guide where to record grievances.

Karakh Valley Development Sub-project

- The establishment of the Contractor's camp is in compliance with the permissible standards and parameters.
- The presence of an HSE officer on-site is ensured.
- The contractor's HSE officer properly maintains daily Toolbox Talks (TBT) with workers before starting any working activity.
- Cutting of trees for firewood is avoided as LPG is used instead of fuel wood.
- A complaint register is placed at the project site, and no complaint/conflict has been observed.

- A good liaison is established between PMO, Supervisory consultant, and contractor to ensure adherence to environmental safeguard guidelines.
- Monthly and weekly environmental monitoring checklists are timely submitted to the Supervision Consultant in the monthly Environmental Monitoring Report (Annexure I-VI).
- The use of PPE's by workers was noticed as a good practice.

Water Resources Building

- The Contractor has displayed temporary precautionary signboards and warning tapes inside the construction site, around material storage, and cement bags.
- Frequent water sprinkling is observed to prevent dust pollution.
- Clean drinking water is provided to workers and staff.
- Monthly and weekly environmental monitoring checklists are timely submitted in the monthly EMR report (Annexure III-VI).
- A good liaison is established between the PMO, Supervisory consultant, and contractor to ensure adherence to environmental safeguard guidelines.

Kharzan Hatachi Infiltration Gallery

- Clean drinking water is provided to workers and staff.
- The Environmental Specialist and HSE Officer are available on-site during working hours.
- Daily correspondence with the supervision consultant is conducted to discuss day-to-day improvements and activities.
- The construction machineries are parked in designated locations.
- Monthly training and Toolbox Talks are being held and reported in the SAEMR.

Awareness

125. Before allowing any worker, regardless of their role or experience level, to enter a construction site, they must be fully aware of the potential hazards. Uninformed or ignorant workers can pose significant risks at a construction site, as their lack of knowledge can lead to mistakes that put everyone else in danger. It is crucial for all workers to understand the potential dangers and maintain a constant state of alertness to prevent accidents. To promote awareness and risk prevention, an awareness campaign and risk assessment are conducted before the start of each new activity for the staff. Daily Tool Box Talks (TBT) are also conducted by the HSE Supervisor in the morning before any activity begins on the site. Additionally, safety posters indicating various construction hazards are displayed at the site.

Opportunities for Improvement

126. Overall, the quality of work and the environment at the site is satisfactory. However, there are areas that require improvement:

- All concerned staff has been instructed to improve OHS performance levels, including mandatory use of PPE's by all site workers and adherence to working hours.
- Training sessions must be conducted more frequently.
- The quarterly environmental monitoring timeline should be strictly followed.
- The trucks carrying construction material should be covered with tarpaulin sheets to avoid dust pollution.
- Safety signboards, safety cones, fluorescent tape, and speed limit boards should be used at the junction point of the village and campsite road.
- Washrooms should have sufficient facilities and maintain hygienic conditions.
- The generator should be placed away from the fuel pump and restrooms of workers and staff.
- Construction sites should be appropriately barricaded.
- Avoid contamination of the camp soil by oil leakage from machinery.
- Material transportation should be done during daylight hours to avoid any safety issues.
- Entrance of the public within the project vicinity must be prohibited, and increased vigilance is needed.
- The Contractor's Environment Specialist should continue to provide both off and on-site HSE training to the Contractor's top/middle management and workers for capacity building and providing necessary awareness on how to deal with HSE issues that arise on a day-to-day basis.
- The Environment Specialist should be present at the site throughout the construction period.

7 SUMMARY AND RECOMMENDATIONS

Summary

127. The overall Health Safety & Environment (HSE) implementation is satisfactory due to continuous efforts by the supervisory staff at the site, as the Contractor was pressed hard to follow the HSE guidelines in true letter and spirit. There are no major adverse impacts on surface water quality due to minor construction activities on the irrigation channels.
128. The impact of dust is reduced by regular water sprinkling. The use of PPE's is satisfactory during construction. The Supervisory Consultant visits construction sites on a regular basis and provides the needed feedback to the supervisory staff at the site. The overall working environment at the Project Area has been safe, as no major incidents/accidents or casualties were reported.
129. The Contractor's Environmental Specialist is assisting in providing daily trainings to the workers for the implementation of EMP/SSEMP.
130. Proper safety signs should be installed by the Contractor near diversions and slopes
131. Site should be barricaded especially at camp site, borrow areas and areas where construction activities are being
132. Concrete base under generator and vehicle washing area should be established on first priority
133. The objective of external monitoring is to review and assess the implementation of EMP/SSEMP on the project site. The external monitor carried out site visit in May, 2023 on Siri Toi Dam Project. During visit, external monitor visited camp site, construction sites, borrow areas and sites for waste management. Non-compliance and observations were recorded which are presented in the CAP of this report.

Recommendations

134. All the sub-projects should implement the following recommendations
- The contract clause regarding health, safety, and environmental issues should be strictly followed.
 - Strict compliance with SSEMP/EMP at the project site is enforced.
 - Trainings should be conducted with a photographic record and documentation in future report,

- The use of PPE's during masonry work and while working at height should be strictly enforced.
- The presence of a trained medical person and the contractor's environmental officer should be ensured during working hours.
- Stacking of construction materials at the site should be done according to EMP/SSEMP guidelines.
- Reflect all major findings and recommendations of this report in the next SAEMR.
- Warning signboards, diversion boards, and warning tapes should be mandatory at the construction sites.
- On-site sanitation at subproject sites utilizes septic tanks for sewage waste disposal, positioned near construction camps before discharging into nearby drainage areas.
- Timely submission of quarterly monitoring reports to the supervision consultant must be ensured, and there should be no delay in submission before June and December.
- Flagmen must be present near the construction site to avoid any accidents.

ANNEXURES

Annexure I: Completion Letter of Ahmedzai Sub-Project (NCB 08)**BWRDSP CONSULTANTS**

For Project Design, Construction Supervision
and Implementation Support for Balochistan
Water Resources Development Sector Project

60185-B, Near Allied Bank, Jinnah Town,
Quetta, Pakistan
Ph: +92 (011) 2903884
Email: bwrdspp@gmail.com
www.bwrdspp.com.pk

Ref: 407B/081/HAB/01/NCB-08/929

Dated: January 27, 2023

M/s NOOR UL HAQ & BROTHERS,
Plot B-C, 21th Commercial Lane,
DHA Phase-2 Extension,
Karachi.

BALUCHISTAN WATER RESOURCES DEVELOPMENT SECTOR PROJECT
Construction of Ahmedzai (PIS & FIS) Subproject (NCB-08), Zhob River Basin
SUBSTANTIAL COMPLETION OF WORKS

Reference: Your Letter No. NB/KH/5184 dated 28-11-2022.

Dear Sir,

Having received your notice under GCOC Clause 69, we hereby certify that the Works have been substantially completed in accordance with the Contract on December 21, 2022, except those listed in the attached punch list and which shall not substantially affect the use of the Works for their intended purpose. It is notified that Defect Liability Period of the Contract starts with effect from December 22, 2022.

The contractor will complete the remaining works as mentioned in the attached punch list and will rectify any notified defects within the Defect Liability Period pursuant to GCOC Clause 43.





Yours faithfully,
for and on the behalf of BWRDSP Consultants


(HABIBULLAH BHUTTO)
Project Manager

Encl: As stated above

CC:

1. Project Director-BWRDSP, Jinnah Town, Quetta.
2. Contract Engineer, BWRDSP Consultants, Jinnah Town, Quetta.
3. Resident Engineer (Measurement), BWRDSP Consultants, Jinnah Town, Quetta.
4. Resident Engineer-ZRB, BWRDSP Consultants, Zhob.
5. Office Engineer, BWRDSP Consultants, Jinnah Town, Quetta.
6. Project File.

For Sale of
 National Engineering Services Pakistan (Pvt) Limited (Lead Partner)
 Rehman Hekki Consultants (Pvt) Limited (JV Partner)
 Engineering General Consultants (Pvt) Limited (JV Partner)
 Asian Advisory Services (Pvt) Limited

Annexure II: Non Compliance Notices to Sub-Project (ICB 01)**BWRDSP CONSULTANTS**

For Project Design, Construction Supervision
and Implementation Support for Balochistan
Water Resources Development Sector Project

39/126-B, Near Allied Bank, Jinnah Town,
Quetta, Pakistan
P: +92 (81) 2663694
Email: bwrdsn@gmail.com

Ref: 4078/061/HAB/01/NCB-01/1225-A

Dated: June 17, 2023

M/s ZKB-ACC (Joint Venture)
14-C, Model Town Extension, Khojak Road,
Quetta.

BALUCHISTAN WATER RESOURCES DEVELOPMENT SECTOR PROJECT
CONSTRUCTION OF KARKH VALLEY DEVELOPMENT SUBPROJECT - MRB (NCB-01)
HEALTH AND SAFETY REQUIREMENTS AT SITE

Dear Sir,

Pursuant to Sub-Clause 24 of the Particular Conditions of Contract and based on the subject mentioned above, it is stated that several non-compliances were noted at the project site during the visit of the Consultants' Environmental Specialist on 15th March 2023. Additionally, during the ADB Mission on 9th May 2023, the compliance status of NCB-01's Environmental Management Plan (EMP) was discussed at the PD-PWRDSP Office with the Consultants and your staff. Now, ADB has issued a draft Aide Memoire of the mission on 12th June 2023, which outlines the next steps and recommendations to be prioritized. Therefore, you are required to promptly address the non-compliances mentioned in the table below by taking the following corrective actions.

Sr. No.	Non-Compliance	Corrective Actions
1.	Use of PPE's including Helmets, gloves, safety vests not being ensured	• Application of health and safety measures shall be enforced and wearing of PPE be ensured during construction activities. Wearing of safety boots by all workers should be ensured. Number of safety jackets should be increased /maximize and provide to all workers.
2.	No Fire Safety Equipment available in camp and at sit	• Fire Safety Equipment especially Fire Extinguishers should be available in Contractor camp and construction site
3.	No Medical Health Facility available at contractor camp and at site	• First Aid kits should be available on sites and emergency first aid trainings should be conducted. • Conduct regular inspections to ensure cleanliness and address any maintenance issues promptly.
4.	Improper Toilet facilities with unhygienic condition.	• Washrooms should be with sufficient facilities and hygienic condition
5.	Scarcity of Safety signs	• Proper safety signs should be installed by the contractor
6.	No Barricading of construction site.	• Sites should be barricaded especially at borrow areas and areas where construction activities are being carried on
7.	Monthly HSE Progress Report are not being submitted that is required as per contract documents	• Monthly HSE reports should be submitted on regular basis
8.	Daily/weekly Environmental checklists are not being filed.	• Daily/weekly Environmental checklist should be filed on regular basis

National Engineering Services Pakistan (Pvt) Limited Lahore (Lead Partner)
 Rehman Habi Consultants (Pvt) Limited (JV Partner)
 Engineering General Consultants EGC (Pvt) Limited (JV Partner)
 Asian Advisory Services (Pvt) Limited

**BWRDSP CONSULTANTS**

For Project Design, Construction Supervision
and Implementation Support for Balochistan
Water Resources Development Sector Project

60188-B, Near Allied Bank, Jinnah Town,
Quetta, Pakistan
Ph: +92 (81) 2853894
Email: bwrdsz@gmail.com

Sr. No.	Non-Compliance	Corrective Actions
9.	Arrangement of waste disposal and management.	<ul style="list-style-type: none"> Establish a proper waste collection schedule and ensure that waste is stored securely in designated storage areas. Use appropriate containers or bins to prevent leakage, spills, or environmental contamination. Properly dispose of the waste at the designated location.
10.	Health & Safety awareness training are not being conducted	<ul style="list-style-type: none"> Conduct Health & Safety awareness training as stated in approved SSEMP (Point No.2.9) and maintain their record
11.	Traffic Management Plan is not available	<ul style="list-style-type: none"> Prepare Traffic Management Plan specific to site conditions and share

Furthermore, you are required to conduct Environmental Instrumental Monitoring Testing of Quarter April-June 2023 before 30 June 2023.

You are required to fulfill all of your contractual obligation mentioned above. Please prioritize above corrective actions and ensure their timely implementation to mitigate risks and promote a safe working environment. If you need any assistance in implementing these corrective actions, please Contact Sibghat ulah Khan –Environment Specialist (0331-9017601) of BWRDSP. Thank you for your cooperation in rectifying these non-compliance issues promptly.

Yours faithfully,
for and on the behalf of BWRDSP Consultants

(HABIBULLAH BHUTTO)

Team Leader / Project Manager

CC:

1. Project Director-BWRDSP, Jinnah Town Quetta.
2. Contract Engineer, BWRDSP Consultants, Jinnah Town, Quetta.
3. Resident Engineer (Measurement), BWRDSP Consultants, Jinnah Town, Quetta.
4. Resident Engineer MRB, BWRDSP Consultants, Khuzdar.
5. Office Engineer, BWRDSP Consultants, Jinnah Town, Quetta
6. Project File.

Ref: 4078/062/HAB/02/NCB-02/125-A

N National Engineering Services Pakistan (Pvt) Limited Lahore (Lead Partner)
RHC Rehman Habib Consultants (Pvt) Limited (JV Partner)
G Engineering General Consultants EGC (Pvt) Limited (JV Partner)
AS Asian Advisory Services (Pvt) Limited

Annexure III: Weekly Monitoring Checklist BWR Building (NCB 05) Sub-Project



NCB-05 Water Resources Building at Quetta

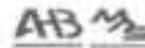


Annexure-I

Weekly Monitoring Checklist



NCB-05 Construction of Water Resources Building at Quetta



Project Name: Construction of BWR Quetta

Package #: NCB-05

Monitoring Location: Camp and Project Site

Date: 01/06/2023

Weekly Monitoring Check List

Description	Status	Comments
A- Physical Condition		
1- Soil Conditions		
Is any soil erosion observed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Has the movement of Cased pillar equipment been observed in work areas to avoid unnecessary disturbance to the soil layer?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Have the areas along the access road been closely monitored and areas affected if soil erosion?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
2- Fuel / Lubricants		
Is regular inspection carried to check leaks & spills?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Is there any combustible or flammable material in the fuel storage area?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Are the tanks and jerry cans in a safe manner, ensuring no leakage & spillage?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Have the entries of any fuel storage areas provided with explosion flow underneath to prevent soil contamination from leaks or spills?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are the spillers or fuel and used oil spill-up material being disposed of properly?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are the spills and soil thoroughly cleaned?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
3- Waste Material		
Is waste being stored temporarily on camp & site within the designated area?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Is any type of solid waste is being disposed of in the form?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Do the vehicles carry adequate container / trash bags for litter garbage and are they emptied at the camp site or other designated location regularly?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
4- Traffic Management		
Are the existing tracks being used to access the project area?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are the number of routes lead to a minimum?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are alternative used?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Are all the vehicles and construction machinery properly maintained and tuned to maintain 100% level?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are pressure horns being used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5- Borrow Areas		



NCB-05 Construction of Water Resources Building at Quetta



5- Borrow Areas	
Is necessary approval for the borrow areas been obtained from the Engineer?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the top soil of the borrow pits removed and conserved for rehabilitation of borrow areas?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is the condition of approval for excavation of the borrow pits are being complied with?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the drainage profile of the area is maintained to avoid any impoundment of the agriculture runoff or storm water in the borrow areas?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6- Camp Site	
Are the generator in the construction camp properly maintained?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the emergency response plan available in the camp	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Additional Comments (if any):

Contractor Environmentalist: *EAP* PIC Environmentalist: *hs*

**Annexure IV: Monthly Monitoring Check List Water Resources Building Sub-
Project (NCB 05)**

NCB-05 Water Resources Building at Quetta



Annexure-II

Monthly Monitoring Checklist



NCB-05 Water Resources Building at Quetta

**Monthly Monitoring Checklist**

Name of the Project: Construction of Water Resources Building						
Environmental Compliance Checklist						
Sr. No	Description	Week				Monthly Avg
		1	2	3	4	June 2023
Major Adverse Impacts (weightage 8-3)						
1	Copy of the site specific EMP is provided at the camp site/contractors office?	2	2	2	3	2.25
2	The EMP instructions are understood?	3	3	3	3	3
3	An individual is nominated for implementation of EMP?	2	3	3	3	2.75
4	Camp Management, Health & Hygiene/ Heating, Cooling, Lighting and Housekeeping	2	3	2	3	2.5
5	Assembly Point is demarcated, alarming system	1	2	2	2	1.75
6	Workforce use PPE at site?	2	2	3	3	2.5
7	Contractor provided PPE to their workforce?	2	2	3	3	2.5
8	Potable water is available to labor?	3	3	3	3	3
9	Medical Facilities, First Aid Kit is provided at camp and individual nominated for addressing emergency?	1	2	3	3	2.25
10	Contractor maintained Environmental Monitoring Record and submits monthly monitoring reports?	2	3	3	3	2.75
11	Contractor maintained Grievances Log and registered the complaints from community?	1	1	2	2	1.5
12	Contractors prohibited child labor and forced labor?	3	3	3	3	3
13	Borrow area is leased and the landowner is compensated as per a lease agreement?	2	2	2	3	2.25
14	Septic Tank and Soak Pits are designed for treatment of effluents?	0	0	0	0	0
15	No complaint filed regarding transmission of communicable diseases	3	3	3	3	3
Moderate Adverse Impacts (weightage 6-2)						
16	Provision of necessary welfare and hygiene requirements for the prevention of epidemic	1	1	2	2	1.5
17	Availability of an updated emergency vehicle (Ambulance)	1	2	2	2	1.75
18	Site selected for camp is 500 m from the human settlements and wildlife habitats?	2	2	2	2	2
19	No wood cutting for fuel?	2	2	2	2	2
20	LPG cylinders are provided for cooking or heating purposes?	2	2	2	2	2
21	Arrangement for proper storage and disposal for solid waste is planned?	1	2	2	2	1.75



NCB-05 Water Resources Building at Quetta



NCB-05 Water Resources Building at Quetta



Name of the Project: Construction of Water Resources Building						
Environmental Compliance Checklist						
Sr. No	Description	Week				Monthly Avg June 2023
		1	2	3	4	
22	Safety signs are properly displayed?	1	1	1	2	1.25
23	Contractor provided training to workers to effectively implement project specific EMP?	1	1	1	1	1
24	Contractor followed HSE plan and Emergency Response Procedures	2	2	2	2	2
25	Contractor properly disposes debris materials in approved barren land/ TMA facilities preferably recycling reuse process?	1	2	2	2	1.75
26	Natural areas with high elevation are normally selected as borrow areas?	2	2	2	2	2
27	Minimum damage to the agriculture land due to borrow pits on agriculture land?	2	2	2	2	2
28	Top 300 mm are stripped and stockpiled for reusing?	1	2	3	3	1.75
29	Stockpiling of Material, Construction Material Management	1	2	2	2	1.75
30	Waste being stored temporarily on camp & site only within the designated area	1	2	2	2	1.75
31	Fuel/oil storage areas are away from watercourse?	2	2	2	2	2
32	Fuel/oil storage areas are paved & ventilated	2	2	2	2	2
33	Fire Extinguisher is placed near Fuel Storage area	1	1	1	1	1
34	No vegetation cover exists from that required as part of construction and inside the RoW removed?	2	2	2	2	2
35	Tree cutting restricted to RoW and shoulder areas only?	2	2	2	2	2
36	No damage reported to public services like electric, water, gas, sewer or telephone lines?	2	2	2	2	2
37	Soil/Plant Material is taken from existing approved plants?	2	2	2	2	2
38	Soil/Plant properly managed, no complaints	0	0	0	0	0
39	Maintenance of Roads, Hospitals, Buildings, Sewage facilities, Electric and water supply system	0	1	1	1	0.75
40	Project activities are displayed at proper locations	1	1	1	1	1
Minor Adverse Impacts & Good Practice (weightage 0-1)						
41	No complaints were made due to noise and vibration?	1	1	1	1	1
42	Contractor conduct Information, Education and Communication (IEC) campaigns	0.25	0.25	0.5	0.5	0.375
43	Labor Sourcing at the time of initiation	0.5	0.5	0.75	0.75	0.625
44	Fire Extinguisher are placed and checked properly	0.25	0.25	0.5	0.5	0.375
45	Contractors hiring of local labor?	1	1	1	1	1
46	Project site is fenced to prevent trespassing?	1	1	1	1	1



NCB-05 Water Resources Building at Quetta



NCB-05 Water Resources Building at Quetta



Name of the Project: Construction of Water Resources Building						
Environmental Compliance Checklist						
Sr. No	Description	Week				Monthly Avg
		1	2	3	4	June 2023
47	Generator in the construction camp properly maintained	0.5	0.5	0.5	0.5	0.5
48	Community consultation has been carried out for project activities/concerns?	0.25	0.25	0.5	0.5	0.375
49	Adequate barriers are provided around areas where hazards may exist	1	1	1	1	1
50	Spilled oil or fuel and used clean up material being disposed of properly	0.75	0.75	1	1	0.875
51	Waste segregation at source	0.5	0.5	0.75	0.75	0.625
52	Construction & Maintenance of Walkways	0.25	0.25	0.5	0.5	0.375
53	Dust Generation during construction well managed and record exists	0.5	0.5	0.5	0.5	0.5
54	Number of routes kept to a minimum	1	1	1	1	1
55	Water Sprinkling Record is available	0.25	0.25	0.25	0.25	0.25
56	Provided lighting is adequate (minimum of 100 lux) and that personnel are not working in a shadow	1	1	1	1	1
57	Photographic Record of Roads and agricultural fields is being maintained	0.25	0.25	0.5	0.5	0.375
58	Materials will be stacked or stored in a safe manner that prevents sliding, falling or collapse	1	1	1	1	1
59	Spills and leak thoroughly cleaned	0.75	0.75	1	1	0.875
60	Construction machinery parked at designated areas?	0.5	0.5	0.75	0.75	0.625
61	Traffic issues managed well, no complaints on record	0.75	0.75	1	1	0.875
62	Daily, Weekly & Monthly Checklists are filed regularly	1	1	1	1	1
63	Storage of Hazardous Material in designated areas. MSDS available	0.5	0.5	1	1	0.75
64	Social Framework Agreement is prepared and signed	0	0	0	0	0
65	Construction activities carried out in daylight to reduce the impact of noise	1	1	1	1	1
Total Weightage (out of 116)						93.37
Monthly Percentage						80.49%
Key: (Percentage)						
100 = Excellent						
above 80 = Good						
above 60 = Average						
above 40 = Below Average						
Below 30 = Unsatisfactory						

**Annexure V: Weekly Environmental Monitoring Checklist Karakh Valley
Development Sub-Project (NCB 01)****CONSTRUCTION OF KARAKH VALLEY DEVELOPMENT
SUB-PROJECT –MULA RIVER BASIN
CONTRACT NO: NCB-01**

CONSTRUCTION OF KARAKH VALLEY DEVELOPMENT
SUB-PROJECT –MULA RIVER BASIN
CONTRACT NO: NCB-01

Project Name: Construction of Karakh Valley Dev Package No: NCB-01
Monitoring Location: Project Camp Site Date: 21/1/23

Weekly Monitoring Checklist

Description	Status	Comments
A. Physical Condition		
1. Soil Condition		
Is any soil erosion observed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Has the movement of Construction equipment been restricted to work areas to avoid unnecessary disturbance to soil types?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Have the area along the access road being visually monitored and show any type of soil erosion?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
2. Fuel Lubricants		
Is regular inspection carried to check leaks and spills?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Is there any combustible or flammable material in the fuel storage area?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Are the fuels and oils handled in the safe manner, ensure no leakage and spillage?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Have the entry oil and fuel storage areas provided with impervious floor underneath to prevent soil contamination from leaks or spills?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Are the spilled oil or fuel and used clean material being disposed of properly?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are the spills and leaks thoroughly cleaned?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

33



**CONSTRUCTION OF KARAKH VALLEY DEVELOPMENT
SUB-PROJECT –MULA RIVER BASIN
CONTRACT NO: NCB-01**



CONSTRUCTION OF KARAKH VALLEY DEVELOPMENT
SUB-PROJECT –MULA RIVER BASIN
CONTRACT NO: NCB-01

3. Traffic Management		
Are the existing routes being used to access the project area?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are the number of routes kept to a minimum?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are shortcuts being used?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Are all the vehicles and construction machinery properly maintained and tuned to maintained NEQS level?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are pressure horn being used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
4. Borrow Areas		
Is necessary approval for the borrow areas been obtained from the Engineer?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is the condition of approval for excavation of the borrow pits are being complied with?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is the drainage profile of the area is maintained to avoid any impoundment of the agriculture runoff or storm water in the borrow area?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Camp Site		
Are the generator in the construction camp properly maintained?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Is the emergency response plan available in the camp?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Waste Material		
Is waste being stored temporarily at camp and sites within the designated area?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Is any type of solid waste is being disposed-off in the fields?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

**Annexure VI: Monthly Environmental Monitoring Check List Karakh Valley
Development Sub-Project (NCB 01)**

**CONSTRUCTION OF KARAKH VALLEY DEVELOPMENT
SUB- PROJECT –MULA RIVER BASIN
CONTRACT NO: NCB-01**

**Annexure- II****Monthly Monitoring Checklist**

Name of The Project: Construction of Karakh Valley Development Sub-Project – Mulla River Basin						
Environmental Compliance Checklist						
Sr. no	Description	Week				Monthly Avg
		1	2	3	4	Mar, 2023
Major Adverse Impacts (weightage 0-3)						
1	Copy of the SSEMP provided at the camp site/contractor office?	1	2	3	3	2.25
2	The EMP instructions are understood?	3	3	3	3	3
3	An individual is nominated for implementation of EMP?	1	2	3	3	2.25
4	Camp Management Health and Hygiene/ Heating, Cooling, Lighting and Housekeeping	2	2	2	3	2.25
5	Workforce use PPE at site?	1	2	3	2	2
6	Contractor provide PPE to their workforce?	2	2	3	3	2.5
7	Potable water is available to labor	3	3	3	3	3
8	Medical Facilities, First Aid Kit is provided at camp and individual nominated for addressing emergency?	0	1	1	2	1
9	Contractor maintained Environmental Monitoring Record and submits monthly monitoring reports?	0	1	2	3	1.5
10	Contractor maintained Grievances Log registered the complaints from community?	1	2	2	2	1.75
11	Contractors prohibited child labor and forced labor?	2	2	3	3	2.5
12	Borrow area is leased and the landowner is compensated as per a lease agreement?	0	1	2	3	1.5
13	Septic tank and Soak Pits are designed for treatment of effluents?	0	0	0	0	0
14	No complaint filed regarding transmission of communicable diseases	3	3	3	3	3
Moderate Adverse Impacts (weightage 0-2)						
15	Provision of necessary welfare and hygiene requirements for the prevention of epidemic	1	1	2	2	1.5
16	Availability of an updated emergency vehicle (Ambulance)	1	1	2	2	1.5
17	Site selected for camp is 500 m from the human settlements and wildlife habitats?	2	2	2	2	2
18	No wood cutting for fuel?	2	2	2	2	2
19	LPG cylinders are provided for cooking or heating purposes?	2	2	2	2	2
20	Arrangements for proper storage and disposal solid waste is	1	1	2	2	1.5



**CONSTRUCTION OF KARAKH VALLEY DEVELOPMENT
SUB- PROJECT –MULA RIVER BASIN
CONTRACT NO: NCB-01**



	planned?					
21	Safety signs are properly displayed?	0	0	1	1	0.4

Name of The Project: Construction of Karakh Valley Development Sub-Project – Mulla River Basin						
Environmental Compliance Checklist						
Sr. no	Description	Week				Monthly Avg
		1	2	3	4	Mar, 2023
22	Contractor provided training to workers to effectively implement project specific EMP?	2	2	2	2	2
23	Contractors followed HSE plan and Emergency Response Procedures	2	2	2	2	2
24	Contractors properly disposes debris materials in approved barren land/TMA facilities preferably recycling, reuse process?	1	1	1	2	1.25
25	Natural areas with high elevation are normally selected as borrow areas?	1	1	1	1	1
26	Minimum damage to the agriculture land due to borrow pits on agriculture land?	1	1	2	2	1.5
27	Stockpiling of Material , Construction Material Management	1	1	1	1	1
28	Waste being stored temporarily on camp and sites only within the designated area	2	2	2	2	2
29	Fuel/oil storage areas are away from watercourses?	2	2	2	2	2
30	Fuel/oil storage areas are paved and ventilated	1	1	2	2	1.5
31	Fire Extinguisher is placed near Fuel Storage area	0	0	0	1	0.25
32	Tree cutting restricted to RoW and shoulder areas only?	1	1	2	2	1.5
33	No damage reported to public services like electric, water, gas, sewer or telephone lines?	1	1	2	2	1.5
34	Batching plant properly managed, no complaints	0	0	1	1	0.5
35	Project activities are displayed at proper locations	1	2	0	1	1
Minor Adverse Impacts and Good Practice (weightage 0-1)						
36	No complaints were made due to noise and vibration?	1	1	1	1	1
37	Contractor conduct Information, Education and Communication (IEC) campaign	0.1	0.1	0.1	0.1	0.1
38	Labor Screening at the time of induction	0.3	0.3	0.5	0.5	0.4
39	Fire Extinguisher are placed and checked properly	0	0	0	1	0.25
40	Contractors hiring of local labor?	1	1	1	1	1
41	Project site is fenced to prevent trespassing?	0	0	0	1	0.25



**CONSTRUCTION OF KARAKH VALLEY DEVELOPMENT
SUB- PROJECT –MULA RIVER BASIN
CONTRACT NO: NCB-01**



42	Community consultation has been carried out for project activities/concerns	1	1	1	1	1
43	Generator in the construction camp properly maintained	1	1	1	1	1
44	Adequate barriers are provided around areas where hazards may exist	0	0	0	1	0.25
45	Spilled oil or fuel and used clean up material being disposed of properly	1	1	1	1	1
46	Waste segregation at source	0	0	0	1	0.25
47	Construction and Maintenance of Walkways	0	0	0.4	0.5	0.22
48	Dust Generation during construction well managed and record exists	0.5	0.5	0.5	0.5	0.5
49	Water Sprinkling Record is available	1	1	1	1	1
50	Provided lighting is adequate (minimum of 100 lux) and that personnel are not working in a shadow	1	1	1	1	1
51	Photographic Record of roads and agricultural fields are being maintained	1	1	1	1	1
52	Materials will be stacked or stored in a safe manner that prevents sliding, falling or collapse	1	1	1	1	1
53	Spills and leak thoroughly cleaned	1	1	1	1	1
54	Construction machinery parked at designated areas?	1	1	1	1	1
55	Traffic issues managed well, no complaints on record	0.5	0.5	0.5	1	0.62
56	Daily, Weekly and Monthly Checklists are filled regularly	0	0	1	1	0.5
57	Storage of Hazardous Material in designated areas. MSDS available	1	1	1	1	1
58	Construction activities carried out in daylight to reduce the impact of noise	1	1	1	1	1
Total Weightage (out of 116)						73.24
Monthly Percentage						63.13%
Key: (Percentage)						
100 = Excellent						
Above 80 = Good						
Above 60 = Average						
Below 40 = Below Average						
Below 30 = Unsatisfactory						

Annexure VII: Onsite Training Photographs of Karakh Valley Sub-Project NCB 01



**CONSTRUCTION OF KARAKH VALLEY DEVELOPMENT
SUB- PROJECT –MULA RIVER BASIN
CONTRACT NO: NCB-01**



Annexure-IV

Photographic Record of Training



Annexure VIII: Compliance and Non-Compliance on Construction sites

1. Siri Toi Dam Sub-project ICB 01



Ensuring presence of signboards mentioned in CAP



Ensuring presence of signboards mentioned in CAP of Siri Toi Dam



Signboard near Labour Camp site



Precautionary signboard at diversion point



Signboard indicating slope and direction



Laboratory and mosque area



Signboard installed near Consultant Offices



Signboard installed near FC camp area



First Aid Box is available in camp site.



Dispensary in Contractor camp



Internal view of the dispensary



Internal view of the dispensary



Ambulance availability at the camp site



Dining Hall for serving meal to officers and staff.



Training session to workers



Training attendance of the workers



Garbage collection bins



Solid waste collection bins

2. Karakh Sub-project NCB 01



Wearing PPE's during working hours



Waste collection bins



On site discussion with EHS Advisor



Unhygienic housekeeping in camp area



Hygienic conditions of workers washrooms



Washrooms condition changed after Non-compliance notices



Hygienic condition of worker washrooms



Availability of fire extinguisher at camp site



Fire extinguisher provided at camp site



Workers using PPE's

3. BWR Building Sub-project NCB 05



Ensuring first aid kit availability and medicines expiry date



Safety measures displayed at several locations



Workers using PPE's on site



Washrooms in unhygienic conditions



Unhygienic conditions of Kitchen



Discussion on PPE's with Contractor
Environmental Specialist



Elevator Shaft not barricaded Properly



Elevator Shaft not barricaded Properly

4. **Kharzan Hatachi Sub-project NCB 02**



Solid waste collection bins at construction site



Onsite water sprinkling in process



Vehicles parking area



Hygienic conditions of washroom

**Annexure IX: Environmental Monitoring of Siri Toi Dam Project, Karakh Valley
Development Project and Water Resources Building and Kili Sardar Akhtar****Environmental Monitoring of Siri Toi Dam Project**

Sustainable Environmental Services | SES

Analysis Report

Ref # SES/ENV/Mar/23/16361464-II

Date: 29-March-2023

Description:

Sampling Location:	Canal Site	Testing Instrument	24 Hours Air Monitoring Station
Job Performed By:	Mr. Mubsin	Job Date :	09-March-2023 to 10-March-2023
Monitoring Duration	09:00AM to 08:00AM (24 Hrs.)		
Project Name:	Construction of Siri Toi Dam project-Zhob River-Basin ICB -01		
Client:	Balochistan Water Resources Development Sector (BWRDSP) ADD Lumb to-3700-Pak Irrigation department Balochistan		
Consultants Name:	NESPAK, RHC, EGC (JV)		
Contractor Name :	M/s NOOR UL HAQ & BROTHERS		

Ambient Air Quality Monitoring

Sr.	Measuring Parameters	Unit	WHO Limit	NEQS & BEQS Limits	Average Test Result	Remarks
1.	Oxide Of Nitrogen as (NO)	µg/m ³	-	40 (24 hrs.)	11.60	WL
2.	Oxide Of Nitrogen as (NO _x)	µg/m ³	25(24 hrs.)	80 (24 hrs.)	29.28	WL
3.	Sulphur Dioxide (SO ₂)	µg/m ³	80(24 hrs.)	120 (24 hrs.)	4.33	WL
4.	Carbon Monoxide (CO)	ppm	4(24 hrs.)	5(24 hrs.)	0.038	WL
5.	Particulate Matter (PM _{2.5})	µg/m ³	15(24hrs.)	35 (24 hrs.)	25.00	WL
6.	Particulate Matter (PM ₁₀)	µg/m ³	45(24 hrs.)	150 (24 hrs.)	81.46	WL
7.	SPM	µg/m ³	-	500 (24 hrs.)	165.83	WL
8.	Ozone (O ₃)	µg/m ³	50(Peak 12hrs)	130 (01 hr.)	06	WL

Note:

BEQS=Balochistan Environmental Quality Standards

The instruments used were duly calibrated.

The measurements were carried out at the client's request.

The client is responsible for the lawful usage of reported data in future.

This report is not valid for Court evidence/ Judicial knowledge.

The measurement results based on the time of monitoring

WL:- Within Limit

Field Analyst:



Chief Chemist:

Kashif Ahmad



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Air Quality Monitoring

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Analysis Report

Ref # SES/ENV/Mar/23/16361464-A

Date:20-March-2023

Description:

Sampling Location:	Camp Site	Testing Instrument:	24 Hours Air Monitoring Station
Job Performed By:	Mr. Mohsin	Job Date :	09-March-2023 to 10-March-2023
Monitoring Duration:	09:00AM to 08:00AM (24 Hrs.)		
Project Name:	Construction of Siri Tru Dam project-Zhob River-Basin ICBL-01		
Client:	Balochistan Water Resources Development Sector (BWRDSP) ABD Loan no-3700-Pak Irrigation department Baluchistan		
Consultants Name:	NESPAC, RHC, EOC (JV)		
Contractor Name :	M/s NOOR UL HAQ & BROTHERS		

Air Quality Test Report

Parameters	Temp	NO _x	NO ₂	SO ₂	CO	PM ₁₀	PM _{2.5}	SPM	O ₃
NEQS & BEQS Limit	-	24 hrs. (40 µg/m ³)	24 hrs. (80 µg/m ³)	24 hrs. (120 µg/m ³)	88 hrs. (1 mg/m ³)	24 hrs. (10 µg/m ³)	24 hrs. (100 µg/m ³)	24 hrs. (200 µg/m ³)	81 hrs. (120 µg/m ³)
WHO Limit	-	-	24 hrs. (150 µg/m ³)	24 hrs. (100 µg/m ³)	88 hrs. (14 µg/m ³)	24 hrs. (15 µg/m ³)	24 hrs. (40 µg/m ³)	-	Peak hours (100 µg/m ³)
Time	Results								
09:00AM	18°C	13.26	34.28	4.01	-	28.9	79.3	149.6	06
10:00AM	18°C	16.15	33.47	5.34	0.053	26.4	84.6	162.4	-
11:00AM	18°C	15.24	32.96	5.89	-	22.7	95.7	181.8	-
12:00PM	19°C	17.03	36.28	6.93	-	26.2	94.9	169.5	-
01:00PM	20°C	16.35	38.14	6.79	0.046	24.9	91.6	172.8	-
02:00PM	20°C	17.63	39.34	6.34	-	25.7	96.3	176.9	-
03:00PM	21°C	17.01	40.25	5.47	-	22.4	102.8	185.4	-
04:00PM	20°C	15.98	37.19	7.04	0.062	20.8	101.5	183.8	-
05:00PM	19°C	13.51	36.27	9.05	-	28.9	97.2	179.6	-
06:00PM	18°C	12.62	33.64	5.26	-	24.2	94.6	172.5	-
07:00PM	17°C	11.26	32.08	5.02	0.041	27.7	93.8	175.9	-
08:00PM	17°C	10.57	30.15	6.14	-	22.9	89.6	170.6	-
09:00PM	15°C	09.85	28.66	4.51	-	24.8	87.7	173.2	-
10:00PM	13°C	08.69	25.10	4.36	0.037	27.2	86.2	171.0	-
11:00PM	13°C	08.83	24.30	3.05	-	25.4	79.5	169.9	-
12:00AM	10°C	09.93	23.07	3.26	-	21.9	74.6	166.8	-
01:00AM	09°C	08.24	22.18	2.86	0.024	20.1	72.7	164.9	-
02:00AM	09°C	5.52	23.75	2.21	-	27.2	64.5	160.7	-
03:00AM	09°C	6.67	21.27	2.10	-	26.4	63.2	156.2	-
04:00AM	08°C	5.08	21.94	1.83	0.021	25.6	61.1	151.8	-
05:00AM	08°C	5.61	20.96	1.62	-	28.6	57.5	148.3	-
06:00AM	10°C	6.03	21.39	2.06	-	26.2	55.7	146.6	-
07:00AM	10°C	9.96	22.63	2.89	0.019	29.6	62.8	147.9	-
08:00AM	06°C	12.59	24.35	5.16	-	25.7	67.5	149.8	-
AVERAGE	14.2°C	11.60	29.28	4.33	0.038	25.06	81.48	165.83	08



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Noise Level

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Analysis Report

Ref: SES/ENV/Mar/23/16361464-D

Date: 20-March-2023

Description:

Sampling Location:	Camp Site	Testing Instrument:	Noise Meter
Job Performed By:	Mr. Mohsin	Job Date :	09-March-2023 to 10-March-2023
Monitoring Duration	09:00AM to 08:00AM (24 Hrs.)		
Project Name:	Construction of Siri Tui Dam project-Zhob River-Basin ICB-01		
Client	Balochistan Water Resources Development Sector (DWRDSP) ABD Lam no-3700-Pak Irrigation department Balochistan		
Consultants Name:	NESPAK, RHC, EDC (JV)		
Contractor Name :	M/s NOOR UL HAQ & BROTHERS		

Noise Test Report

S. No	Measuring Parameter	Testing Instrument	WHO Limit	NEQS & BEQS Limits	TIME	Results
01	Noise Level	Noise Meter	65 dB(A) (Day time)	75 dB(A) (Daytime)	09:00AM	69.6
02					10:00AM	62.8
03					11:00AM	63.7
04					12:00PM	64.8
05					01:00PM	64.1
06					02:00PM	64.8
07					03:00PM	63.7
08					04:00PM	62.1
09					05:00PM	64.3
10					06:00PM	62.2
11					07:00PM	61.3
12					08:00PM	58.2
13			09:00PM	54.6		
14			10:00PM	55.2		
15			11:00PM	52.4		
16			12:00AM	53.3		
17			01:00AM	51.0		
18			02:00AM	50.4		
19			03:00AM	49.6		
20			04:00AM	48.2		
21			05:00AM	47.6		
22			06:00AM	49.8		
23			07:00AM	52.4		
24			08:00AM	50.6		
Average Results						57.1



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Meteorological Data of the project site

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Analysis Report

Ref # SES/ENV/Mar/23/16361064-C

Date: 28-March-2023

Description

Sampling Location:	Camp Site	Testing Instrument:	Metrological Equipment's
Job Performed By:	Mr. Mohsin	Job Date :	09-March-2023 to 10-March-2023
Monitoring Duration	09:00AM to 08:00AM (24 Hrs.)		
Project Name:	Construction of Sui Tei Dam project-Zhob River-Basin ICB -011		
Client	Balochistan Water Resources Development Sector (BWRDSP) AND Loan no-3700-Pak Irrigation department Balochistan		
Consultants Name:	NESPAK, RHC, EGC (JV)		
Contractor Name :	M/s NOOR UL HAQ & BROTHERS		

METROLOGICAL DATA

S.No	TIME Hours	Wind Direction	Wind Velocity m/sec	Humidity %	Pressure mm of Hg
1	09:00AM	N	1.38	94	761
2	10:00AM	N	1.39	93	763
3	11:00AM	SW	1.34	94	756
4	12:00PM	SW	1.30	92	758
5	01:00PM	SW	1.27	90	762
6	02:00PM	SW	1.24	87	746
7	03:00PM	SS	1.21	85	755
8	04:00PM	NS	1.96	88	750
9	05:00PM	NS	1.85	87	747
10	06:00PM	N	1.34	85	744
11	07:00PM	N	1.22	84	740
12	08:00PM	N	2.14	81	738
13	09:00PM	N	2.52	83	750
14	10:00PM	NE	2.74	84	766
15	11:00PM	NE	3.08	86	771
16	12:00AM	NS	4.63	82	756
17	01:00AM	NS	5.01	88	774
18	02:00AM	N	5.41	87	770
19	03:00AM	NW	5.56	84	773
20	04:00AM	NW	5.84	80	764
21	05:00AM	NW	6.96	93	761
22	06:00AM	NW	4.63	91	765
23	07:00AM	N	3.28	93	768
24	08:00AM	N	2.16	91	767



New Head Office: Plot No 8C-46 Block Commercial Sector 31/D P&T Society Korangi, Karachi.
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Drinking Water Quality



Sustainable Environmental Services SES

Analysis Report Ref: SES/ENV/2023/1431/166-R Date: 18/Jan/2023

Description:				
Quantity of sample	1.0 Liter	Sampling Methodology	Chlor	Job Date 08-Jan-2023
Analysis Type	Chemical Analysis	Sampling Location	Sector Dam Project	
Project Name:	Construction of Sir Tai Dam project-Zhob River-Basin R/B-01			
Client:	Balochistan Water Resources Development Sector (BWRS/DP) AND Loan no-3703-Pak Irrigation Department Balochistan			
Consultant Name:	HESPAK, RISC, EOC (P)			
Contractor Name:	M/s NOOR UL HAQ & BROTHERS			

Drinking Water Report

#	Parameters	Units	Testing Method	NEQS Limits	WHO Limits	BEQS Limits	Result	Remarks
01	Total Dissolved Solids	TDS (mg/L)	Total Viable Count	-	-	-	ND	WL
02	Total Chloride	Cl ⁻ (mg/L)	APHA 822-B	≤100	≤100	≤100	ND	WL
03	Total Hardness	Hardness (mg/L)	Total Viable Count	≤100	≤100	≤100	ND	WL
04	Total Hardness	Hardness (mg/L)	APHA 822-B	≤100	≤100	≤100	ND	WL
05	Iron	mg/L	ICAP Titrimetric method	≤0.3	≤1	≤0.3	0.01	WL
06	Copper	mg/L	ICAP Titrimetric method	≤0.05	≤1.0	≤0.05	ND	WL
07	Lead	mg/L	ICAP Titrimetric method	≤0.05	≤1.0	≤0.05	ND	WL
08	Chloride	mg/L	ICAP Titrimetric method	≤100	≤100	≤100	ND	WL
09	Fluoride	mg/L	ICAP Titrimetric method	≤1.5	≤1.5	≤1.5	0.1	WL
10	Hardness	mg/L	ICAP Titrimetric method	≤100	≤100	≤100	120	WL
11	pH @ 25 °C	pH	ASTM D-1225	6.5 to 8.5	6.5 to 8.5	6.5 to 8.5	7.1	WL
12	Total Hardness	mg/L	APHA 2340-C	≤100	≤100	≤100	70	WL
13	Total Hardness	mg/L	APHA 2340-C	≤100	≤100	≤100	70	WL
14	Free Chlorine	mg/L	APHA 8200-A	≤0.5	≤1	≤0.5	0.01	WL
15	Chloride	mg/L	APHA 8200-A	≤100	≤100	≤100	162	WL
16	Cyanide	mg/L	APHA 8200-A	≤0.05	≤0.07	≤0.05	ND	WL
17	Ammonia	mg/L	APHA 8200-A	≤0.5	≤1	≤0.5	0.16	WL
18	Nitrite	mg/L	APHA 8200-A	≤0.05	≤1	≤0.05	0.04	WL
19	Nitrate	mg/L	ASTM D-3601	≤10	≤10	≤10	ND	WL
20	Aluminum	mg/L	ASTM D-611	≤0.1	≤0.1	≤0.1	0.01	WL
21	Strontium	mg/L	ASTM D-2072	≤0.01	≤0.01	≤0.01	ND	WL
22	Boron	mg/L	ASTM D-2084	≤1	≤1	≤1	0.7	WL
23	Bromine	mg/L	ASTM D-6492	≤1	≤1	≤1	0.06	WL
24	Chromium Total	mg/L	ASTM D-607	≤0.05	≤0.05	≤0.05	ND	WL
25	Copper	mg/L	ASTM D-1086	≤0.01	≤0.01	≤0.01	0.01	WL
26	Calcium	mg/L	ASTM D-1113	≤100	≤100	≤100	ND	WL
27	Lead	mg/L	ASTM D-1120	≤0.05	≤0.05	≤0.05	ND	WL
28	Manganese	mg/L	ASTM D-618	≤0.1	≤0.1	≤0.1	ND	WL
29	Phosphorus	mg/L	ASTM D-3223	≤0.05	≤0.05	≤0.05	ND	WL
30	Nickel	mg/L	ASTM D-1868	≤0.02	≤0.02	≤0.02	ND	WL
31	Selenium	mg/L	ASTM D-3856	≤0.01	≤0.01	≤0.01	ND	WL
32	Zinc	mg/L	ASTM D-1481	≤1	≤1	≤1	0.04	WL

Notes:
 1) All Balochistan Environmental Quality Standards
 The measurements were carried out on client's request.
 The client is responsible for quality control of reported data in future.
 This report is not valid for legal evidence. Lack of knowledge
 The measurement results based on the level of monitoring.
 WL = Water Limit

Field Analyst: 



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Waste Water Test Report



Sustainable Environmental Services SES

Analysis Report Ref # SES/ENV/Mon/23/1331/04-F Date: 28-March-2023

Description:			
Quantity of sample	1.8 Liter	Sampling Methodology	Grab
Analysis Type	Chemical Analysis	Sampling Location	Sirral Dam Project
Project Name:	Construction of Sir Tal Dam Project ICD -01	Sampling Date:	05-March-2023
Client:	Balochistan Water Resources Development Sector (BWRD/BS) ARD Lower-3700-Pak Irrigation Department Balochistan		
Client's Name:	NESPAK, BIC, BDC (PV)		
Contractor Name:	M/s MOON UL HAQ & BRO TURB		

Water Test Report

S.No	Measuring Parameter	Units	Testing Method	NRQN Limits 40 ± 0.01 °C	WQO Limits 40 ± 0.1 °C	BEQS Limits 40 ± 0.01 °C	Results
1	Temperature AT 40°C	°C	By Calorimetric Thermometer	40 ± 0.01 °C	40 ± 0.1 °C	40 ± 0.01 °C	39.2
1	pH @ 25 °C	pH	ASTM D-1291	6.5 to 8.5	6.5 to 8.5	6.5 to 8.5	7.92
2	Biological Oxygen Demand	BOD ₅ (mg/L)	APHA 5210	30	30	30	39
4	Chemical Oxygen Demand	COD (mg/L)	ASTM D-1252	150	150	150	150
5	Total Dissolved Solids	TDS (mg/L)	APHA 2540-C	1500	1500	1500	1100
6	Total Suspended Solids	TSS (mg/L)	APHA 2540-D	300	300	300	100
7	Oil & Grease	Oil (mg/L)	ASTM D-4281	10	10	10	0.04
8	Chloride	Cl ⁻ (mg/L)	ASTM D-511	1000	1000	1000	792
9	Phenolic compound	Phenol (mg/L)	ASTM D-1311	0.1	0.3	0.1	ND
10	Phenolic	Phenol (mg/L)	APHA 4360-F	10	10	10	5.2
11	Ammonia Nitrogen	NH ₃ (mg/L)	ASTM D-6171	30	30	30	2.7
12	Sulfate	SO ₄ ²⁻ (mg/L)	APHA 4500-Sr	0.5	0.5	0.5	ND
13	Sulfide	S ²⁻ (mg/L)	APHA 4500-S ²⁻	1.0	1.0	1.0	ND
14	Nitrate	NO ₃ ⁻ (mg/L)	ASTM D-1455	40	40	40	18.4
15	Cadmium	Cd ²⁺ (mg/L)	ASAP 10111	0.1	0.1	0.1	<0.1
16	Chromium Trivalent	Cr ³⁺ (mg/L)	APHA 1392-C	1.0	1.0	1.0	ND
17	Chromium Hexavalent	Cr ⁶⁺ (mg/L)	APHA 1391-C5	1.0	1.0	1.0	0.031
18	Lead	Pb ²⁺ (mg/L)	ASAP 12320	0.5	0.5	0.5	0.4
19	Aluminum	Al ³⁺ (mg/L)	KJ 901-01	0.01	0.01	0.01	ND
20	Mercury	Hg ²⁺ (mg/L)	HACH Direct Mercury Method	1.0	1.0	1.0	ND
21	Silver	Ag (mg/L)	ASTM D-1342	1.0	1.0	1.0	ND
22	Zinc	Zn ²⁺ (mg/L)	HACH Direct Method	5.0	5.0	5.0	0.7
23	Total Iron	Fe ²⁺ (mg/L)	APHA 1000-Fe	0.3	0.3	0.3	0.0
24	Manganese	Mn ²⁺ (mg/L)	APHA 1000-Mn	1.5	1.5	1.5	0.43
25	Barium	Barium (mg/L)	APHA 4500-BA	0.0	0.0	0.0	0.4
26	Sulfate	SO ₄ ²⁻ (mg/L)	APHA 4500-SO ₄ ²⁻	600	600	600	263
27	Ammonia	NH ₃ (mg/L)	Paterson Kit	1.0	1.0	1.0	ND
28	Copper	Cu ²⁺ (mg/L)	HACH Bismuthite Method	1.0	1.0	1.0	0.04
29	Chlorine	Cl ₂ (mg/L)	HACH DPD Method	1.0	1.0	1.0	ND
30	Aluminum	Al (mg/L)	HACH Erlenmeyer Cassette R	1.0	1.0	1.0	ND
31	Total Hardness	mg/L	KJ Method	2.0	2.0	2.0	0.33
32	Barium	Ba (mg/L)	ASTM D-4141	1.5	1.5	1.5	0.00

Notes:
 1) Method follows Environmental Quality Standards.
 2) The measurement used were daily calibration.
 3) The measurement were carried out at the client's request.
 4) The client is responsible for the correct usage of reagents and chemicals.
 5) This report is not valid for Court evidence/ Judicial cases.
 6) The measurement results based on the tests of maximum.
 W.L. = Within Limit

Field Analyst:  Mr. Ashraf



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Photographic Evidences**Picture Evidence**

Project name:	Construction of Sir Tai Dam project-Zhob River-Basin ICB -01
Client Names:	Balochistan Water Resources Development Sector (BWRD5P) ABD Loan no-3700-Pak Irrigation department Balochistan
Consultants Name:	NESPAK, RHC, EGC (JV)
Contractor Name :	M/s NOOR UL HAQ & BROTHERS



Environmental Monitoring during March on Karakh Valley Development Project

Ambient Air Quality on Karakh Valley



Lab Report No. : 202303121-ACC-AAQ
Invoice Bill No. : Inv-ADC-288



Page: 1 of 1
Reporting Date: 20-March-2023

Report to:	M/s. Zahur Khan & Brothers (JV) Agha Construction Company Khaslar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email : shameerahmed1960@gmail.com
Test ID:	AAQ-202303121
Test Performed Date:	15-March-2023
Test Type & Location:	Ambient Air Quality – East
Test Performed By:	Envi Tech AL
Test Description:	Ambient Air Quality as per NEQS

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	32	-
02	Humidity	%	30	-
03	Particulate matter (PM ₁₀)	µg/m ³	24	500
04	Particulate matter (PM _{2.5})	µg/m ³	22	35
05	Particulate matter (PM _{10/2.5})	µg/m ³	50.9	130
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	130
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20.2	21
10	Formaldehyde	mg/m ³	0.074	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.170	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurements of accuracy, statement of methods, system & interference will be included on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

 Analyzed By (Assistant Analyst)	 Reviewed By (Analyst)	 Approved By (Chief Analyst)
<p>Disclaimer:</p> <ul style="list-style-type: none"> • Report is valid for current batch samples. • This report is not valid for any pollution or pollution purposes. • If sample is provided for the institution, Envi Tech AL is not responsible for the result identification and report provided by the client. • The remaining portion of the sample shall be disposed after five working days unless otherwise instructed. 		
		



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Lab Report No. : 202303123-ACC-AAQInvoice Bill No. : Inv-AGC-233Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shamsor Email : shahmeerahmed1960@gmail.com			
Test ID:		AAQ-202303123		
Test Performed Date:		15-March-2023		
Test Type & Location:		Ambient Air Quality – South		
Test Performed By:		Envi Tech AL		
Test Description:		Ambient Air Quality as per NEQS		
Sl. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	29	-
02	Humidity	%	33	-
03	Particulate matter (PM ₁₀)	µg/m ³	30	500
04	Particulate matter (PM _{2.5})	µg/m ³	26.1	35
05	Particulate matter (PM ₁₀)	µg/m ³	41.8	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20.2	21
10	Formaldehyde	mg/m ³	0.075	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.189	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of accuracy, statement of conformity, opinion & observations will be provided on customer request.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

Disclaimer:

- Report is valid for current batch samples.
- This report is not valid for any publication or judicial purposes.
- If sample is provided by the customer, Envi Tech AL is not responsible for the sample identification and data shared by the client.
- The remaining portion of the sample shall be discarded after five working days unless otherwise instructed.



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Lab Report No. : 202303122-ACC-AAQInvoice Bill No. : Inv-AGC-233Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shameer Email : shahmeerahmed1960@gmail.com			
Test ID: AAQ-202303122				
Test Performed Date: 15-March-2023				
Test Type & Location: Ambient Air Quality – West				
Test Performed By: Envi Tech AL				
Test Description: Ambient Air Quality as per NEQS				
Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	30	-
02	Humidity	%	28	-
03	Particulate matter (PM ₁₀)	µg/m ³	26	500
04	Particulate matter (PM _{2.5})	µg/m ³	32	35
05	Particulate matter (PM ₁₀)	µg/m ³	53	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20.2	21
10	Formaldehyde	mg/m ³	0.074	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.166	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of repeatability, systematic uncertainty, precision & interpretation will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

Disclaimer:

- Report is valid for correct batch (sample).
- This report is not valid for any publication or judicial purposes.
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- The remaining portion of the sample shall be discarded after five working days unless otherwise instructed.



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Lab Report No. : 202303120-ACC-AAQInvoice Bill No. : Inv-AGC-233Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email : shahmeerahmed1960@gmail.com

Test ID:	AAQ-202303120
Test Performed Date:	15-March-2023
Test Type & Location:	Ambient Air Quality – North
Test Performed By:	Envi Tech AL
Test Description:	Ambient Air Quality as per NEQS

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	30	-
02	Humidity	%	25	-
03	Particulate matter (PM ₁₀)	µg/m ³	81	500
04	Particulate matter (PM _{2.5})	µg/m ³	34.2	35
05	Particulate matter (PM ₁₀)	µg/m ³	95	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20	21
10	Formaldehyde	mg/m ³	0.179	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.222	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of uncertainty, statement of conformity, notices & interpretations will be provided to customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed by (Analyst)

Approved By (Chief Analyst)

Disclaimer:

- Report is valid for current batch (sample).
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- The remaining portion of the sample shall be discarded after five working days unless otherwise instructed.



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Drinking Water Quality Tests on Karakh Valley

Lab Report No. : 202303129-ACC-DW
Invoice Bill No. : Inv-AGC-233



Page: 1 of 2
Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khusdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com

Sample ID:	DW-202303129
Sample Collection Date:	15-March-2023
Sample Description:	Drinking Water
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 20-March-2023
Test Description:	National Standards - Drinking Water Quality (32 - Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	MQS Limits
01	pH @ 25 °C	*APHA 4500 H	-	8.10	8.5 - 8.5
02	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	437	< 1000
03	Total Hardness as CaCO ₃	ASTM D 1126	mg/L	340	< 500
04	Color	**HACH 8025	TCU	03	≤ 15
05	Turbidity	*APHA 2130	NTU	<1	≤ 5
06	Nitrite	**HACH 8307	mg/L	0.03	≤ 3
07	Nitrate (NO ₃)	**HACH 8039	mg/L	0.22	≤ 0.50
08	Taste	*APHA 2100	-	Tasteless	Non-Objectionable
09	Odor	*APHA 2150	-	Odorless	Non-Objectionable
10	Chloride (Cl)	*APHA 4500 D	mg/L	207.53	≤ 250
11	Fluoride	**HACH 8029	mg/L	0.22	≤ 1.5
12	Aluminium	*APHA 3111-D	mg/L	N.D.	≤ 0.2
13	Nickel	*APHA 3111-B	mg/L	N.D.	≤ 0.02
14	Lead (Pb)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
15	Barium (Ba)	**HACH 8034	mg/L	N.D.	0.7
16	Antimony (Sb)	*APHA 3111-B	mg/L	N.D.	≤ 0.005
17	Arsenic (As)	*APHA 3134-B	mg/L	N.D.	≤ 0.05
18	Iron (Fe)	**HACH 8015	mg/L	N.D.	0.3
19	Cadmium (Cd)	*APHA 3111-B	mg/L	N.D.	0.01
20	Chromium (Cr)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
21	Selenium (Se)	*APHA 3114-B	mg/L	N.D.	0.01
22	Copper (Cu)	*APHA 3111-B	mg/L	0.0066	2
23	Cyanide (CN)	**HACH 8027	mg/L	N.D.	≤ 0.05

Disclaimer:

- Report is valid for current batch (sample).
- This report is not valid for any pollution or judicial purposes.
- If sample is provided by the customer, Envi Tech AL is not responsible for the sample identification and data shared by the client.
- The remaining portion of the sample shall be discarded after five working days unless otherwise instructed.



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Lab Report No. : 202303129-ACC-DW
Inv-AGC-233



Page: 2 of 2
Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agfa Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Sample ID:	DW-202303129
Sample Collection Date:	15-March-2023
Sample Description:	Drinking Water
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 20-March-2023
Test Description:	National Standards – Drinking Water Quality (32 – Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
24	Mercury (Hg)	*APHA 3112-B	mg/L	N.D.	≤ 0.001
25	Manganese (Mn)	*APHA 3111-B	mg/L	N.D.	≤ 0.5
26	Zinc (Zn)	*APHA 3111-B	mg/L	0.0100	≤ 5.0
27	Residual Chlorine	**HACH 10069	mg/L	N.D.	0.2 - 0.5
28	Phenolic Compounds as Phenole	ASTM-D-1782	mg/L	N.D.	-
29	Fecal Coliform	USEPA 1604	Count/100 ml	N.D.	-
30	Total Coliform	*APHA 922 B	Count/100 ml	N.D.	-
31	E-Coli	USEPA 1604	Count/100 ml	N.D.	-
32	Pesticides	USEPA-614.1	mg/L	N.D.	-

Note: Measurement of parameters, statement of conformity, detection & tolerable levels will be provided as customer demand.
Environmental Conditions at the time of Testing: Temperature: 21.2°C (71°F) & Humidity: 41 % (± 5%)

*APHA Standard Methods for Examination of water & wastewater 22nd Edition (2017).

**HACH 8025 (HACH Edition 10, 2014), HACH 8027 (HACH Edition 09, 2014), HACH 20089 (HACH Edition 11, 2014), HACH 8028 (HACH Edition 10, 2008), HACH 8015 (HACH Edition 08, 2014), HACH 8017 (HACH Edition 11, 2018), HACH 8039 (HACH Edition 10, 2018)

NEQS Limits = National Environmental Quality Standard (Reference: NEQS).

N.D. = Not Detected.

Analysed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

Disclaimer:

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- The remaining portion of the sample shall be discarded after five working days unless otherwise instructed.



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Lab Report No. : 202303130-ACC-DW
 Invoice Bill No. : Inv-ACC-233



Page: 1 of 2
 Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (P) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com

Sample ID:	DW-202303130
Sample Collection Date:	15-March-2023
Sample Description:	Drinking Water
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 20-March-2023
Test Description:	National Standards - Drinking Water Quality (32 – Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
01	pH @ 25 °C	*APHA 4500 H	-	7.34	6.5 – 8.5
02	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	322	< 1000
03	Total Hardness as CaCO ₃	ASTM D 1126	mg/L	180	< 500
04	Color	**HACH 8025	YCU	01	≤ 15
05	Turbidity	*APHA 2130	NTU	<1	≤ 5
06	Nitrite	**HACH 8507	mg/L	0.02	≤ 3
07	Nitrate (NO ₃)	**HACH 8030	mg/L	0.10	≤ 0.50
08	Taste	*APHA 2160	-	Tasteless	Non-Objectionable
09	Odor	*APHA 2150	-	Odorless	Non-Objectionable
10	Chloride (Cl)	*APHA 4500 Cl	mg/L	119.96	≤ 250
11	Fluoride	**HACH 8029	mg/L	0.22	≤ 1.5
12	Aluminum	*APHA 3111-D	mg/L	N.D.	≤ 0.2
13	Nickel	*APHA 3113-B	mg/L	N.D.	≤ 0.02
14	Lead (Pb)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
15	Barium (Ba)	**HACH 8014	mg/L	N.D.	0.7
16	Antimony (Sb)	*APHA 3113-B	mg/L	N.D.	≤ 0.005
17	Arsenic (As)	*APHA 3114-B	mg/L	N.D.	≤ 0.05
18	Boron (B)	**HACH 8015	mg/L	N.D.	0.3
19	Cadmium (Cd)	*APHA 3111-B	mg/L	N.D.	0.01
20	Chromium (Cr)	*APHA 3113-B	mg/L	N.D.	≤ 0.05
21	Selenium (Se)	*APHA 3114-B	mg/L	N.D.	0.01
22	Copper (Cu)	*APHA 3111-B	mg/L	0.0050	2
23	Cyanide (CN)	**HACH 8027	mg/L	N.D.	≤ 0.05

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Lab Report No. : 202303130-ACC-DWInvoice Bill No. : Inv-AGC-233Page: 2 of 2Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Sample ID:	DW-202303130
Sample Collection Date:	15-March-2023
Sample Description:	Drinking Water
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 20-March-2023
Test Description:	National Standards – Drinking Water Quality (32 – Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
24	Mercury (Hg)	*APHA 3112-B	mg/L	N.D.	≤ 0.001
25	Manganese (Mn)	*APHA 3111-B	mg/L	N.D.	≤ 0.5
26	Zinc (Zn)	*APHA 3111-B	mg/L	N.D.	≤ 5.0
27	Residual Chlorine	**HACH 10069	mg/L	N.D.	0.2 - 0.5
28	Phenolic Compounds as Phenols	ASTM D-1783	mg/L	N.D.	-
29	Fecal Coliform	USEPA 1604	Count/100 ml	N.D.	-
30	Total Coliform	*APHA 922 B	Count/100 ml	N.D.	-
31	E-Coli	USEPA 1604	Count/100 ml	N.D.	-
32	Pesticides	USEPA-614.1	mg/L	N.D.	-

Note: Mass percent of anions, percent of cations, oxides & loss on ignition will be provided per customer Demand.
Environment (condition) at the time of Testing: Temperature: 25.2°C (77°F) & Humidity: 41 N (%)

*APHA Standard Methods for Examination of water & wastewater 23rd Edition (2017).

**HACH 8025 (HACH Edition 10, 2014), HACH 8077 (HACH Edition 06, 2014), HACH 10069 (HACH Edition 11, 2014), HACH 8029 (HACH Edition 10, 2014), HACH 8015 (HACH Edition 08, 2014), HACH 8507 (HACH Edition 11, 2018), HACH 8029 (HACH Edition 10, 2018)

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Wastewater Quality Tests on Karakh Valley**ENVITECH AL**

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Lab Report No. : 202303128-ACC-WW

Invoice Bill No. : Inv-AGC-233



Page: 1 of 2

Reporting Date: 24-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Sample ID:	WW-202303128
Sample Collection Date:	15-March-2023
Sample Description:	Wastewater
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 24-March-2023
Test Description:	National Standards – Mention Below Testing of 30 Wastewater Parameters

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NIQS Limits		
					1	2	3
01	Temperature @ 20 °C	*APHA 2550	°C	29	≤ 3°C	≤ 3°C	≤ 3°C
02	pH	*APHA 4500 H-B	-	7.11	6-9	6-9	6-9
03	Sulphide	*APHA 4500-52-D	mg/L	< 1	1.0	1.0	1.0
04	Biology Oxygen Demand (BOD ₅)	***HACH 10099	mg/L	60	60	250	80
05	Chemical Oxygen Demand (COD)	***HACH 8000	mg/L	101	150	400	400
06	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	430	3500	3500	3500
07	Total Suspended Solids (TSS)	*APHA 2540-D	mg/L	189	200	400	200
08	Oil & Grease	ASTM D-3921	mg/L	02	10	10	10
09	Cadmium	*APHA 3111-B	mg/L	0.0050	0.1	0.1	0.1
10	Copper	*APHA 3111-B	mg/L	0.0090	1.0	1.0	1.0
11	Iron	*APHA 3111-B	mg/L	0.0102	8.0	8.0	8.0
12	Lead	*APHA 3111-B	mg/L	N.D.	0.5	0.5	0.5
13	Manganese	*APHA 3111-B	mg/L	N.D.	1.5	1.5	1.5
14	Mercury	*APHA 3112-B	mg/L	N.D.	0.01	0.01	0.01
15	Nickel	*APHA 3111-B	mg/L	N.D.	1.0	1.0	1.0
16	Selenium	*APHA 3114-B	mg/L	N.D.	0.5	0.5	0.5
17	Chromium	*APHA 3111-B	mg/L	N.D.	1.0	1.0	1.0
18	Zinc	*APHA 3111-B	mg/L	N.D.	5.0	5.0	5.0
19	Arsenic	*APHA 3114-B	mg/L	N.D.	1.0	1.0	1.0
20	Chlorine	***HACH 10068	mg/L	N.D.	1.0	1.0	1.0
21	Chloride	*APHA 4500 Cl-B	mg/L	319.90	1000	1000	**SC
22	Cyanide	**HACH 8027	mg/L	0.002	1.0	1.0	1.0

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Lab Report No. : 202303128-ACC-WW
Invoice Bill No. : Inv-AGC-233



Page: 2 of 2
Reporting Date: 24-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com

Sample ID:	WW-202303128
Sample Collection Date:	15-March-2023
Sample Description:	Wastewater
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 24-March-2023
Test Description:	National Standards – Mention Below Testing of 30 Wastewater Parameters

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	SEQS Limits		
					1	2	3
23	Fluoride	***HACH 8029	mg/L	0.50	10	10	10
24	Ammonia	***HACH 8038	mg/L	0.33	40	40	40
25	Sulphate	***HACH 8051	mg/L	80	600	1000	**5C
26	An Ionic Detergent As MBAs	*APHA 5540 C	mg/L	02	20	20	20
27	Phenolic Compounds (as Phenol)	ASTM-D-1783	mg/L	N.D.	0.1	0.3	0.3
28	Boron	***HACH 8015	mg/L	N.D.	6.0	6.0	6.0
29	Barium	***HACH 8014	mg/L	N.D.	1.5	1.5	1.5
30	Silver	*APHA 3111-B	mg/L	N.D.	1.0	1.0	1.0

Note: Measurement of analytes, statement of conformity, systems & interpretations will be provided on customer Demand.
Environmental Conditions at the time of Testing: Temperature: 24.6 °C (1) (47°C) & Humidity: 48% (1) (54%)

*APHA Standard Methods for Examination of water & wastewater: 22nd Edition (2012)

***HACH 8080 (HACH Edition 13, 2012), HACH 8093 (HACH Edition 13, 2012), HACH 8099 (HACH Edition 3, 2012), HACH 8037 (HACH Edition 09, 2012), HACH 8086 (HACH Edition 13, 2012), HACH 8029 (HACH Edition 09, 2012), HACH 8038 (HACH Edition 9, 2012), HACH 8034 (HACH Edition 09, 2012), HACH 8015 (HACH Edition 09, 2012)

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

1-NEQS for Municipal & Liquid Industrial Effluent into inland water.

2- NEQS for Municipal & Liquid Industrial Effluent into Sewage Treatment

3-NEQS for Municipal & Liquid Industrial Effluent into Sea.

** Discharge Concentration in or below Sea Concentration (SC)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

Disclaimer:

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Noise Tests Results on Karakh Valley

Lab Report No. : 202303127-ACC-NA
 Invoice Bill No. : Inv-AGC-233



Page: 1 of 1
 Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.				
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com				
Test ID:	NA-202303177				
Test Performed Date:	15-March-2023				
Test Type & Location:	Noise Analysis				
Test Performed By:	Envi Tech AL				
Test Description:	Noise Analysis as per NEQS				
Sr. #	Parameters / Analytes Description	Method	Unit	Test Results	NEQS Limits
01	East	ASTM E1686-18	dB	69.3	75
02	West	ASTM E1686-18	dB	59.8	75
03	North	ASTM E1686-18	dB	65.8	75
04	South	ASTM E1686-18	dB	59.5	75
05	Center Point	ASTM E1686-18	dB	68.7	75

Measurement of uncertainty, statements of conformity, opinions & interpretations will be provided on customer demand.

NEQS Limits - National Environmental Quality Standard (Reference: NEQS)
 N.D. - Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Gaseous Emission from generators test results on Karakh ValleyLab Report No. : 202303124-ACC-GAEInvoice Bill No. : Inv-AGC-233Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com			
Test ID:	GAE-202303124			
Test Performed Date:	15-March-2023			
Test Type & Location:	Gaseous Emission (Generator – Diesel – AIRMAN – POW300SEC-SN-614C20-0106- 151 KVA)			
Test Performed By:	Envi Tech AL			
Test Description:	Gaseous Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Smoke, Ringelmann Scale	-	01	2
02	Particulate matter	mg/Nm ³	59	300
03	Carbon Monoxide (CO)	mg/Nm ³	512	800
04	Carbon Dioxide (CO ₂)	%	3.12	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	278	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	139	-
07	Nitrogen Oxide (NO)	mg/Nm ³	336	-
08	NO _x	mg/Nm ³	485	600
09	Oxygen (O ₂)	%	12.4	-
10	Hydrogen Sulfide (H ₂ S)	mg/Nm ³	02	10
11	Hydrocarbon (C ₂ H ₆)	%	N.D.	-
12	Noise	dB	88	-

Note: Measurement of analytes, existence of conformity, accuracy & test procedure will be provided to customer's demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant Analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202303125-ACC-GAE

Invoice Bill No. : Inv-AGC-233



Page: 1 of 1

Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com			
Test ID:	GAE-202303125			
Test Performed Date:	15-March-2023			
Test Type & Location:	Gaseous Emission (Generator – Diesel – Cummins – 6CY COMCS-5N-PE 95300FC- 180 KVA)			
Test Performed By:	Envi Tech Al.			
Test Description:	Gaseous Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Smoke, Ringelmann Scale	-	01	2
02	Particulate matter	mg/Nm ³	63	300
03	Carbon Monoxide (CO)	mg/Nm ³	523	800
04	Carbon Dioxide (CO ₂)	%	3.23	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	262	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	145	-
07	Nitrogen Dioxide (NO _x)	mg/Nm ³	356	-
08	NO _x	mg/Nm ³	518	600
09	Oxygen (O ₂)	%	12.2	-
10	Hydrogen Sulfide (H ₂ S)	mg/Nm ³	04	10
11	Hydrocarbon (C ₂ H ₆)	%	N.D.	-
12	Noise	dB	50	-

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be a part of an external document

NEQS Limits = National Environmental Quality Standard (Reference: AEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

Disclaimer:

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Lab Report No. : 202303126-ACC-GAEInvoice Bill No. : Inv-AGC-233Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com

Test ID:	GAE-202303126
Test Performed Date:	15-March-2023
Test Type & Location:	Gasous Emission (Generator – Diesel – Cummins – 6CT COMCS-5-No-PE 95200FE- 180 KW4)
Test Performed By:	Envi Tech AL
Test Description:	Gasous Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Smoke, Ringlemann Scale	-	01	2
02	Particulate matter	mg/Nm ³	66	300
03	Carbon Monoxide (CO)	mg/Nm ³	519	800
04	Carbon Dioxide (CO ₂)	%	3.20	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	279	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	140	-
07	Nitrogen Oxide (NO)	mg/Nm ³	349	-
08	NO _x	mg/Nm ³	500	600
09	Oxygen (O ₂)	%	12.3	-
10	Hydrogen Sulfide (H ₂ S)	mg/Nm ³	04	10
11	Hydrocarbon (C ₁ H ₄)	%	N.D.	-
12	Noise	dB	91	-

Note: Measurement of accuracy, statement of conformity, opinion & interpretations will be provided on customer Demand

NEQS Limits - National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analysed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Vehicular Emission Tests Results on Karakh Valley

Lab Report No. : 202303119-ACC-VE
Invoice Bill No. : Inv-AGC-233



Page: 1 of 1
Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com			
Test ID:	VE-202303119			
Test Performed Date:	15-March-2023			
Test Type & Location:	Vehicular Emission (Roller-Dynapac-CA25000-10000138POA014812-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0419	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	83	85

Note: Measurement of uncertainty, statement of conformity, symbols & interpretation will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

 Analyzed By (Assistant Analyst)	 Reviewed By (Analyst)	 Approved By (Chief Analyst)
<p>Disclaimer:</p> <ul style="list-style-type: none"> Report is valid for current batch (sample). This report is not valid for any publication or judicial purposes. If sample is provided by the customer, Envi Tech AL is not responsible for the sample identification and its shared by the client. The remaining portion of the sample shall be discarded after five working days unless otherwise instructed. 		
		



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Lab Report No. : 202303118-ACC-VE
Invoice Bill No. : Inv-AGC-233



Page: 1 of 1
Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com			
Test ID:	VE-202303118			
Test Performed Date:	15-March-2023			
Test Type & Location:	Vehicular Emission (Transit Mixer-HINO-F51FKB-101741036-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0418	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	54	85

Note: Measurement of uncertainties, statement of conformity, remarks & interpretations will be provided on request. Demand

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analyzed By (Assistant Analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

Disclaimer:

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Lab Report No. : 202303117-ACC-VE

Invoice Bill No. : Inv-AGC-233



Page: 1 of 1

Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (Pvt) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com			
Test ID:	VE-202303117			
Test Performed Date:	15-March-2023			
Test Type & Location:	Vehicular Emission (Transit Mixer- ZWZG- ZWZG2200-ZW202101025-Diesel)			
Test Performed By:	Envi Tech Al.			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0421	6
02	Smoke Ringelmann Scale	-	01	3
03	Noise	dB	84	85

Note: Measurements of uncertainty, statement of conformity, operators & interpretations will be provided on customer request.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analysed By (Assistant Analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

Disclaimer:

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Lab Report No. : 202303116-ACC-VE
 Invoice Bill No. : Inv-AGC-233



Page: 1 of 1
 Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com			
Test ID:	VE-202303116			
Test Performed Date:	15-March-2023			
Test Type & Location:	Vehicular Emission (Loader-Caterpillar-D5G- CAT00D5GPWG801070-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0399	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	83	85

Note: Measurement of accuracy, statement of conformity, opinions & interpretations will be provided as per client's Demand.

NEQS Limits - National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analysed By (Assistant Analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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 Lab Report No. : 202303115-ACC-VE

 Invoice Bill No. : Inv-AGC-233

 Page: 1 of 1

 Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com

Test ID:	VE-202303115
Test Performed Date:	15-March-2023
Test Type & Location:	Vehicular Emission (Chain Excavator-HITACHI-EX 300- 107-38776-Diesel)
Test Performed By:	Envitech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0288	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	80	85

Note: Measurement of accuracy, attainment of conformity, submittal & interpretation will be provided as customer demand.

NEQS Limits - National Environmental Quality Standard (Reference: NEQS)

N.D. - Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303114-ACC-VEInvoice Bill No. : Inv-AGC-233Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com			
Test ID:	VE-202303114			
Test Performed Date:	15-March-2023			
Test Type & Location:	Vehicular Emission (Truck Lifter-TADANO-MO # 1985-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0236	5
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	79	85

Note: Measurements of accuracy, repeatability, precision & inter-comparability will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analysed By (Assistant Analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202303113-ACC-VE

Invoice Bill No. : Inv-AGC-233



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Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com

Test ID:	VE-202303113
Test Performed Date:	15-March-2023
Test Type & Location:	Vehicular Emission (Bulldozer-Caterpillar-MD # 275505547-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0424	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	84	85

Note: Measurement of variability, statement of uncertainty, precision & inter-comparability will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303112-ACC-VE
Invoice Bill No. : Inv-AGC-233



Page: 1 of 1
Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com

Test ID:	VE-202303112
Test Performed Date:	15-March-2023
Test Type & Location:	Vehicular Emission (Dumper-HINO-MD # IN147-RJMDEQ -Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0404	5
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	83	85

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on test upon Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303111-ACC-VE
 Invoice Bill No. : Inv-AGC-333



Page: 1 of 1
 Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com
Test ID:	VE-202303111
Test Performed Date:	15-March-2023
Test Type & Location:	Vehicular Emission (Pick up- TOYOTA-MD # LN85R-YRKR5-Diesel)
Test Performed By:	Envi Tech Al
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0297	6
02	Smoke (Ringelmann Scale)	-	01	2
03	Noise	dB	£1	85

Note: Measurement of accuracy, detection of uniformity, precision & interoperator will be provided as customer Demand.

NEQS Units - National Environmental Quality Standard (Reference: NEQS)
 N.D. = Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202303110-ACC-VE

Invoice Bill No. : Inv-AGC-233



Page: 1 of 1

Reporting Date: 20-March-2023

Report to:	M/L Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com

Test ID:	VE-202303110
Test Performed Date:	15-March-2023
Test Type & Location:	Vehicular Emission (Dumper-HINO- MD No: TK 1021 L 30V -Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0423	6
02	Smoke Ringelmann Scale	-	01	1
03	Noise	dB	83	85

Note: Measurement of uncertainty, statement of conformity, accuracy & laboratory data will be provided on customer demand.

NEQS Limits - National Environmental Quality Standard (Reference: HCOQ)

N.D. - Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202303109-ACC-VEInvoice Bill No. : Inv-AGC-233Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com

Test ID:	VE-202303109
Test Performed Date:	15-March-2023
Test Type & Location:	Vehicular Emission (Dumper-NISSAN- MD No: N1L1D 604 HBELR-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0412	5
02	Smoke Ringimann Scale	-	01	2
03	Noise	dB	54	55

Note: Measurement of accuracy, assessment of conformity, opinions & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303111-ACC-VEInvoice Bill No. : Inv-AGC-233Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com

Test ID:	VE-202303111
Test Performed Date:	15-March-2023
Test Type & Location:	Vehicular Emission (Pick up- TOYOTA-MD # UNBSR-TRKRS-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0297	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	81	85

Note: Measurement of uncertainty, statement of conformity, accuracy & interpretation will be provided on customer demand.

NEQS Limits – National Environmental Quality Standard (Reference: NEQS)
N.D. – Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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 Lab Report No. : 202303106-ACC-VE
 Invoice Bill No. : Inv-AGC-233

 Page: 1 of 1
 Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com			
Test ID:	VE-202303106			
Test Performed Date:	15-March-2023			
Test Type & Location:	Vehicular Emission (Tyre Excavator-HITACHI-MO # ROVEX-1400W-7A -Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0305	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	80	85

Note: Measurement of accuracy, standard of conformity, precision & temperature will be provided on customer Demand.

 NEQS Units = National Environmental Quality Standard (Reference: NEQS)
 N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303105-ACC-VE
Invoice Bill No. : Inv-AGC-233



Page: 1 of 1
Reporting Date: 20-March-2023

Report to:	M/s. Zahir Khan & Brothers (P) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com			
Test ID:	VE-202303105			
Test Performed Date:	15-March-2023			
Test Type & Location:	Vehicular Emission (Tyre Excavator-HITACHI-MD # EX-100 WD-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0312	5
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	80	85

Note: Measurement of uncertainty, statement of conformity, agreement & interpretation will be provided on customer's request.

NEQS Limits – National Environmental Quality Standard (Reference: NEQS)

N.D. – Not Detected


Analysed By (Assistant analyst)


Reviewed By (Analyst)


Approved By (Chief Analyst)

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Lab Report No. : 202307172-ACC-AAQ

Invoice Bill No. : Inv-AGC-281



Page: 1 of 1

Reporting Date: 26-June-2023

Report to:	M/s. Zahid Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email : shahmeerahmed1960@gmail.com
Test ID:	AAQ-202307172
Test Performed Date:	19-June-2023
Test Type & Location:	Ambient Air Quality – West
Test Performed By:	Envi Tech AL
Test Description:	Ambient Air Quality as per NEQS


Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	38	-
02	Humidity	%	32	-
03	Particulate matter (PM ₁₀)	µg/m ³	31	500
04	Particulate matter (PM _{2.5})	µg/m ³	30	35
05	Particulate matter (PM ₁₀₀)	µg/m ³	55	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20	21
10	Formaldehyde	mg/m ³	0.005	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.176	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of uncertainty, statement of conformity, opinion & interpretations will be provided on customer's Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected.



Analysed By (Assistant analyst)




Reviewed By (Analyst)




Approved By (Chief Analyst)

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Lab Report No. : 202307174-ACC-AAQInvoice Bill No. : Inv-AGC-281Page: 1 of 1Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shameer Email : shahmeerahmed1960@gmail.com			
Test ID:	AAQ-202307174			
Test Performed Date:	19-June-2023			
Test Type & Location:	Ambient Air Quality – South			
Test Performed By:	Envi Tech AL			
Test Description:	Ambient Air Quality as per NEQS			
Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	36	-
02	Humidity	%	30	-
03	Particulate matter (PM ₁₀)	µg/m ³	28	500
04	Particulate matter (PM _{2.5})	µg/m ³	23	35
05	Particulate matter (PM ₁₀)	µg/m ³	51	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20.1	21
10	Formaldehyde	mg/m ³	0.079	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.199	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of accuracy, statement of conformity, opinions & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202307170-ACC-AAQ

Invoice Bill No. : Inv-AGC-281



Page: 1 of 1

Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email : shahmeerahmed1960@gmail.com

Test ID:	AAQ-202307170
Test Performed Date:	19-June-2023
Test Type & Location:	Ambient Air Quality – North
Test Performed By:	Envi Tech AL
Test Description:	Ambient Air Quality as per NEQS

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	40	-
02	Humidity	%	32	-
03	Particulate matter (PM ₁₀)	µg/m ³	89	500
04	Particulate matter (PM _{2.5})	µg/m ³	34	35
05	Particulate matter (PM ₁₀)	µg/m ³	110	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20.1	21
10	Formaldehyde	mg/m ³	0.177	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.220	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurements of analytes, statement of conformity, notices & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

Disclaimer:

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Noise Analysis Test Results



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Lab Report No. : 202307173-ACC-NA
Inv-AGC-2B3

Invoice Bill No. : _____



Page: 1 of 1

Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Test ID: NA-202307173	
Test Performed Date: 19-June-2023	
Test Type & Location: Noise Analysis	
Test Performed By: Envi Tech AL	
Test Description: Noise Analysis as per NEQS	

Sr. #	Parameters / Analytes Description	Method	Unit	Test Results	NEQS Limits
C1	East	ASTM E1886-18	dB	69.9	75
C2	West	ASTM E1886-18	dB	60	75
C3	North	ASTM E1886-18	dB	65	75
C4	South	ASTM E1886-18	dB	60.3	75
C5	Center Point	ASTM E1886-18	dB	69	75

Assurance of accuracy, timeliness of delivery, reliability & interpretation will be provided as customer demand.

NEQS Limits = National Environmental Quality Standard (reference: NEQS)
N.D. = Not Detected.


 Analyzed By (Assistant analyst)


 Reviewed By (Analyst)



 Approved By (Chief Analyst)

Disclaimer:

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January-June 2023

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Drinking Water Test Results



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Lab Report No. : 202307179-ACC-DW

Invoice Bill No. : Inv-AGC-281



Page: 1 of 2

Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khudard, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Sample ID:	DW-202307179
Sample Collection Date:	19-June-2023
Sample Description:	Drinking Water
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech Al
Date of Analysis:	19-June-2023 to 24-June-2023
Test Description:	National Standards – Drinking Water Quality (32 – Parameters)

ANALYTICAL TEST REPORT					
Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
01	pH @ 25 °C	*APHA 4500 H	-	8.00	6.5 – 8.5
02	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	465	< 1000
03	Total Hardness as CaCo ₃	ASTM D 1126	mg/L	244	< 500
04	Color	**HACH 8023	TCU	04	≤ 15
05	Turbidity	*APHA 2130	NTU	<1	≤ 3
06	Nitrite	**HACH 8507	mg/L	0.005	≤ 3
07	Nitrate (NO ₃)	**HACH 8039	mg/L	0.20	≤ 0.50
08	Taste	*APHA 2160	-	Tasteless	Non-Objectionable
09	Odor	*APHA 3150	-	Odorless	Non-Objectionable
10	Chloride (Cl)	*APHA 4500 Cl	mg/L	199.93	≤ 250
11	Fluoride	**HACH 8029	mg/L	0.23	≤ 1.5
12	Aluminum	*APHA 3111-D	mg/L	N.D.	≤ 0.2
13	Nickel	*APHA 3111-B	mg/L	N.D.	≤ 0.02
14	Lead (Pb)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
15	Barium (Ba)	**HACH 8014	mg/L	N.D.	0.7
16	Antimony (Sb)	*APHA 3111-B	mg/L	N.D.	≤ 0.005
17	Arsenic (As)	*APHA 3114-B	mg/L	N.D.	≤ 0.05
18	Boron (B)	**HACH 8035	mg/L	N.D.	0.3
19	Cadmium (Cd)	*APHA 3111-B	mg/L	N.D.	0.01
20	Chromium (Cr)	*APHA 3113-B	mg/L	N.D.	≤ 0.05
21	Selenium (Se)	*APHA 3114-B	mg/L	N.D.	0.01
22	Copper (Cu)	*APHA 3113-B	mg/L	0.0078	2
23	Cyanide (CN)	**HACH 8027	mg/L	N.D.	≤ 0.05

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Lahore Office: 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th

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Lab Report No. : 202307179-ACC-DW

Invoice Bill No. : Inv-AGC-281



Page: 2 of 2

Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Sample ID:	DW-202307179
Sample Collection Date:	19-June-2023
Sample Description:	Drinking Water
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech Al.
Date of Analysis:	19-June-2023 to 24-June-2023
Test Description:	National Standards - Drinking Water Quality (32 - Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
24	Mercury (Hg)	*APHA 3112-B	mg/L	N.D.	≤ 0.001
25	Manganese (Mn)	*APHA 3111-B	mg/L	N.D.	≤ 0.5
26	Zinc (Zn)	*APHA 3111-B	mg/L	0.0090	≤ 5.0
27	Residual Chlorine	**HACH 10069	mg/L	N.D.	0.2 - 0.5
28	Phenolic Compounds as Phenols	ASTM-D-1789	mg/L	N.D.	-
29	Pesticides	USEPA-614.1	mg/L	N.D.	-
30	Fecal Coliforms	USEPA 1604	Count/100 ml	N.D.	-
31	Total Coliform	*APHA 922 B	Count/100 ml	N.D.	-
32	F-Coli	USEPA 1604	Count/100 ml	N.D.	-

Note: Measurement of accuracy, precision of conformity, uniformity & interpretation will be provided on customer demand.
Environmental Conditions at the time of Testing: Temperature: 25°C (LTC) & Humidity: 45% (RH)

*APHA Standard Methods for Examination of water & wastewater 21st Edition (2023).

**HACH 8025 (HACH Edition 30, 2014), HACH 8027 (HACH Edition 29, 2014), HACH 10069 (HACH Edition 11, 2014), HACH 8028 (HACH Edition 10, 2018), HACH 8029 (HACH Edition 08, 2018), HACH 8037 (HACH Edition 11, 2023), HACH 8039 (HACH Edition 10, 2018)

NEQS Limits - National Environmental Quality Standard (Reference: NEQS)

N.D. - Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202307180-ACC-DW

Invoice Bill No. : Inv-AGC-281



Page: 1 of 2

Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Sample ID:	DW-202307180
Sample Collection Date:	19-June-2023
Sample Description:	Drinking Water
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	19-June-2023 to 24-June-2023
Test Description:	National Standards - Drinking Water Quality (32 - Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
01	pH @ 25 °C	*APHA 4500 H	-	7.40	6.5 - 8.5
02	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	330	< 1000
03	Total Hardness as CaCO ₃	ASTM D 1126	mg/L	188	< 500
04	Color	**HACH 8025	TCU	02	≤ 15
05	Turbidity	*APHA 2130	NTU	<1	≤ 5
06	Nitrite	**HACH 8507	mg/L	0.003	≤ 3
07	Nitrate (NO ₃)	**HACH 8039	mg/L	0.11	≤ 0.50
08	Taste	*APHA 2160	-	Tasteless	Non-Objectionable
09	Odor	*APHA 2150	-	Odorless	Non-Objectionable
10	Chloride (Cl)	*APHA 4500-Cl	mg/L	121	≤ 250
11	Fluoride	**HACH 8029	mg/L	0.25	≤ 1.5
12	Aluminum	*APHA 3111-D	mg/L	N.D.	≤ 0.2
13	Nickel	*APHA 3111-B	mg/L	N.D.	≤ 0.02
14	Lead (Pb)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
15	Barium (Ba)	**HACH 8014	mg/L	N.D.	0.7
16	Antimony (Sb)	*APHA 3111-B	mg/L	N.D.	≤ 0.005
17	Arsenic (As)	*APHA 3114-B	mg/L	N.D.	≤ 0.05
18	Boron (B)	**HACH 8015	mg/L	N.D.	0.3
19	Cadmium (Cd)	*APHA 3111-B	mg/L	N.D.	0.01
20	Chromium (Cr)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
21	Selenium (Se)	*APHA 3114-B	mg/L	N.D.	0.01
22	Copper (Cu)	*APHA 3111-B	mg/L	0.0053	2
23	Cyanide (CN)	**HACH 8027	mg/L	N.D.	≤ 0.05

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Lab Report No. : 202307180-ACC-DWInvoice Bill No. : Inv-AGC-281Page: 2 of 2Reporting Date: 25-June-2023

Report to:	M/s. Zahir Khan & Brothers (IV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Sample ID:	DW-202307180
Sample Collection Date:	19-June-2023
Sample Description:	Drinking Water
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	19-June-2023 to 24-June-2023
Test Description:	National Standards – Drinking Water Quality (32 – Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
24	Mercury (Hg)	*APHA 3112-B	mg/L	N.D.	≤ 0.001
25	Manganese (Mn)	*APHA 3111-B	mg/L	N.D.	≤ 0.5
26	Zinc (Zn)	*APHA 3111-B	mg/L	N.D.	≤ 5.0
27	Residual Chlorine	**HACH 10009	mg/L	N.D.	0.2 - 0.5
28	Phenolic Compounds as Phenols	ASTM-D-1783	mg/L	N.D.	-
29	Pesticides	USEPA-614.1	mg/L	N.D.	-
30	Fecal Coliform	USEPA 1604	Count/100 ml	N.D.	-
31	Total Coliform	*APHA 922 B	Count/100 ml	N.D.	-
32	E-Coli	USEPA 1604	Count/100 ml	N.D.	-

Note: Measurement of accuracy, precision of accuracy, uptime & interpretation will be provided on customer Demand.
(Environmental Conditions at the time of Testing: Temperature: 23°C (±0.1°C) & Humidity: 28 N (%) RH).

*APHA Standard Methods for Examination of water & wastewater 23rd Edition (2017).

**HACH 8025 (HACH Edition 10, 2014), HACH 8027 (HACH Edition 08, 2014)/HACH 90069 (HACH Edition 11, 2014), HACH 8029 (HACH Edition 08, 2014), HACH 8031 (HACH Edition 08, 2014), HACH 8037 (HACH Edition 11, 2014), HACH 8038 (HACH Edition 10, 2009)

NEQS Limits - National Environmental Quality Standard Reference: NEQS

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Waste Water Test Results



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Lab Report No. : 202307178-ACC-WW
Invoice Bill No. : Inv-AGC-281



Page: 1 of 2
Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (Pvt) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Sample ID:	WW-202307178
Sample Collection Date:	19-June-2023
Sample Description:	Wastewater
Sample Type:	Liquid ~ Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	19-June-2023 to 24-June-2023
Test Description:	National Standards – Mention Below Testing of 30 Wastewater Parameters

ANALYTICAL TEST REPORT							
Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits		
					1	2	3
01	Temperature 40 °C	*APHA 2550	°C	28	± 3°C	± 3°C	± 3°C
02	pH	*APHA 4500 H-B	-	7.45	6-9	6-9	6-9
03	Sulphide	*APHA 4500-53-D	mg/L	< 1	1.0	1.0	1.0
04	Biology Oxygen Demand (BOD ₅)	***HACH 10099	mg/L	65	80	250	80
05	Chemical Oxygen Demand (COD)	***HACH 8000	mg/L	110	150	400	400
06	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	500	3500	3500	3500
07	Total Suspended Solids (TSS)	*APHA 2540-D	mg/L	149	200	400	200
08	Oil & Grease	ASTM D-3921	mg/L	01	10	10	10
09	Cadmium	*APHA 3113-B	mg/L	0.0085	0.1	0.1	0.1
10	Copper	*APHA 3113-B	mg/L	0.0301	1.0	1.0	1.0
11	Iron	*APHA 3113-B	mg/L	0.0111	8.0	8.0	8.0
12	Lead	*APHA 3113-B	mg/L	N.D.	0.5	0.5	0.5
13	Manganese	*APHA 3113-B	mg/L	N.D.	1.5	1.5	1.5
14	Mercury	*APHA 3112-B	mg/L	N.D.	0.01	0.01	0.01
15	Nickel	*APHA 3113-B	mg/L	N.D.	1.0	1.0	1.0
16	Selenium	*APHA 3114-B	mg/L	N.D.	0.5	0.5	0.5
17	Chromium	*APHA 3113-B	mg/L	N.D.	1.0	1.0	1.0
18	Zinc	*APHA 3113-B	mg/L	N.D.	5.0	5.0	5.0
19	Arsenic	*APHA 3114-B	mg/L	N.D.	1.0	1.0	1.0
20	Chloride	***HACH 10069	mg/L	N.D.	1.0	1.0	1.0
21	Chloride	*APHA 4500 Cl-B	mg/L	298.90	1000	1000	***SC
22	Cyanide	***HACH 8027	mg/L	0.004	1.0	1.0	1.0

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Lab Report No. : 20230717B-ACC-WW
 Invoice Bill No. : Inv-AGC-281



Page: 2 of 2
 Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Aglia Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shumair Email: shahmeerahmed1960@gmail.com
Sample ID:	WW-20230717B
Sample Collection Date:	19-June-2023
Sample Description:	Wastewater
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	19-June-2023 to 24-June-2023
Test Description:	National Standards – Mention Below Testing of 30 Wastewater Parameters

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	SEQS Limits		
					1	2	3
23	Fluoride	***HACH 8029	mg/L	0.42	10	10	10
24	Ammonia	***HACH 8038	mg/L	0.55	40	40	40
25	Sulphate	***HACH 8053	mg/L	90	600	1000	***SC
26	An Ionic Detergent As MBAs	*APHA 5540 C	mg/L	09	20	20	20
27	Phenolic Compounds (as Phenol)	ASTM D-1783	mg/L	<0.01	0.1	0.5	0.5
28	Boron	***HACH 8013	mg/L	N.D.	6.0	6.0	6.0
29	Barium	***HACH 8014	mg/L	N.D.	1.5	1.5	1.5
30	Silver	*APHA 3111-B	mg/L	N.D.	1.0	1.0	1.0

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer demand.
 Environmental Conditions at the time of Testing: Temperature: 25°C (± 1°C) & Humidity: 58% (± 1%)

*APHA Standard Methods for Examination of water & wastewater 22nd Edition (2018)
 ***HACH 8009 (HACH Edition 11, 2011), HACH 8032 (HACH Edition 11, 2011), HACH 10089 (HACH Edition 1, 2011), HACH 8017 (HACH Edition 05, 2014), HACH 10047 (HACH Edition 11, 2014), HACH 8019 (HACH Edition 16, 2016), HACH 8038 (HACH Edition 9, 2017), HACH 8014 (HACH Edition 05, 2014), HACH 8013 (HACH Edition 06, 2014)

SEQS Limits = National Environmental Quality Standard (Reference: HQS)

- 1- HQS for Municipal & Liquid Industrial Effluent into inland waters.
- 2- HQS for Municipal & Liquid Industrial Effluent into Sewage Treatment.
- 3- HQS for Municipal & Liquid Industrial Effluent into Sea.

** Discharge Concentration at or below Sea Concentration (SC)
 N.D. = Not Detected.

[Signature]
 Analyzed By (Assistant analyst)

[Signature]
 Reviewed By (Analyst)


[Signature]
 Approved By (Chief Analyst)


Disclaimer:

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Gaseous Emission Test Results






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Lab Report No. : 202307176-ACC-GAE

Invoice Bill No. : Inv-AGC-281



Page: 1 of 1


Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (IV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Test ID:	GAE-202307176
Test Performed Date:	19-June-2023
Test Type & Location:	Gaseous Emission (Generator – Diesel) – Cummins – 6CT COMES-SN-PE 95300PC- 180 KVA)
Test Performed By:	Envi Tech AL
Test Description:	Gaseous Emission (As per NEQS)


Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Smoke, Ringelmann Scale	-	01	3
02	Particulate matter	mg/Nm ³	65	300
03	Carbon Monoxide (CO)	mg/Nm ³	541	800
04	Carbon Dioxide (CO ₂)	%	11.15	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	275	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	129	-
07	Nitrogen Oxide (NO)	mg/Nm ³	377	-
08	NO _x	mg/Nm ³	525	600
09	Oxygen (O ₂)	%	12.9	-
10	Hydrogen Sulphide (H ₂ S)	mg/Nm ³	05	10
11	Hydrocarbon (C ₂ H ₄)	%	N.D.	-
12	Noise	dB	69.7	-

Note: Measurement of accuracy, operation of conformity, agencies & interpretations will be provided customer demand.


NEQS Limits - National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected.



Analysed By (Assistant analyst)






Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202307175-ACC-GAEInvoice Bill No. : Inv-AGC-281Page: 1 of 1Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khasdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com
Test ID:	GAE-202307175
Test Performed Date:	19-June-2023
Test Type & Location:	Gaseous Emission (Generator – Diesel – AIRMAN – POW300SEC-SN-614C20-0106- 131 KVA)
Test Performed By:	Envi Tech AL
Test Description:	Gaseous Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Smoke, Ringelmann Scale	-	01	1
02	Particulate matter	mg/Nm ³	62	300
03	Carbon Monoxide (CO)	mg/Nm ³	550	800
04	Carbon Dioxide (CO ₂)	%	3.22	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	299	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	124	-
07	Nitrogen Oxide (NO)	mg/Nm ³	345	-
08	NO _x	mg/Nm ³	496	600
09	Oxygen (O ₂)	%	13.7	-
10	Hydrogen Sulfide (H ₂ S)	mg/Nm ³	04	10
11	Hydrocarbon (C ₂ H ₄)	%	N.D.	-
12	Noise	dB	68.8	-

Note: Measurement of uncertainty, statement of conformity, validity & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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 Lab Report No. : 202307177-ACC-GAE

 Invoice Bill No. : INV-AGC-281

 Page: 1 of 1

 Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shameer Email: shahmeerahmed1960@gmail.com

Test ID:	GAE-202307177
Test Performed Date:	19-June-2023
Test Type & Location:	Gaseous Emission (Generator – Diesel – Cummins – 6CT COMCS-5-No-PE 95200FE- 180 KVA)
Test Performed By:	Envi Tech AL
Test Description:	Gaseous Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Smoke, Ringelmann Scale	-	01	2
02	Particulate matter	mg/Nm ³	59	300
03	Carbon Monoxide (CO)	mg/Nm ³	502	800
04	Carbon Dioxide (CO ₂)	%	3.19	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	265	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	107	-
07	Nitrogen Oxide (NO)	mg/Nm ³	399	-
08	NO _x	mg/Nm ³	520	600
09	Oxygen (O ₂)	%	12.1	-
10	Hydrogen Sulfide (H ₂ S)	mg/Nm ³	03	10
11	Hydrocarbon (C ₂ H ₄)	%	N.D.	-
12	Noise	dB	90.1	-

Note: Measurements of accuracy, statement of conformity, opinion & interpretations will be provided on a separate document.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Vehicular Emission Test Results




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Lab Report No. : 202307197-ACC-VE
Inv-AGC-303

Invoice Bill No. : _____



Page: 1 of 1


Reporting Date: 25-June-2023


Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahmeer Email: shahmeerahmed1950@gmail.com
Test ID:	VE-202307197
Test Performed Date:	19-June-2023
Test Type & Location:	Vehicular Emission (Transit Mixer-HINO-F517KB-301741036-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)


Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0422	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	63	85

Note: Measurement of accuracy, statement of validity, opinion & recommendations will be provided on customer Demand.

NEQS limits = National Environmental Quality Standards (Reference: NEQS)
N.D. = Not Detected


 Analyzed By (Assistant analyst)


 Reviewed By (Analyst)



 Approved By (Chief Analyst)


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Lab Report No.: 202307198-ACC-VE
Invoice Bill No.: inv-ACC-JR1




Page: 1 of 1
Reporting Date: 26-June-2023


Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com			
Test ID:	VE-202307198			
Test Performed Date:	19-June-2023			
Test Type & Location:	Vehicular Emission (Roller-Dynapac-CA2500D-10000138POA014812-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			


Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0423	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	83.9	85

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided as customer required.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected





 Analyzed By (Assistant analyst)


 Reviewed By (Analyst)



 Approved By (Chief Analyst)

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Lab Report No.: 202307181-ACC-VE
Invoice Bill No.: Inv-AGC-281



Page: 1 of 1
Reporting Date: 26-June-2023

Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com
Test ID:	VE-202307181
Test Performed Date:	19-June-2023
Test Type & Location:	Vehicular Emission (Grader 1-CATERPILLAR-MD # GD-37-6H -Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0424	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	81.2	85

Note: Measurement of uncertainty, statement of conformity, opinion & interpretations will be provided on customer's demand.

NEQS Limits - National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected


Analyzed By (Assistant analyst)


Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202307182-ACC-VE
Invoice Bill No. : Inv-AGC-281



Page: 1 of 1
Reporting Date: 26-June-2023

Report to:	M/s. Zabir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com			
Test ID:	VE-202307182			
Test Performed Date:	19-June-2023			
Test Type & Location:	Vehicular Emission (Grader 2-CATERPILLAR-MD # GD-37-6H-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0414	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	N.D.	85

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer demand.

NEQS Units = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected



 Analyzed By (Assistant analyst)



 Reviewed By (Analyst)




 Approved By (Chief Analyst)

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Lab Report No. : 202307196-ACC-VE
Invoice Bill No. : Inv-AGC-281



Page: 1 of 1
Reporting Date: 26-June-2023


Report to:	M/s. Zahir Khan & Brothers (JV) Agha Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahmeer Email: shahmeerahmed1960@gmail.com
Test ID:	VE-202307196
Test Performed Date:	19-June-2023
Test Type & Location:	Vehicular Emission (Transit Mixer- ZW2G- ZW2G1200-ZW202101025-Diesel)
Test Performed By:	Envitech AL
Test Description:	Vehicular Emission (As per NEQS)


Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0404	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	63.3	65

Note: Measurement of uncertainty, statement of conformity, approval & interpretations will be provided on customer Demand.

NEQS Levels = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected




 Analyzed By (Assistant Analyst)


 Reviewed By (Analyst)


 Approved By (Chief Analyst)

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Photographic Evidences of Environmental Monitoring



Drinking water sample collection from nearby Tubewell



Surface waster sample from Karakh River



Gasous emission test from generator



Ambient air test in Karakh camp site

Environmental Monitoring during March 2023 on Kharzan Hatachi

Ambient Air Quality

Lab Report No. : 202303095-ABCC-AAQInvoice Bill No. : Inv-AGB-232Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khurdar, Balochistan, Pakistan.			
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com			
Test ID: AAQ-202303095				
Test Performed Date: 14-March-2023				
Test Type & Location: Ambient Air Quality – East				
Test Performed By: Envi Tech AL				
Test Description: Ambient Air Quality as per NEQS				
Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	36	-
02	Humidity	%	26	-
03	Particulate matter (PM ₁₀)	µg/m ³	22	500
04	Particulate matter (PM _{2.5})	µg/m ³	34.1	35
05	Particulate matter (PM _{2.5})	µg/m ³	50.5	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20.3	21
10	Formaldehyde	mg/m ³	0.068	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.173	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of accuracy, statement of conformity, opinion & interpretation will be provided on customer's Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303096-ABCC-AAQInvoice Bill No. : Inv-AGB-232Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

Test ID:	AAQ-202303096
Test Performed Date:	14-March-2023
Test Type & Location:	Ambient Air Quality – West
Test Performed By:	Envi Tech AL
Test Description:	Ambient Air Quality as per NEQS

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	30	-
02	Humidity	%	29	-
03	Particulate matter (PM _{10.0})	µg/m ³	78	500
04	Particulate matter (PM _{2.5})	µg/m ³	34.4	35
05	Particulate matter (PM _{10.0})	µg/m ³	99	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20	21
10	Formaldehyde	mg/m ³	0.120	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.200	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of accuracy, statement of conformity, options & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202303097-ABCC-AAQ

Invoice Bill No. : Inv-AGB-232



Page: 1 of 1

Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

Test ID:	AAQ-202303097
Test Performed Date:	14-March-2023
Test Type & Location:	Ambient Air Quality – South
Test Performed By:	Envi Tech Al
Test Description:	Ambient Air Quality as per NEQS

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	30	-
02	Humidity	%	28	-
03	Particulate matter (PM ₁₀)	µg/m ³	20	500
04	Particulate matter (PM _{2.5})	µg/m ³	34.3	35
05	Particulate matter (PM ₁₀)	µg/m ³	72	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.O.	80
09	Oxygen (O ₂)	%	20.2	21
10	Formaldehyde	mg/m ³	0.080	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.174	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of uncertainty, statement of conformity, criteria & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303094-ABCC-AAQInvoice Bill No. : Inv-AGB-232Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

Test ID:	AAQ-202303094
Test Performed Date:	14-March-2023
Test Type & Location:	Ambient Air Quality – North
Test Performed By:	Envi Tech AL
Test Description:	Ambient Air Quality as per NEQS

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	36	-
02	Humidity	%	29	-
03	Particulate matter (PM ₁₀)	µg/m ³	23	500
04	Particulate matter (PM _{2.5})	µg/m ³	33.6	35
05	Particulate matter (PM ₁₀)	µg/m ³	96	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20.2	21
10	Formaldehyde	mg/m ³	0.091	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.170	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of uncertainty, statement of conformity, options & interpretation will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Noise Analysis Test Results



Lab Report No. : 202303098-ABCC-NA

Invoice Bill No. : Inv-AGB-232



Page: 1 of 1

Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.				
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com				
Test ID:	NA-202303098				
Test Performed Date:	14-March-2023				
Test Type & Location:	Noise Analysis				
Test Performed By:	Envi Tech AL				
Test Description:	Noise Analysis as per NEQS				
Sr. #	Parameters / Analytes Description	Method	Unit	Test Results	NEQS Limits
01	East	ASTM E1686-16	dB	60.7	75
02	West	ASTM E1686-16	dB	65.2	75
03	North	ASTM E1686-16	dB	57.2	75
04	South	ASTM E1686-16	dB	63.5	75
05	Center Point	ASTM E1686-16	dB	63.8	75

Measurement of accuracy, statement of conformity, actions & interpretations will be provided as customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Gaseous Emission from generators test results



Lab Report No. : 202303099-ABCC-GAE

Invoice Bill No. : Inv-AGB-232



Page: 1 of 1

Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Dilshad Email: aghabrotheracc799@gmail.com			
Test ID:	GAE-202303099			
Test Performed Date:	14-March-2023			
Test Type & Location:	Gaseous Emission (Generator – Diesel – EXCELLENT 25 ES – 5630519- 25 KVA)			
Test Performed By:	Envi Tech AL			
Test Description:	Gaseous Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Smoke, Ringelmann Scale	-	01	2
02	Particulate matter	mg/Nm ³	52	300
03	Carbon Monoxide (CO)	mg/Nm ³	502	800
04	Carbon Dioxide (CO ₂)	%	3.02	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	264	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	147	-
07	Nitrogen Oxide (NO)	mg/Nm ³	320	-
08	NO _x	mg/Nm ³	477	600
09	Oxygen (O ₂)	%	12.3	-
10	Hydrogen Sulfide (H ₂ S)	mg/Nm ³	03	10
11	Hydrocarbon (C _n H _n)	%	N.D.	-
12	Noise	dB	85	-

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected.

Analysed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202303100-ABCC-GAEInvoice Bill No. : Inv-AGB-232Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

Test ID:	GAE-202303100
Test Performed Date:	14-March-2023
Test Type & Location:	Gaseous Emission (Generator – Diesel – CUMMINS ONON - 350 KVA)
Test Performed By:	Envi Tech AL
Test Description:	Gaseous Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Smoke, Ringelmann Scale	-	01	2
02	Particulate matter	mg/Nm ³	72	300
03	Carbon Monoxide (CO)	mg/Nm ³	612	800
04	Carbon Dioxide (CO ₂)	%	3.08	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	356	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	171	-
07	Nitrogen Oxide (NO)	mg/Nm ³	390	-
08	NO _x	mg/Nm ³	577	600
09	Oxygen (O ₂)	%	12.4	-
10	Hydrogen Sulfide (H ₂ S)	mg/Nm ³	05	10
11	Hydrocarbon (C _n H _n)	%	N.D.	-
12	Noise	dB	92	-

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303101-ABCC-GAE

Invoice Bill No. : Inv-AGB-232



Page: 1 of 1

Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com			
Test ID:	GAE-202303101			
Test Performed Date:	14-March-2023			
Test Type & Location:	Gaseous Emission (Generator – Diesel – CUMMINS ONON - 300 KVA)			
Test Performed By:	Ervi Tech AL			
Test Description:	Gaseous Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Smoke, Ringelmann Scale	-	01	2
02	Particulate matter	mg/Nm ³	65	300
03	Carbon Monoxide (CO)	mg/Nm ³	588	800
04	Carbon Dioxide (CO ₂)	%	3.01	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	333	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	155	-
07	Nitrogen Oxide (NO)	mg/Nm ³	372	-
08	NO _x	mg/Nm ³	537	600
09	Oxygen (O ₂)	%	13.1	-
10	Hydrogen Sulfide (H ₂ S)	mg/Nm ³	04	10
11	Hydrocarbon (C ₂ H ₆)	%	N.D.	-
12	Noise	dB	88	-

Note: Measurement of uncertainty, statement of conformity, accuracy & interpretation will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Drinking water test results



Lab Report No. : 202303132-ABCC-DW

Inv-AGB-232



Page: 1 of 2

Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

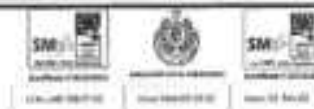
Sample ID:	DW-202303132
Sample Collection Date:	14-March-2023
Sample Description:	Drinking Water (SITE Area)
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 20-March-2023
Test Description:	National Standards - Drinking Water Quality (32 - Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
01	pH @ 25 °C	*APHA 4500 H	-	8.39	6.5 - 8.5
02	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	320	< 1000
03	Total Hardness as CaCO ₃	ASTM D 1126	mg/L	92	< 500
04	Color	**HACH 8025	TCU	02	≤ 15
05	Turbidity	*APHA 2130	NTU	<1	≤ 5
06	Nitrite	**HACH 8507	mg/L	0.03	≤ 3
07	Nitrate (NO ₃)	**HACH 8039	mg/L	0.20	≤ 0.50
08	Taste	*APHA 2160	-	Tasteless	Non-Objectionable
09	Odor	*APHA 2150	-	Odorless	Non-Objectionable
10	Chloride (Cl)	*APHA 4500 Cl	mg/L	223.93	≤ 250
11	Fluoride	**HACH 8029	mg/L	0.10	≤ 1.5
12	Aluminum	*APHA 3111-D	mg/L	N.D.	≤ 0.2
13	Nickel	*APHA 3111-B	mg/L	N.D.	≤ 0.02
14	Lead (Pb)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
15	Barium (Ba)	**HACH 8014	mg/L	N.D.	0.7
16	Antimony (Sb)	*APHA 3111-B	mg/L	N.D.	≤ 0.005
17	Arsenic (As)	*APHA 3114-B	mg/L	N.D.	≤ 0.05
18	Boron (B)	**HACH 8015	mg/L	N.D.	0.3
19	Cadmium (Cd)	*APHA 3111-B	mg/L	N.D.	0.01
20	Chromium (Cr)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
21	Selenium (Se)	*APHA 3114-B	mg/L	N.D.	0.01
22	Copper (Cu)	*APHA 3111-B	mg/L	0.0055	2
23	Cyanide (CN)	**HACH 8027	mg/L	N.D.	≤ 0.05

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Lab Report No. : 202303132-ABCC-DW
Inv-AGB-232



Page: 2 of 2

Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com
Sample ID:	DW-202303132
Sample Collection Date:	14-March-2023
Sample Description:	Drinking Water (SITE Area)
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 20-March-2023
Test Description:	National Standards – Drinking Water Quality (32 – Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
24	Mercury (Hg)	*APHA 3112-B	mg/L	N.D.	≤ 0.001
25	Manganese (Mn)	*APHA 3111-B	mg/L	N.D.	≤ 0.5
26	Zinc (Zn)	*APHA 3111-B	mg/L	N.D.	≤ 5.0
27	Residual Chlorine	**HACH 10009	mg/L	N.D.	0.2 - 0.5
28	Phenolic Compounds as Phenols	ASTM-D-1783	mg/L	N.D.	-
29	Fecal Coliform	USEPA 1604	Count/100 ml	N.D.	-
30	Total Coliform	*APHA 922 B	Count/100 ml	N.D.	-
31	E-Coli	USEPA 1604	Count/100 ml	N.D.	-
32	Pesticides	USEPA-614.1	mg/L	N.D.	-

Note: Uncertainty of measurement, assessment of conformity, opinions & interpretations will be provided on customer Demand.
Environmental Conditions at the time of Testing: Temperature: 25.2°C (77°C) & Humidity: 49 % (2.98)

*APHA Standard Methods for Examination of water & wastewater 23rd Edition (2017).

**HACH 8025 (HACH Edition 10, 2014)(HACH 8027 (HACH Edition 08, 2014)(HACH 10009 (HACH Edition 11, 2014), HACH 8029 (HACH Edition 10, 2018), HACH 8033 (HACH Edition 08, 2014), HACH 8507 (HACH Edition 11, 2019), HACH 8039 (HACH Edition 10, 2019)

NEQS Limits = National Environmental Quality Standard (Reference: NEQS).

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202303133-ABCC-DW

Invoice Bill No. : Inv-AGB-232



Page: 1 of 2

Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com
Sample ID:	DW-202303133
Sample Collection Date:	14-March-2023
Sample Description:	Drinking Water (CAMP)
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 20-March-2023
Test Description:	National Standards – Drinking Water Quality (32 – Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
01	pH @ 25 °C	*APHA 4500 H	-	8.03	6.5 – 8.5
02	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	318	< 1000
03	Total Hardness as CaCO ₃	ASTM D 1126	mg/L	88	< 500
04	Color	**HACH 8025	TCU	02	≤ 15
05	Turbidity	*APHA 2130	NTU	<1	≤ 5
06	Nitrite	**HACH 8507	mg/L	0.03	≤ 3
07	Nitrate (NO ₃)	**HACH 8039	mg/L	0.20	≤ 0.50
08	Taste	*APHA 2160	-	Tasteless	Non-Objectionable
09	Odor	*APHA 2150	-	Odorless	Non-Objectionable
10	Chloride (Cl)	*APHA 4500 Cl	mg/L	217.93	≤ 250
11	Fluoride	**HACH 8029	mg/L	0.12	≤ 1.5
12	Aluminum	*APHA 3111-D	mg/L	N.D.	≤ 0.2
13	Nickel	*APHA 3111-B	mg/L	N.D.	≤ 0.02
14	Lead (Pb)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
15	Barium (Ba)	**HACH 8034	mg/L	N.D.	0.7
16	Antimony (Sb)	*APHA 3111-B	mg/L	N.D.	≤ 0.005
17	Arsenic (As)	*APHA 3114-B	mg/L	N.D.	≤ 0.05
18	Boron (B)	**HACH 8015	mg/L	N.D.	0.3
19	Cadmium (Cd)	*APHA 3111-B	mg/L	N.D.	0.01
20	Chromium (Cr)	*APHA 3111-B	mg/L	N.O.	≤ 0.05
21	Selenium (Se)	*APHA 3114-B	mg/L	N.D.	0.01
22	Copper (Cu)	*APHA 3111-B	mg/L	0.0053	2
23	Cyanide (CN)	**HACH 8027	mg/L	N.D.	≤ 0.05

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Lab Report No. : 202303133-ABCC-DW

Invoice Bill No. : Inv-AGB-232



Page: 2 of 2

Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com
Sample ID:	DW-202303133
Sample Collection Date:	14-March-2023
Sample Description:	Drinking Water (CAMP)
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 20-March-2023
Test Description:	National Standards - Drinking Water Quality (32 - Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
24	Mercury (Hg)	*APHA 3112-B	mg/L	N.D.	≤ 0.001
25	Manganese (Mn)	*APHA 3111-B	mg/L	N.D.	≤ 0.5
26	Zinc (Zn)	*APHA 3111-B	mg/L	N.D.	≤ 5.0
27	Residual Chlorine	**HACH 10069	mg/L	N.D.	0.2 - 0.5
28	Phenolic Compounds as Phenols	ASTM-D-1783	mg/L	N.D.	-
29	Fecal Coliform	USEPA 1604	Count/100 ml	N.D.	-
30	Total Coliform	*APHA 922 B	Count/100 ml	N.D.	-
31	E-Coli	USEPA 1604	Count/100 ml	N.D.	-
32	Pesticides	USEPA-614.1	mg/L	N.D.	-

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer Demand.
Environmental Conditions at the time of Testing: Temperature: 25.2°C (±0.1°C) & Humidity: 41 N (± 1%)

*APHA Standard Methods for Examination of water & wastewater 22nd Edition (2017)

**HACH 8025 (HACH Edition 10, 2018), HACH 8027 (HACH Edition 08, 2014), HACH 10069 (HACH Edition 11, 2014), HACH 8029 (HACH Edition 10, 2018), HACH 8015 (HACH Edition 08, 2014), HACH 8507 (HACH Edition 11, 2013), HACH 8039 (HACH Edition 10, 2018)

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Waste water test results



Lab Report No. : 202303131-ABCC-WW
Invoice Bill No. : Inv-AGB-232



Page: 1 of 2
Reporting Date: 24-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dildad Email: aghabrotherscc799@gmail.com

Sample ID:	WW-202303131
Sample Collection Date:	15-March-2023
Sample Description:	Wastewater
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 24-March-2023
Test Description:	National Standards – Mention Below Testing of 30 Wastewater Parameters

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits		
					1	2	3
01	Temperature 40 °C	*APHA 2550	°C	28	≤ 3°C	≤ 3°C	≤ 3°C
02	pH	*APHA 4500 H-B	-	8.84	6-9	6-9	6-9
03	Sulphide	*APHA 4500-S2-D	mg/L	< 1	1.0	1.0	1.0
04	Biology Oxygen Demand (BOD ₅)	***HACH 10099	mg/L	74	80	250	80
05	Chemical Oxygen Demand (COD)	***HACH 8000	mg/L	143	150	400	400
06	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	509	3500	3500	3500
07	Total Suspended Solids (TSS)	*APHA 2540-D	mg/L	294	200	400	200
08	Oil & Grease	ASTM D-3921	mg/L	04	10	10	10
09	Cadmium	*APHA 3111-B	mg/L	0.0079	0.1	0.1	0.1
10	Copper	*APHA 3111-B	mg/L	0.0113	1.0	1.0	1.0
11	Iron	*APHA 3111-B	mg/L	0.0120	8.0	8.0	8.0
12	Lead	*APHA 3111-B	mg/L	N.D.	0.5	0.5	0.5
13	Manganese	*APHA 3111-B	mg/L	N.D.	1.5	1.5	1.5
14	Mercury	*APHA 3112-B	mg/L	N.D.	0.01	0.01	0.01
15	Nickel	*APHA 3111-B	mg/L	N.D.	1.0	1.0	1.0
16	Selenium	*APHA 3114-B	mg/L	N.D.	0.5	0.5	0.5
17	Chromium	*APHA 3111-B	mg/L	N.D.	1.0	1.0	1.0
18	Zinc	*APHA 3111-B	mg/L	N.D.	5.0	5.0	5.0
19	Arsenic	*APHA 3114-B	mg/L	N.D.	1.0	1.0	1.0
20	Chlorine	***HACH 10069	mg/L	N.D.	1.0	1.0	1.0
21	Chloride	*APHA 4500 Cl-B	mg/L	399.87	1000	1000	**5C
22	Cyanide	***HACH 8027	mg/L	0.003	1.0	1.0	1.0

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Lab Report No. : 202303131-ABCC-WW
 Invoice Bill No. : Inv-AGB-232



Page: 2 of 2
 Reporting Date: 24-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

Sample ID:	WW-202303131
Sample Collection Date:	15-March-2023
Sample Description:	Wastewater
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-March-2023 to 24-March-2023
Test Description:	National Standards - Mention Below Testing of 30 Wastewater Parameters

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	SEQS Limits		
					1	2	3
23	Fluoride	***HACH 8029	mg/L	0.69	10	10	10
24	Ammonia	***HACH 8038	mg/L	0.66	40	40	40
25	Sulphate	***HACH 8051	mg/L	96	600	1000	**5C
26	An Ionic Detergent As MBAs	*APHA 5540 C	mg/L	03	20	20	20
27	Phenolic Compounds (as Phenol)	ASTM-D-1783	mg/L	N.D.	0.1	0.3	0.3
28	Boron	***HACH 8015	mg/L	N.D.	6.0	6.0	6.0
29	Barium	***HACH 8014	mg/L	N.D.	1.5	1.5	1.5
30	Silver	*APHA 3111-B	mg/L	N.D.	1.0	1.0	1.0

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer's demand. Environmental Conditions at the time of Testing: Temperature: 24.6 °C (s. 1.4°C) & Humidity:40 % (s)

*APHA Standard Methods for Examination of water & wastewater 23rd Edition (2017).

***HACH 8000 (HACH Edition 13, 2011), HACH 8011 (HACH Edition 11, 2010), HACH 10000 (HACH Edition 8, 2014), HACH 8017 (HACH Edition 09, 2014), HACH 10000 (HACH Edition 11, 2014), HACH 8019 (HACH Edition 13, 2018), HACH 8018 (HACH Edition 9, 2017), HACH 901X (HACH Edition 09, 2014), HACH 8023 (HACH Edition 08, 2014)

NEQS Limits = National Environmental Quality Standard (Reference: NEQS).

1-NEQS for Municipal & Liquid Industrial Effluent into inland waters.

2- NEQS for Municipal & Liquid Industrial Effluent into Sewage Treatment.

3-NEQS for Municipal & Liquid Industrial Effluent into Sea.

** Discharge Concentration at or below Sea Concentration (SC).

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

Disclaimer:

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Noise Level test results



Lab Report No. : 202303098-ABCC-NA

Invoice Bill No. : Inv-AGB-232



Page: 1 of 1

Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

Test ID:	NA-202303098
Test Performed Date:	14-March-2023
Test Type & Location:	Noise Analysis
Test Performed By:	Envi Tech AL
Test Description:	Noise Analysis as per NEQS

Sr. #	Parameters / Analytes Description	Method	Unit	Test Results	NEQS Limits
01	East	ASTM E1686-16	dB	60.7	75
02	West	ASTM E1686-16	dB	65.2	75
03	North	ASTM E1686-16	dB	57.2	75
04	South	ASTM E1686-16	dB	63.5	75
05	Center Point	ASTM E1686-16	dB	69.8	75

Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Vehicular emission test results



Lab Report No. : 202303076-ABCC-VE
Invoice Bill No. : Inv-AGB-232



Page: 1 of 1
Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com			
Test ID:	VE-202303076			
Test Performed Date:	14-March-2023			
Test Type & Location:	Vehicular Emission (Grader-CATERPILLAR-No. Plate S-61M05029-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0356	5
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	81	85

Note: Measurement of accuracy, statement of conformity, subline & interpretation will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303077-ABCC-VE

Invoice Bill No. : Inv-AGB-232



Page: 1 of 1

Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com			
Test ID:	VE-202303077			
Test Performed Date:	14-March-2023			
Test Type & Location:	Vehicular Emission (Roller-DYNAPAC-MD #: CA-25PD-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0401	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	N2	85

Note: Measurement of uncertainty, statement of conformity, notices & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

Disclaimer:

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Lab Report No. : 202303078-ABCC-VE
 Invoice Bill No. : Inv-AGB-232



Page: 1 of 1
 Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

Test ID:	VE-202303078
Test Performed Date:	14-March-2023
Test Type & Location:	Vehicular Emission (Water Tanker-Super HINO-MD # FF-174LA-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0298	6
02	Smoke Ringemann Scale	-	01	2
03	Noise	dB	80	85

Note: Measurement of uncertainty, statement of conformity, opinion & interpretation will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303072-ABCC-VEInvoice Bill No. : inv-AGB-232Page: 1 of 1Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuardar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

Test ID:	VE-202303072
Test Performed Date:	14-March-2023
Test Type & Location:	Vehicular Emission (Dumper-HINO-MD # FS2KK8-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0333	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	80	85

Note: Measurement of uncertainty, statement of conformity, opinion & interpretations will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303073-ABCC-VE
Invoice Bill No. : Inv-AGB-232



Page: 1 of 1
Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

Test ID:	VE-202303073
Test Performed Date:	14-March-2023
Test Type & Location:	Vehicular Emission (Dumper-MD # ER1kZH-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0326	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	80	85

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer's Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202303075-ABCC-VE
Inv-AGB-232



Page: 1 of 1
Reporting Date: 20-March-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Dilshad Email: aghabrotherscc799@gmail.com

Test ID:	VE-202303075
Test Performed Date:	14-March-2023
Test Type & Location:	Vehicular Emission (Tractor-KOMATSU-GD31-GD33H-No. Plate 3061-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0440	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	62	85

Note: Measurement of uncertainty, statement of conformity, opinion & interpretation will be provided on customer's demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Environmental Monitoring Test Results in June 2023

Ambient Air test results



Lab Report No. : 202306224-ABCC-AAQ

Invoice Bill No. : Inv-AGB-262



Page: 1 of 1

Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khurdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	AAQ-202306224
Test Performed Date:	12-June-2023
Test Type & Location:	Ambient Air Quality – East
Test Performed By:	Envi Tech AL
Test Description:	Ambient Air Quality as per NEQS

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
03	Temperature	°C	34	-
04	Humidity	%	32	-
05	Particulate matter (PM ₁₀)	µg/m ³	27	500
06	Particulate matter (PM _{2.5})	µg/m ³	22.1	35
05	Particulate matter (PM ₁₀)	µg/m ³	54.6	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	33.7	21
10	Formaldehyde	mg/m ³	0.054	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.158	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of uncertainty, statement of conformity, opinion & interpretation will be provided on customer Demand.

NEQS Limits = National Environmental Quality Mandate (Reference: NEQS)

N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202306225-ABCC-AAQInvoice Bill No. : INV-AGB-282Page: 1 of 1Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	AAQ-202306225
Test Performed Date:	12-June-2023
Test Type & Location:	Ambient Air Quality – West
Test Performed By:	Envi Tech AL
Test Description:	Ambient Air Quality as per NEQS

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	33	-
02	Humidity	%	27	-
03	Particulate matter (PM _{10.0})	µg/m ³	64	500
04	Particulate matter (PM _{2.5})	µg/m ³	36.4	35
05	Particulate matter (PM _{10.0})	µg/m ³	104	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	20.2	21
10	Formaldehyde	mg/m ³	0.138	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.187	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of accuracy, statement of conformity, validity & Interpretation will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

Disclaimer:

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Lab Report No. : 202306226-ABCC-AAQInvoice Bill No. : Inv-AGB-282Page: 1 of 1Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Charms Email: aghabrotherscc799@gmail.com

Test ID:	AAQ-202306226
Test Performed Date:	12-June-2023
Test Type & Location:	Ambient Air Quality – South
Test Performed By:	Envi Tech AL
Test Description:	Ambient Air Quality as per NEQS

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	30	-
02	Humidity	%	31	-
03	Particulate matter (PM _{10.5})	µg/m ³	24	300
04	Particulate matter (PM _{2.5})	µg/m ³	11	35
05	Particulate matter (PM _{10.5})	µg/m ³	68	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	80
09	Oxygen (O ₂)	%	19.9	21
10	Formaldehyde	mg/m ³	0.078	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.182	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measurement of accuracy, statement of conformity, validity & interpretation will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306227-ABCC-AAQ

Invoice Bill No. : Inv-AGB-282



Page: 1 of 1

Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	AAQ-202306227
Test Performed Date:	12-June-2023
Test Type & Location:	Ambient Air Quality – North
Test Performed By:	Envi Tech Al
Test Description:	Ambient Air Quality as per NEQS

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Temperature	°C	35	-
02	Humidity	%	31	-
03	Particulate matter (PM 10)	µg/m ³	47	500
04	Particulate matter (PM 2.5)	µg/m ³	32	85
05	Particulate matter (PM 10)	µg/m ³	94	150
06	Carbon Monoxide (CO)	mg/m ³	N.D.	10
07	Sulphur Dioxide (SO ₂)	µg/m ³	N.D.	120
08	Nitrogen Dioxide (NO ₂)	µg/m ³	N.D.	60
09	Oxygen (O ₂)	%	20.1	21
10	Formaldehyde	mg/m ³	0.007	-
11	Total Volatile Organic Compounds (TVOC)	mg/m ³	0.146	-
12	Ozone (O ₃)	µg/m ³	N.D.	130

Note: Measure ment of uncertainty, statement of conformity, validity & Interpretations will be provided on customer Demand.

NEQS Limits - National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Gaseous emission test results


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Lab Report No. : 202306229-ABCC-GAJ

Invoice Bill No. : Inv-AGB-283



Page: 1 of 1

Reporting Date: 18-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com
Test ID:	GAE-202306229
Test Performed Date:	12-June-2023
Test Type & Location:	Gaseous Emission (Generator – Diesel – EXCELLENT 25 ES – 5630519- 25 KVA)
Test Performed By:	Envi Tech Al.
Test Description:	Gaseous Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Senska, Ringemann Scale	-	01	2
02	Particulate matter	mg/Nm ³	46	300
03	Carbon Monoxide (CO)	mg/Nm ³	513	800
04	Carbon Dioxide (CO ₂)	%	2.97	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	271	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	130	-
07	Nitrogen Oxide (NO)	mg/Nm ³	313	-
08	NO _x	mg/Nm ³	477	800
09	Oxygen (O ₂)	%	22.5	-
10	Hydrogen Sulphide (H ₂ S)	mg/Nm ³	04	10
11	Hydrocarbon (C ₂ H ₆)	%	N.D.	-
12	None	dB	64	-

Note: Measurement of emissions, statement of conformity, capacity & interpretation will be provided to customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected


 Analyzed By (Assistant analyst)


 Reviewed By (Analyst)



 Approved By (Chief Analyst)

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Lab Report No. : 202306231-ABCC-GAE

Invoice Bill No. : Inv-AGB-282



Page: 1 of 1

Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc790@gmail.com

Test ID:	GAE-202306231
Test Performed Date:	12-June-2023
Test Type & Location:	Gaseous Emission (Generator – Diesel – CUMMINS ONON - 300 KVA)
Test Performed By:	Envi Tech AL
Test Description:	Gaseous Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Results	NEQS Limits
01	Smoke, Ringelmann Scale	-	01	2
02	Particulate matter	mg/Nm ³	64	300
03	Carbon Monoxide (CO)	mg/Nm ³	573	800
04	Carbon Dioxide (CO ₂)	%	3.01	-
05	Sulphur Dioxide (SO ₂)	mg/Nm ³	112	1700
06	Nitrogen Dioxide (NO ₂)	mg/Nm ³	161	-
07	Nitrogen Oxide (NO)	mg/Nm ³	378	-
08	NO _x	mg/Nm ³	542	600
09	Oxygen (O ₂)	%	12.3	-
10	Hydrogen Sulphide (H ₂ S)	mg/Nm ³	04	10
11	Hydrocarbon (C _n H _n)	%	N.D.	-
12	Noise	dB	85	-

Note: Measurement of analytes, statement of conformity, options & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected.

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Noise Level test results



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Lab Report No. : 20230622B-ABCC-NA
Invoice/Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com
Test ID:	NA-20230622B
Test Performed Date:	12-June-2023
Test Type & Location:	Noise Analysis
Test Performed By:	Envi Tech AL
Test Description:	Noise Analysis as per NEQS

Sr. #	Parameters / Analytes Description	Method	Unit	Test Results	NEQS Limits
01	East	ASTM E1686-16	dB	62.8	75
02	West	ASTM E1686-16	dB	64.3	75
03	North	ASTM E1686-16	dB	55.1	75
04	South	ASTM E1686-16	dB	66.2	75
05	Center Point	ASTM E1686-16	dB	68.4	75

Measurement of accuracy, statement of conformity, opinions & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected.


 Analyzed By (Assistant analyst)


 Reviewed By (Analyst)



 Approved By (Chief Analyst)

Disclaimer:

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Drinking Water test results



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Lab Report No. : 202306223-ABCC-DW

Invoice Bill No. : Inv-AGB-282



Page: 1 of 2


Reporting Date: 19-June-2023


Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com
Sample ID:	DW-202306223
Sample Collection Date:	12-June-2023
Sample Description:	Drinking Water (SITE Area)
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	12-June-2023 to 16-June-2023
Test Description:	National Standards – Drinking Water Quality (32 – Parameters)

ANALYTICAL TEST REPORT					
Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
01	pH @ 25 °C	*APHA 4500 H	-	8.27	6.5 – 8.5
02	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	351	< 1000
03	Total Hardness as CaCO ₃	ASTM D 1126	mg/L	86	< 500
04	Color	**HACH 8025	TCU	02	≤ 15
05	Turbidity	*APHA 2130	NTU	<1	≤ 5
06	Nitrite	**HACH 8507	mg/L	0.04	≤ 3
07	Nitrate (NO ₃)	**HACH 8035	mg/L	0.23	≤ 0.50
08	Taste	*APHA 2160	-	Tasteless	Non-Objectionable
09	Odor	*APHA 2150	-	Odorless	Non-Objectionable
10	Chloride (Cl)	*APHA 4500 Cl	mg/L	242	≤ 250
11	Fluoride	**HACH 8029	mg/L	0.12	≤ 1.5
12	Aluminum	*APHA 3111-D	mg/L	N.D.	≤ 0.2
13	Nickel	*APHA 3111-B	mg/L	N.D.	≤ 0.02
14	Lead (Pb)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
15	Barium (Ba)	**HACH 8034	mg/L	N.D.	0.7
16	Antimony (Sb)	*APHA 3111-B	mg/L	N.D.	≤ 0.005
17	Arsenic (As)	*APHA 3114-B	mg/L	N.D.	≤ 0.05
18	Boron (B)	**HACH 8015	mg/L	N.D.	0.3
19	Cadmium (Cd)	*APHA 3111-B	mg/L	N.D.	0.01
20	Chromium (Cr)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
21	Selenium (Se)	*APHA 3114-B	mg/L	N.D.	0.01
22	Copper (Cu)	*APHA 3111-B	mg/L	0.0048	3
23	Cyanide (CN)	**HACH 8027	mg/L	N.D.	≤ 0.05

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Lab Report No. : 202306222-ABCC-DW

Invoice Bill No. : Inv-AGB-282



Page: 2 of 2

Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com
Sample ID:	DW-202306222
Sample Collection Date:	12-June-2023
Sample Description:	Drinking Water (SITE Area)
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	17-June-2023 to 16-June-2023
Test Description:	National Standards - Drinking Water Quality (32 - Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
24	Mercury (Hg)	*APHA 3112-B	mg/L	N.D.	≤ 0.001
25	Manganese (Mn)	*APHA 3111-B	mg/L	N.D.	≤ 0.5
26	Zinc (Zn)	*APHA 3111-B	mg/L	N.D.	≤ 5.0
27	Residual Chlorine	**HACH 10069	mg/L	0.2	0.2 - 0.5
28	Phenolic Compounds as Phenols	ASTM-D-1783	mg/L	N.D.	-
29	Fecal Coliform	USEPA 1604	Count/100 ml	N.D.	-
30	Total Coliform	*APHA 922-B	Count/100 ml	N.D.	-
31	E-Coli	USEPA 1604	Count/100 ml	N.D.	-
32	Pesticides	USEPA-614.1	mg/L	N.D.	-

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer Demand.
Environmental Conditions at the time of Testing: Temperature: 25.2°C (±1.0°C) & Humidity: 41 % (± 3%)

*APHA (Standard Methods for Examination of water & wastewater 23rd Edition (2017)).

**HACH 8025 (HACH Edition 10, 2014), HACH 8027 (HACH Edition 09, 2014), HACH 10069 (HACH Edition 11, 2014), HACH 8029 (HACH Edition 10, 2018), HACH 8013 (HACH Edition 08, 2014), HACH 8507 (HACH Edition 11, 2018), HACH 8039 (HACH Edition 20, 2013)

NEQS Limits - National Environmental Quality Standard (reference: MECQS).

N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306223-ABCC-DW
Inv-AGB-282



Page: 1 of 2

Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Sample ID:	DW-202306223
Sample Collection Date:	12-June-2023
Sample Description:	Drinking Water (CAMP)
Sample Type:	Liquid - Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	12-June-2023 to 16-June-2023
Test Description:	National Standards - Drinking Water Quality (32 - Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
01	pH @ 25 °C	*APHA 4500 H	-	8.07	6.5 - 8.5
02	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	323	< 1000
03	Total Hardness as CaCO ₃	ASTM D 1126	mg/L	104	< 500
04	Color	**HACH 8025	TCU	02	≤ 15
05	Turbidity	*APHA 2130	NTU	<1	≤ 5
06	Nitrite	**HACH 8507	mg/L	0.03	≤ 3
07	Nitrate (NO ₃)	**HACH 8039	mg/L	0.19	≤ 0.50
08	Taste	*APHA 2160	-	Tasteless	Non-Objectionable
09	Odor	*APHA 2150	-	Odorless	Non-Objectionable
10	Chloride (Cl)	*APHA 4500 Cl	mg/L	204	≤ 250
11	Fluoride	**HACH 8029	mg/L	0.11	≤ 1.5
12	Aluminum	*APHA 3111-D	mg/L	N.D.	≤ 0.2
13	Nickel	*APHA 3111-B	mg/L	N.D.	≤ 0.02
14	Lead (Pb)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
15	Barium (Ba)	**HACH 8014	mg/L	N.D.	0.7
16	Antimony (Sb)	*APHA 3111-B	mg/L	N.D.	≤ 0.005
17	Arsenic (As)	*APHA 3114-B	mg/L	N.D.	≤ 0.05
18	Boron (B)	**HACH 8015	mg/L	N.D.	0.3
19	Cadmium (Cd)	*APHA 3111-B	mg/L	N.D.	0.01
20	Chromium (Cr)	*APHA 3111-B	mg/L	N.D.	≤ 0.05
21	Selenium (Se)	*APHA 3114-B	mg/L	N.D.	0.01
22	Copper (Cu)	*APHA 3111-B	mg/L	0.0047	2
23	Cyanide (CN)	**HACH 8027	mg/L	N.D.	≤ 0.05

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Lab Report No. : 202306223-ABCC-DW
Invoice Bill No. : Inv-AGB-282



Page: 2 of 2
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com
Sample ID:	DW-202306223
Sample Collection Date:	12-June-2023
Sample Description:	Drinking Water (CAMP)
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	12-June-2023 to 16-June-2023
Test Description:	National Standards – Drinking Water Quality (32 – Parameters)

ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits
24	Mercury (Hg)	*APHA 3112-B	mg/L	N.D.	≤ 0.001
25	Manganese (Mn)	*APHA 3131-B	mg/L	N.D.	≤ 0.5
26	Zinc (Zn)	*APHA 3111-B	mg/L	N.D.	≤ 5.0
27	Residual Chlorine	**HACH 10069	mg/L	0.2	0.2 - 0.5
28	Phenolic Compounds as Phenols	ASTM-D-1783	mg/L	N.D.	-
29	Fecal Coliform	USEPA 1604	Count/100 ml	N.D.	-
30	Total Coliform	*APHA 922 B	Count/100 ml	N.D.	-
31	E-Coli	USEPA 1604	Count/100 ml	N.D.	-
32	Pesticides	USEPA-614.1	mg/L	N.D.	-

Note: Measurement of uncertainty, statement of conformity, warnings & interpretations will be provided on customer Demand.
Environmental Conditions at the time of Testing: Temperature: 25.2°C (±1.2°C) & Humidity: 43 % (± 1%)

*APHA Standard Methods for Examination of water & wastewater 19th Edition (2017).
**HACH 8025 (HACH Edition 10, 2014), HACH 8027 (HACH Edition 09, 2014), HACH 10069 (HACH Edition 11, 2014), HACH 8029 (HACH Edition 10, 2016), HACH 8013 (HACH Edition 08, 2014), HACH 8507 (HACH Edition 11, 2019), HACH 8039 (HACH Edition 10, 2015)

NEQS Limits = National Environmental Quality Standard (Reference: NEQS).
N.D. = Not Detected.


 Analyzed By (Assistant analyst)


 Reviewed By (Analyst)



 Approved By (Chief Analyst)

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Waste water Test Results



Lab Report No. : 202306221-ABCC-WW
Invoice Bill No. : Inv-AGB-282



Page: 1 of 2
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Sample ID:	WW-202306221
Sample Collection Date:	12-June-2023
Sample Description:	Wastewater
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	12-June-2023 to 17-June-2023
Test Description:	National Standards – Mention Below Testing of 30 Wastewater Parameters


ANALYTICAL TEST REPORT

Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	NEQS Limits		
					1	2	3
01	Temperature 40 °C	*APHA 2550	°C	29	≤ 3°C	≤ 3°C	≤ 3°C
02	pH	*APHA 4500 H-B	-	6.71	6-9	6-9	6-9
03	Sulphide	*APHA 4500-52-D	mg/L	<1	1.0	1.0	1.0
04	Biology Oxygen Demand (BOD) ₅	***HACH 10099	mg/L	75	80	250	80
05	Chemical Oxygen Demand (COD)	***HACH 8000	mg/L	147	150	400	400
06	Total Dissolved Solids (TDS)	*APHA 2540-C	mg/L	588	3500	3500	3500
07	Total Suspended Solids (TSS)	*APHA 2540-D	mg/L	154	200	400	200
08	Oil & Grease	ASTM D-3921	mg/L	02	10	10	10
09	Cadmium	*APHA 3111-B	mg/L	0.0064	0.1	0.1	0.1
10	Copper	*APHA 3111-B	mg/L	0.0126	1.0	1.0	1.0
11	Iron	*APHA 3111-B	mg/L	0.0115	8.0	8.0	8.0
12	Lead	*APHA 3111-B	mg/L	N.D.	0.5	0.5	0.5
13	Manganese	*APHA 3111-B	mg/L	N.D.	1.5	1.5	1.5
14	Mercury	*APHA 3112-B	mg/L	N.D.	0.01	0.01	0.01
15	Nickel	*APHA 3113-B	mg/L	N.D.	1.0	1.0	1.0
16	Selenium	*APHA 3114-B	mg/L	N.D.	0.5	0.5	0.5
17	Chromium	*APHA 3111-B	mg/L	N.D.	1.0	1.0	1.0
18	Zinc	*APHA 3113-B	mg/L	N.D.	5.0	5.0	5.0
19	Arsenic	*APHA 3114-B	mg/L	N.D.	1.0	1.0	1.0
20	Chlorine	***HACH 10069	mg/L	N.D.	1.0	1.0	1.0
21	Chloride	*APHA 4500 Cl-B	mg/L	364	1000	1000	**IC
22	Cyanide	***HACH 8027	mg/L	0.005	1.0	1.0	1.0

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Lab Report No. : 202306221-ABCC-WW
Invoice Bill No. : Inv-AG8-282



Page: 2 of 2
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Sample ID:	WW-202306221
Sample Collection Date:	12-June-2023
Sample Description:	Wastewater
Sample Type:	Liquid – Sample
Sample Collected / Submitted By:	Envi Tech AL
Date of Analysis:	12-June-2023 to 17-June-2023
Test Description:	National Standards – Mention Below Testing of 30 Wastewater Parameters

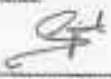
ANALYTICAL TEST REPORT


Sr. #	Parameters / Analytes Description	Methods	Unit	Test Results	SEQS Limits		
					1	2	3
23	Fluoride	***HACH 8029	mg/L	0.54	10	10	10
24	Ammonia	***HACH 8038	mg/L	0.8	40	40	40
25	Sulphate	***HACH 8051	mg/L	103	600	1000	**SC
26	An Ionic Detergent As MBAs	*APHA 5540 C	mg/L	02	20	20	20
27	Phenolic Compounds (as Phenol)	ASTM-D-1783	mg/L	N.D.	0.1	0.3	0.3
28	Boron	***HACH 8015	mg/L	N.D.	6.0	6.0	6.0
29	Barium	***HACH 8014	mg/L	N.D.	1.5	1.5	1.5
30	Silver	*APHA 3111-B	mg/L	N.D.	1.0	1.0	1.0


Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer Demand.
Environmental Conditions at the time of Testing: Temperature: 34.4 °C (± 1.2°C) & Humidity: 60 % (±2)

*APHA Standard Methods for Examination of water & wastewater 23rd Edition (2002).
***HACH 8000 (HACH Edition 11, 2012), HACH 8001 (HACH Edition 11, 2012), HACH 8008 (HACH Edition 1, 2013), HACH 8027 (HACH Edition 09, 2014), HACH 10069 (HACH Edition 11, 2014), HACH 8039 (HACH Edition 10, 2016), HACH 8038 (HACH Edition 6, 2017), HACH 8034 (HACH Edition 09, 2014), HACH 8015 (HACH Edition 09, 2014)

NOQS Limits = National Environmental Quality Standard (Reference: NEQS).
1=NEQS for Municipal & Liquid Industrial Effluent into inland waters.
2= NEQS for Municipal & Liquid Industrial Effluent into Sewage Treatment.
3=NEQS for Municipal & Liquid Industrial Effluent into Sea.
** Discharge Concentration at or below Sea Concentration (SC).
N.D. = Not Detected.





 Analyzed By (Assistant analyst)


 Reviewed By (Analyst)


 Approved By (Chief Analyst)

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Head Office: 30, First Floor, Street 11, Bank 1, Bahawalpur, Sindh - 63010, Pakistan (011-222941)

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Vehicular Emission Test Results



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Lab Report No. : 202306232-ABCC-VE
Inv-AGB-282

Invoice Bill No. : _____



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com
Test ID:	VE-202306232
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Dumper-HINO-MD # FWIK00356-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0317	5
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	82	85

Note: Measurement of analytes, statement of conformity, actions & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected



Analysed By (Assistant analyst)



Reviewed By (Analyst)




Approved By (Chief Analyst)

Disclaimer:

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Lab Report No. : 202306233-ABCC-VI

Invoice Bill No. : Inv-AGB-282



Page: 1 of 1

Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com			
Test ID:	VE-202306233			
Test Performed Date:	12-June-2023			
Test Type & Location:	Vehicular Emission (Truck-HINO-No. Plate TLH-464-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0433	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	79	83

Note: Measurement of accuracy, statement of conformity, notices & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

Disclaimer

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Lab Report No. : 202306234-ABCC-VE
Invoice Bill No. : Inv-AGS-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc795@gmail.com

Test ID:	VE-202306234
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Dumper-HINO-MO # FS2KKB-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sl. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0333	6
02	Smoke Ringelmann Scale	-	03	2
03	Noise	dB	80	85

Note: Measurement of uncertainty, statement of conformity, opinion & interpretation will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306235-ABCC-VE

Invoice Bill No. : Inv-AGB-282



Page: 1 of 1

Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306235
Test Performed Date:	20-June-2023
Test Type & Location:	Vehicular Emission (Dumper-MD # ER1&ZH-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sl. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0312	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	79	85

Note: Measurement of analytes, statement of conformity, opinions & interpretations will be provided as customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306236-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306236
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Dumper-MD # QAE-4787 -Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0304	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	75	85

Note: Measurement of accuracy, standard of conformity, precision & interferences will be provided on customer demand.

NEQS Units = National Environmental Quality Standard (Reference: NEQS)
N.D., = Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306237-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com			
Test ID:	VE-202306237			
Test Performed Date:	12-June-2023			
Test Type & Location:	Vehicular Emission (Tractor-KOMATSU-GD31-GD33H-No. Plate 3061-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0401	6
02	Smoke Ringelmann Scale	-	01	3
03	Noise	dB	82	85

Note: Measurement of uncertainty, statement of conformity, validity & interpretations will be provided on customer Demand.

NEQS Units = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202306238-ABCC-VE

Invoice Bill No. : Inv-AGB-282



Page: 1 of 1

Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306238
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Grader-CATERPILLAR-No. Plate S-E1M09029-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0402	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	82	85

Note: Measurement of accuracy, statement of conformity, opinion & interpretations will be provided on customer Demand.

NEQS Units = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected


Analyzed By (Assistant analyst)


Reviewed By (Analyst)


Approved By (Chief Analyst)

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Lab Report No. : 202306239-ABCC-VE
Invoice Bill No. : INV-AG8-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306239
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Roller-DYNAPAC-MD #: CA-25PD-Diesel)
Test Performed By:	Envi Tech Al
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0413	E
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	83	85

Note: Measurement of accuracy, statement of conformity, opinion & interpretation will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected.

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202306240-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306240
Test Performed Date:	17-June-2023
Test Type & Location:	Vehicular Emission (Water Tanker-Super HINO-MD # FF-174LA-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0287	6
02	Smoke Ringelmann Scale	-	01	3
03	Noise	dB	79	85

Note: Measurement of compliance, statement of conformity, opinion & interpretation will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306242-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 10-June-2023

Report to: M/s. Agha Brothers Construction Company
Khuzdar, Balochistan, Pakistan.

Attention: Mr. Shahzad Ali Channa
Email: aghabrotherscc799@gmail.com

Test ID: VE-202306242
Test Performed Date: 12-June-2023
Test Type & Location: Vehicular Emission (Mixing Machine-No. Plate: TWE-881-Diesel)
Test Performed By: Envi Tech AL
Test Description: Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0312	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	83	85

Note: Measurement of accuracy, statement of conformity, opinion & interpretation will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected


 Analyzed By (Assistant analyst)


 Reviewed By (Analyst)


 Approved By (Chief Analyst)

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Lab Report No. : 202306243-ABCC-VE
Invoice Bill No. : Inv-AGB-262



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306243
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (M/si Tractor-MD #: MF-240-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0387	5
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	82	85

Note: Measurement of uncertainty, statement of conformity, opinion & interpretation will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analysed By (Assistant Analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306244-ABCC-VE
Invoice Bill No. : Inv-AGB-232



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306244
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (CATERPILLAR-MD #: 5-08K-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0412	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	30	85

Note: Measurement of viscosity, statement of authenticity, precision & interpretation will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

Disclaimer:

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Lab Report No. : 202306245-ABCC-VE
Invoice Bill No. : Inv-AG8-282



Page: 1 of 1
Reporting Date: 10-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306245
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (CATERPILLAR-MD # 950-B-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0351	6
02	Smoke Ringelmann Scale	-	01	3
03	Noise	dB	81	85

Note: Measurement of uncertainties, statement of conformity, options & interpretations will be provided for customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected


Analyzed By (Assistant analyst)


Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306245-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306245
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Vigo-MD # 2006-Diesel)
Test Performed By:	Envi Tech Al.
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0249	6
02	Smoke Ringieram Scale	-	01	2
03	Noise	dB	80	85

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306247-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306247
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Pick up- MD # 2005-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0299	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	83	85

Note: Measurement of accuracy, statement of conformity, opinion & interpretation will be provided on customer demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306248-ABCC-VE
Invoice Bill No. : Inv-AG6-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306248
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Dumper-HINO-MD # EN25B-Diesel)
Test Performed By:	Envi Tech Al.
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0405	6
02	Smoke Ringelmann Scale	-	1	2
03	Noise	dB	83	85

Note: Measurement of uncertainties, statement of conformity, opinion & Interpretation will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

Disclaimer:

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Lab Report No. : 202306249-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com			
Test ID:	VE-202306249			
Test Performed Date:	12-June-2023			
Test Type & Location:	Vehicular Emission (Dumper-MD # REBSA7-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0381	6
02	Smoke Ringelmann Scale	-	03	4
03	Noise	dB	83	85

Note: Measurements of pollutants, statement of conformity, options & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

Disclaimer:

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Lab Report No. : 202306250-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306250
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Roller-DYNAPAC-MD # NBSK17-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.321	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	81	85

Note: Measurement of uncertainty, statement of conformity, opinion & interpretation will be provided as customer demand.

NEQS Limits - National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306251-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.			
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com			
Test ID:	VE-202306251			
Test Performed Date:	11-June-2023			
Test Type & Location:	Vehicular Emission (Excavator-HYUNDAI 450-No. Plate: IM 66-Diesel)			
Test Performed By:	Envi Tech AL			
Test Description:	Vehicular Emission (As per NEQS)			
Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0318	8
02	Smoke Ringelmann Scale	-	03	2
03	Noise	dB	82	85

Note: Measurement of uncertainty, statement of conformity, opinions & interpretations will be provided as customer Demand.

NEQS Limits – National Environmental Quality Standard (Reference: NEQS)
N.D. – Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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Lab Report No. : 202306252-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306252
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Tanker-MD # RQoA1-Diesel)
Test Performed By:	Envi Tech Al
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0271	E
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	81	85

Note: Measurement of accuracy, correctness of conformity, opinions & interpretations will be provided on customer Demand.

NEQS Limits = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Lab Report No. : 202306253-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306253
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Excavator-HITACHI-200-MD # Y1 12072-Diesel)
Test Performed By:	Envi Tech Al
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0305	E
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	82	85

Note: Measurement of uncertainties, statement of conformity, opinions & Interpretations will be provided on customer Demand

NEQS-Limits = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analysed By (Assistant analyst)

Reviewed By (Analyst)



Approved By (Chief Analyst)

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ENVI TECH AL

We strive for Pragmatic approach to achieve quality Excellence



Lab Report No. : 202306254-ABCC-VE
Invoice Bill No. : Inv-AGB-282



Page: 1 of 1
Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com
Test ID:	VE-202306254
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Excavator-130-velvo-MD # PR2U11V7-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0307	6
02	Smoke Ringelmann Scale	-	01	2
03	Noise	dB	83	85

Note: Measurement of uncertainty, comparison of conformity, opinions & interpretations will be provided on customer demand.

NEQS Units = National Environmental Quality Standard (Reference: NEQS)
N.D. = Not Detected


 Analyzed By (Assistant analyst)


 Reviewed By (Analyst)



 Approved By (Chief Analyst)

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Lab Office: 455, West Gate, 2nd Floor, Main Market, Bahadurabad, Faisalabad, Punjab, Pakistan. (P.O. Box 2000)

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Lab Report No. : 202306255-ABCC-VE

Invoice Bill No. : Inv-AGB-282



Page: 1 of 1

Reporting Date: 19-June-2023

Report to:	M/s. Agha Brothers Construction Company Khuzdar, Balochistan, Pakistan.
Attention:	Mr. Shahzad Ali Channa Email: aghabrotherscc799@gmail.com

Test ID:	VE-202306255
Test Performed Date:	12-June-2023
Test Type & Location:	Vehicular Emission (Dumper-HINO-MD # UM-197LS-Diesel)
Test Performed By:	Envi Tech AL
Test Description:	Vehicular Emission (As per NEQS)

Sr. #	Parameters / Analytes Description	Unit	Test Result	NEQS- Control Limits
01	Carbon Monoxide	%	0.0342	6
02	Smoke Ringelmann Scale	-	01	3
03	Noise	dB	83	85

Note: Measurement of precision, retention of conformity, suitably & interpretations will be provided on customer Demand.

NEQS Units = National Environmental Quality Standard (Reference: NEQS)

N.D. = Not Detected

Analyzed By (Assistant analyst)

Reviewed By (Analyst)

Approved By (Chief Analyst)

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Pictorial Evidences of Environmental Monitoring are as follows



Ambient air monitoring on construction site



Gaseous emission monitoring on construction site



Ambient air monitoring on camp site



Gaseous emission monitoring on construction site

Environmental Monitoring on Water Resources Building

ENVIRONMENTAL TEST
REPORT

Of

**BALUCHISTAN WATER RESOURCES DEVELOPMENT
SECTOR (BWRDSP) IRRIGATION DEPARTMENT**

For The Month (MARCH-2023)

Consultant: NESPAK, RHC, EGC (JV)

Contractor M/S Noor-Ul-Haq & Brothers

PREPARED BY:



**SUSTAINABLE
ENVIRONMENTAL
SERVICES** | **SES**

SUSTAINABLE ENVIRONMENTAL SERVICES (SES)

Plot # 46, Block Commercial, Sector 31/D, P & T Society, Korangi, Karachi. Tel:

+92(0)346-2225261. Email: info@sespakiab.com

Ambient Air Quality on WRB

Sustainable Environmental Services SES

Analysis Report Ref # SES/ENV/Mar/23/1651/1481-A Date: 20-March-2023

Description:

Job Location:	Camp and Project site	Testing Instrument	24 Hours Air Monitoring Station
Job Performed By:	Mr. Mohsin	Job Date :	13-March-2023 to 14-March-2023
Monitoring Duration:	10:00AM to 09:00AM (24 Hrs.)		
Project name :	Construction of Water Resource Building at Queta (NCB-05)		
Client :	Balochistan Water Resources Development Sector (HWRDSP) ADB Loan no. 3700-PAK Irrigation Department Balochistan		
Consultants Name:	NESPAK, BHC, EGC (JV)		
Contractor Name :	M/S HAJI ABDUL HAMUD BANGULZAI (JV) MAKDAR SHAHWANI & BROTHERS		

Air Quality Test Report

Parameters	Temp	NO	NO _x	SO _x	CO	PM ₁₀	PM _{2.5}	SPM	O ₃
NFQS & BEQS Limit	-	24 hrs. (40 µg/m ³)	24 hrs. (80 µg/m ³)	24 hrs. (120 µg/m ³)	88 hrs. (1 µg/m ³)	24 hrs. (150 µg/m ³)	24 hrs. (150 µg/m ³)	24 hrs. (500 µg/m ³)	81 hr. (150 µg/m ³)
WHO Limit	-	-	24 hrs. (25 µg/m ³)	24 hrs. (40 µg/m ³)	88 hrs. (1 µg/m ³)	24 hrs. (150 µg/m ³)	24 hrs. (10 µg/m ³)	-	Peak Season (60 µg/m ³)
Time	Results								
10:00AM	8°C	09.43	21.17	2.03	-	29.4	46.2	106.5	03
11:00AM	9°C	10.28	21.56	1.28	0.027	23.5	41.6	116.3	-
12:00PM	11°C	08.34	24.63	1.39	-	25.6	44.8	113.4	-
01:00PM	11°C	07.51	22.52	1.84	-	27.8	40.9	105.9	-
02:00PM	12°C	06.67	26.74	2.02	0.026	28.9	41.7	117.5	-
03:00PM	12°C	08.35	24.35	1.46	-	26.2	42.5	110.3	-
04:00PM	13°C	08.51	21.58	1.34	-	28.1	41.3	104.8	-
05:00PM	13°C	09.27	22.74	1.96	0.026	20.5	47.2	116.7	-
06:00PM	12°C	07.38	24.64	1.65	-	27.8	45.8	121.9	-
07:00PM	11°C	09.29	23.86	4.26	-	23.9	40.9	116.8	-
08:00PM	11°C	06.33	22.71	1.31	0.024	24.7	41.1	124.6	-
09:00PM	10°C	05.63	20.53	1.16	-	22.1	44.9	120.5	-
10:00PM	09°C	06.92	19.78	1.06	-	27.6	40.2	118.9	-
11:00PM	08 °C	03.01	18.26	1.28	0.022	29.5	39.6	112.2	-
12:00AM	08 °C	04.37	18.66	1.52	-	26.2	38.9	105.8	-
01:00AM	05°C	04.29	17.26	1.18	-	24.8	37.3	96.2	-
02:00AM	05 °C	04.32	17.08	1.27	0.023	21.8	35.4	99.1	-
03:00AM	04°C	04.22	17.65	1.02	-	20.9	33.7	98.0	-
04:00AM	03°C	03.91	16.37	0.96	-	21.7	31.5	95.9	-
05:00AM	03°C	03.98	16.58	1.13	0.021	19.2	30.8	93.5	-
06:00AM	02°C	04.16	17.39	1.65	-	18.3	31.9	87.9	-
07:00AM	02°C	04.38	17.44	1.29	-	19.6	29.5	92.2	-
08:00AM	03°C	03.01	18.28	1.21	0.019	20.8	33.4	93.4	-
09:00AM	04 °C	07.19	20.84	1.32	-	23.5	36.5	95.0	-
AVERAGE	7.7 °C	6.65	20.70	1.38	0.023	24.23	39.2	107.8	03



New Head Office: Plot No SC-46 Block Commercial Sector 31/D P&T Society Kacangi, Karachi.
 Mide: +92(0)246-2225261, 0333-2699016 Tel # 02135121125 E-mail: info@sespaklab.com Web: www.sespaklab.com



Sustainable Environmental Services **SES**

Analysis Report

Ref.# SES/ENV/Mar/23/1651/1481-B

Date: 28-March-2023

Description:

Job Location:	Camp and Project site.	Testing Instrument	24 Hours Air Monitoring Station
Job Performed By:	Mr. Mohsin	Job Date :	13-March-2023 to 14-March-2023
Monitoring Duration:	10:00AM to 09:00AM (24 Hrs.)		
Project Name :	Construction of Water Resource Building at Quetta (NCB-05)		
Client :	Balochistan Water Resources Development Sector (BWRDSP) ADB Loan no. 3700-PAK Irrigation Department Balochistan		
Consultants Name:	NESPAK, RHC, EOC (JV)		
Contractor Name :	HAJI ABDUL HAMEED BANGULZAI (JV) MAKBAR SHAHWANI & BROTHERS		

Ambient Air Quality Monitoring

Sr.	Measuring Parameters	Unit	WHO Limit	NEQS & BEQS Limits	Average Test Result	Remarks
1.	Oxide Of Nitrogen as (NO)	µg/m ³	-	40 (24 hrs.)	6.65	WL
2.	Oxide Of Nitrogen as (NO ₂)	µg/m ³	25(24 hrs.)	80 (24 hrs.)	20.70	WL
3.	Sulphur Dioxide (SO ₂)	µg/m ³	40(24 hrs.)	120 (24 hrs.)	1.38	WL
4.	Carbon Monoxide (CO)	mg/m ³	4(24 hrs.)	5 (08 hrs.)	0.023	WL
5.	Particulate Matter (PM 2.5)	µg/m ³	150(24 hrs.)	35 (24 hrs.)	24.23	WL
6.	Particulate Matter (PM 10)	µg/m ³	450(24 hrs.)	150 (24 hrs.)	39.2	WL
7.	SPM	µg/m ³	-	500 (24 hrs.)	107.8	WL
8.	Ozone (O ₃)	µg/m ³	60/week (Season)	110 (01 hr.)	03	WL

Note:

BEQS-Baluchistan Environmental Quality Standards

The instruments used were dully calibrated.

The measurements were carried out on client's request.

The client is responsible for lawful usage of reported data in future.

This report is not valid for Court evidence/ Judicial knowledge

The measurement results based on the time of monitoring

WL- Within Limit

Field Analyst



Chief Chemist

Kashif Ahmed



New Head Office: Plot No SC-46 Block Commercial Sector 31/D P&T Society Kotungi, Karachi.
Mob: +92(0)346-2225261, 0333-2699016 Tel # 02135121125 E-mail: info@sespaklab.com Web: www.sespaklab.com

Meteorological Data Analysis on WRB

Sustainable Environmental Services | SES

Analysis Report

Ref # SES/ENV/Mar/23/1651/1481-C

Date:29-March-2023

Description

Job Location	Camp and Project site	Testing Instrument	Metrological Equipment's
Job Performed By:	Mr. Mohsin	Job Location :	13-March-2023 to 14-March-2023
Monitoring Duration:	10:00AM to 09:00AM (24 Hrs.)		
Project Name:	Construction of Water Resources Building at Quetta (MCB-05)		
Client:	Balochistan Water Resources Development Sector (BWRD/DP) ADB Loan no. 3700-PAK Irrigation Department Balochistan		
Consultants:	NRSPAK, RHC, EGC (JV)		
Contractor Name:	HAJI ABDUL HAMEED BANGULZAI (JV) M.AKBAR SHAHWANI & BROTHERS		

METROLOGICAL DATA

S.No	TIME Hours	Wind Direction	Wind Velocity m/sec	Humidity %	Pressure mm of Hg
1	10:00AM	NW	1.42	93	759
2	11:00AM	NW	1.46	94	748
3	12:00PM	W	1.43	91	762
4	01:00PM	W	1.42	93	769
5	02:00PM	SW	1.38	88	741
6	03:00PM	SW	1.36	88	793
7	04:00PM	NS	1.34	89	747
8	05:00PM	S	1.82	81	738
9	06:00PM	S	1.80	83	752
10	07:00PM	NS	1.76	88	767
11	08:00PM	NS	1.74	86	764
12	09:00PM	Nil	2.47	85	761
13	10:00PM	W	2.63	88	759
14	11:00PM	W	2.42	91	763
15	12:00AM	SW	4.16	87	760
16	01:00AM	SW	4.77	92	758
17	02:00AM	N	4.16	94	762
18	03:00AM	N	5.61	91	770
19	04:00AM	NW	5.19	89	768
20	05:00AM	NW	5.75	92	765
21	06:00AM	NW	6.52	90	761
22	07:00AM	NW	4.65	91	760
23	08:00AM	W	3.27	90	764
24	09:00AM	W	2.39	93	765



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Noise Test on WRB

Sustainable Environmental Services **SES**

Analysis Report

Ref.# SES/ENV/Mar/23/1451/1481-D

Date: 20-March-2023

Description:

Job Location:	Camp and Project site	Testing Instrument:	Noise Meter
Job Performed By:	Mr. Muhan	Job Location :	13-March-2023 to 14-March-2023
Monitoring Duration:	10:00AM to 09:00AM (24 Hrs.)		
Project Name:	Construction of Water Resource Building at Quetta (NCB-05)		
Client:	Balochistan Water Resources Development Sector (BWWDSP) ADB Loan no. 3700-PAK Irrigation Department Balochistan		
Consultants:	NESPAK, RHC, EGC (JV)		
Contractor Name:	HAJI ABDUL HAMEED BANGULZAI (JV) M.AKBAR SHAIWANI & BROTHERS		

Noise Test Report

S. No	Measuring Parameter	Testing Instrument	WHO Limit	NEQS & BEQS Limits	TIME	Results
01	Noise Level	Noise Meter	65 dB(A) (Day time)	75 dB(A) (Day time)	10:00AM	58.4
02					11:00AM	56.6
03					12:00PM	57.5
04					01:00PM	55.1
05					02:00PM	53.4
06					03:00PM	56.7
07					04:00PM	55.2
08					05:00PM	54.8
09					06:00PM	56.3
10					07:00PM	55.4
11					08:00PM	53.9
12					09:00PM	52.7
13			10:00PM	51.8		
14			11:00PM	51.2		
15			12:00AM	50.3		
16			01:00AM	50.2		
17			02:00AM	47.8		
18			03:00AM	45.4		
19			04:00AM	43.9		
20			05:00AM	44.5		
21			06:00AM	46.8		
22			07:00AM	48.2		
23			08:00AM	49.6		
24			09:00AM	51.4		
Average Result						51.9



New Head Office: Plot No 5C-46 Block Commercial Sector 31/D PAF Society Korangi, Karachi.
 Mob: +92(0)346-2225261/0333-2699016 Tel # 02135121125 E-mail: info@sespkids.com Web: www.sespkids.com

Waste Water Analysis on WRB



Sustainable Environmental Services | SES

Analysis Report Ref: SES/ENV/Mar/23/1681/1481-E Date: 23-March-2023

Description:

Quantity of sample	1.0 Liter	Sampling Methodology	Grab
Analysis Type	Chemical Analysis	Sampling Location	Construction Remains (Building Queue)
Project Name:	Construction of Water Resource Building in Quetta (NCD-01 Sampling Date: 13-March-2023)		
Client:	Balochistan Water Resources Development Sector (BW/RDS)		
Consultant:	WSPAR, HHC, EPC (JV)		
Contractor Name:	HAJI ABDUL ISMAEEL BACHUS ZAI (JV) M AKBAR SHAHWANI & BROTHERS		

Waste Water Test Result

S.No	Measuring Parameter	Units	Testing Method	SIQS Limits	WHO Limits	ISQS Limits	Results
1	Temperature AT 40 °C	°C	By Calibrated Thermometer	40 ± 0.5 °C	40 ± 0.5 °C	40 ± 0.5 °C	31.2
2	pH at 25 °C	pH	APHA D-100	6.5-8.5	6.5-8.5	6.5-8.5	7.42
3	Biological Oxygen Demand	BOD ₅ (mg/L)	APHA 5210	30	30	30	44.3
4	Chemical Oxygen Demand	COO(mg/L)	APHA D-1212	120	120	120	120
5	Total Dissolved Solids	TDS(mg/L)	APHA 2540 C	5000	5000	1000	2310
6	Total Suspended Solids	TSS(mg/L)	APHA 1540 D	300	300	300	113
7	Oil & Grease	Oil(mg/L)	APHA 8281	10	10	10	0.09
8	Chloride	Cl ⁻ (mg/L)	APHA 8103	1000	1000	1000	332
9	Hardness (calcium)	Ca(mg/L)	APHA D-1781	0.3	0.3	0.3	ND
10	Fluoride	F ⁻ (mg/L)	APHA 8100 F ⁻	10	10	10	3.6
11	Ammonia Nitrogen	NH ₄ ⁺ (mg/L)	APHA D-4175	10	10	10	3.4
12	Nitrate	NO ₃ ⁻ (mg/L)	APHA 8100 N ₃	45	45	45	ND
13	Sulfate	SO ₄ ²⁻ (mg/L)	APHA 8100 S ₄	10	10	10	0.36
14	Arsonic	As(mg/L)	APHA D-1424	40	40	40	15.2
15	Cadmium	CD ²⁺ (mg/L)	APHA 8100 V	0.1	0.1	0.1	0.03
16	Chromate (Trivalent)	Cr ³⁺ (mg/L)	APHA 3004 Cr	1.0	1.0	1.0	ND
17	Chromate (Hexavalent)	Cr ⁶⁺ (mg/L)	APHA 3005 Cr	1.0	1.0	1.0	0.029
18	Lead	Pb ²⁺ (mg/L)	APHA 8100 Pb	0.5	0.5	0.5	0.3
19	Mercury	Hg ²⁺ (mg/L)	EA Method	0.01	0.01	0.01	ND
20	Nickel	Ni ²⁺ (mg/L)	HACH Dimethylglyoxime Method	1.0	1.0	1.0	ND
21	Silver	Ag(mg/L)	APHA 8100 Ag	1.0	1.0	1.0	ND
22	Zinc	Zn(mg/L)	HACH Zincon Method	1.0	1.0	1.0	0.3
23	Total Iron	Fe ²⁺ (mg/L)	APHA 8100 Fe	0.3	0.3	0.3	0.7
24	Manganese	Mn(mg/L)	APHA 8100 Mn	1.2	1.2	1.2	0.08
25	Boron	B(mg/L)	APHA 8100 B ₃	0.0	0.0	0.0	0.0
26	Sodium	Na(mg/L)	APHA 8100 Na ⁺	100	100	100	220
27	Ammonia	N(mg/L)	Potentiometric	1.0	1.0	1.0	ND
28	Copper	Co ²⁺ (mg/L)	HACH Bisphenolamine Method	1.0	1.0	1.0	0.04
29	Ultraviolet	UV(mg/L)	HACH DPD Method	1.0	1.0	1.0	ND
30	Aluminum	Al(mg/L)	HACH Electrodeless Copper B	1.2	1.2	1.2	ND
31	Total Ethylaluminum	(mg/L)	ED Method	2.0	2.0	2.0	0.16
32	Sulfur	S(mg/L)	APHA D-4182	1.5	1.5	1.5	0.12

Note:
 ISQS - Balochistan Environmental Quality Standard
 The measurements were duly calibrated.
 The measurements were carried out on client's request.
 The client is responsible for the full range of reported data.
 This report is not valid for Court evidence. Analyzed here.
 The measurement results based on the time of receipt.
 WL - Within Limit

Field Analyst:

M. Mubeen

Chief Chemist:



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Photographic Evidences of Environmental Monitoring on WRB**Picture Evidence**

Project name:	Construction of Water Resource Building at Quetta (NCB-05)
Client Name:	Balochistan Water Resources Development Sector (BWRDSP) ADB Loan no. 3700-PAK Irrigation Department Balochistan
Consultants Name:	NESPAK, RHC, EGC (JV)
Contractor Name :	M/S HAJI ABDUL HAMEED BANGULZAI (JV) MAKBAR SHAHWANI & BROTHE



Fig.1



Fig.2



Fig.3



Fig.4

Environmental Monitoring of Construction on Kili Sardar Akhtar

Air Quality Monitoring

Sustainable Environmental Services | SES

Analysis Report

Ref # SES/ENV/Mar/23/1640/1480-A

Date: 30-March-2023

Description:

Job Location:	Project and Camp site Baseline Monitoring	Testing Instrument	24 Hours Air Monitoring Station
Job Performed By:	Mr. Mohsin	Job Date :	11-March-2023 to 12-March-2023
Monitoring Duration:	09:00AM to 08:00AM (24 Hrs.)		
Project name :	Construction of Kili Sardar Akhtar (PIS) sub-project Zhab River Basin (NCB-06)		
Client name:	Balochistan Water Resources Development Sector (BWRDSP) ADD Lum no-3706-Pak Irrigation department Balochistan		
Consultants Name:	NESPAK, RHC, EGC (JV)		
Contractor Name :	M/s NOOR UL HAQ & BROTHERS		

Air Quality Test Report

Parameters	Temp	NO	NO ₂	SO ₂	CO	PM ₁₀	PM _{2.5}	SPM	Ch
NEQS & BEQS Limit	-	24 hrs. (40 µg/m ³)	24 hrs. (80 µg/m ³)	24 hrs. (120 µg/m ³)	88 hrs. (3 mg/m ³)	24 hrs. (35 µg/m ³)	24 hrs. (15 µg/m ³)	24 hrs. (200 µg/m ³)	80 hrs. (120 µg/m ³)
WHO Limit	-	-	24 hrs. (20 µg/m ³)	24 hrs. (40 µg/m ³)	88 hrs. (1 mg/m ³)	24 hrs. (15 µg/m ³)	24 hrs. (8 µg/m ³)	-	Peak season (100 µg/m ³)
Time	Results								
09:00AM	12 °C	14.62	33.52	4.02	-	23.2	80.2	131.2	06
10:00AM	12°C	13.36	32.53	5.26	0.062	26.3	42.2	152.1	-
11:00AM	13.3°C	16.33	33.20	5.32	-	33.6	96.2	163.2	-
12:00PM	13.2°C	16.32	33.23	6.32	-	27.2	88.2	166.2	-
01:00PM	14 °C	15.25	39.26	6.26	0.032	26.5	81.3	171.6	-
02:00PM	14 °C	15.05	38.38	6.29	-	25.3	94.6	180.9	-
03:00PM	14.8 °C	18.05	41.36	5.29	-	28.9	98.9	183.8	-
04:00PM	13°C	18.29	38.33	6.02	0.096	21.2	102.2	173.9	-
05:00PM	14°C	14.23	30.32	7.26	-	26.9	86.3	188.6	-
06:00PM	13°C	13.52	33.21	7.36	-	25.4	82.2	179.2	-
07:00PM	13.4°C	13.25	39.30	5.26	0.063	25.8	84.8	175.6	-
08:00PM	10°C	14.52	33.12	6.32	-	23.2	86.9	178.2	-
09:00PM	16 °C	15.33	29.32	4.62	-	29.2	84.5	181.2	-
10:00PM	13 °C	13.24	26.36	7.42	0.062	25.6	83.5	173.4	-
11:00PM	13 °C	14.56	25.23	4.95	-	22.3	80.5	185.3	-
12:00AM	14 °C	13.22	26.32	3.23	-	29.3	74.9	182.4	-
01:00AM	14.4 °C	8.29	23.32	2.23	0.033	21.2	73.2	161.3	-
02:00AM	13.2°C	7.65	26.23	2.20	-	22.3	87.9	181.9	-
03:00AM	13.2 °C	4.53	23.23	2.18	-	28.2	64.2	154.8	-
04:00AM	3.3°C	5.60	26.36	1.78	0.024	28.9	62.5	165.2	-
05:00AM	12 °C	9.33	26.23	1.98	-	27.3	51.1	147.3	-
06:00AM	12 °C	8.32	24.23	3.35	-	26.8	56.3	144.7	-
07:00AM	12.9 °C	9.54	26.32	2.96	0.053	23.4	69.8	149.5	-
08:00AM	11 °C	12.59	23.62	3.32	-	23.2	64.3	146.6	-
AVERAGE	13.9 °C	13.00	31.03	4.55	0.046	25.73	81.47	164.11	06



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Analysis Report

Ref # SES/ENV/Mar/23/1649/1480-B

Date: 20-March-2023

Description:

Job Location:	Project and Camp site Baseline Monitoring	Testing Instrument	24 Hours Air Monitoring Station
Job Performed By:	Mr. Mohsin	Job Date :	11-March-2023 to 12-March-2023
Monitoring Duration:	09:00AM to 08:00AM (24 Hrs.)		
Project Name:	Construction of Kili Sardar Akhtar (PIS) sub-project Zhob River Basin (NCB-06)		
Client Name:	Balochistan Water Resources Development Sector (BWRDSP) ABD Loan no-3700-Pak Irrigation department Balochistan		
Consultants Name:	NESPAC, RHC, EOC (JV)		
Contractor Name :	M/s NOOR UL HAQ & BROTHERS		

Ambient Air Quality Monitoring

Sr.	Measuring Parameters	Unit	WHO Limit	NEQS & BEQS Limits	Average Test Result	Remarks
1.	Oxide Of Nitrogen as (NO)	µg/m ³	-	40 (24 hrs.)	13.00	WL
2.	Oxide Of Nitrogen as (NO ₂)	µg/m ³	25(24 hrs.)	80 (24 hrs.)	31.03	WL
3.	Sulphur Dioxide (SO ₂)	µg/m ³	40(24 hrs.)	120 (24 hrs.)	4.55	WL
4.	Carbon Monoxide (CO)	mg/m ³	4(24 hrs.)	5 (08 hrs.)	0.046	WL
5.	Particulate Matter (PM 2.5)	µg/m ³	15(24 hrs.)	35 (24 hrs.)	25.73	WL
6.	Particulate Matter (PM 10)	µg/m ³	45(24 hrs.)	150 (24 hrs.)	81.47	WL
7.	SPM	µg/m ³	-	500 (24 hrs.)	164.11	WL
8.	Ozone (O ₃)	µg/m ³	50(week average)	130 (01 hr.)	06	WL

Note:

BEQS – Baluchistan Environmental Quality Standards

The instruments used were duly calibrated.

The measurements were carried out on client's request.

The client is responsible for lawful usage of reported data in future.

This report is not valid for Court evidence/ Judicial knowledge

The measurement results based on the time of monitoring

WL – Within Limit

Field Analyst:



Chief Chemist:



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Meteorological Data

Sustainable Environmental Services **SES**

Analysis Report Ref # SES/ENV/Mar/23/1649/1480-C Date: 20-March-2023

Description			
Job Location:	Project and camp site Baseline Monitoring	Testing Instrument:	Metrological Equipment's
Job Performed By:	Mr. Muhsin	Job Date :	11-March-2023 to 12-March-2023
Monitoring Duration:	09:00AM to 08:00AM (24 Hrs.)		
Project Name :	Construction of Kibi Sardar Akhtar (PIS) sub-project Zhub River Basin (NCB-06)		
Client Name:	Balochistan Water Resources Development Sector (BWRDSP) ABD Loan no-3700-Pak Irrigation department Balochistan		
Consultants Name:	NESPAK, RHC, EOC (JV)		
Contractor Name :	M/A NOOR UL HAQ & BROTHERS		

METROLOGICAL DATA

S.No	TIME Hours	Wind Direction	Wind Velocity m/sec	Humidity %	Pressure mm of Hg
1	09:00AM	SW	1.37	91	755
2	10:00AM	N	1.36	93	732
3	11:00AM	N	1.33	96	762
4	12:00PM	SW	1.34	99	723
5	01:00PM	N	1.32	93	723
6	02:00PM	SW	1.34	85	720
7	03:00PM	NS	1.21	91	732
8	04:00PM	NS	1.99	83	727
9	05:00PM	NS	1.21	86	762
10	06:00PM	N	1.34	80	732
11	07:00PM	N	1.26	83	742
12	08:00PM	NS	2.46	84	732
13	09:00PM	N	2.34	89	787
14	10:00PM	NS	2.61	84	792
15	11:00PM	N	3.09	88	732
16	12:00AM	N	4.32	89	732
17	01:00AM	NS	4.20	84	774
18	02:00AM	N	5.08	86	773
19	03:00AM	NS	5.32	83	779
20	04:00AM	NW	5.62	84	760
21	05:00AM	NW	5.56	90	768
22	06:00AM	NW	4.24	93	767
23	07:00AM	N	3.62	94	766
24	08:00AM	N	2.32	99	764



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Noise Test Reports

Sustainable Environmental Services | SES

Analysis Report

Ref.# SES/ENV/Mon/23/1649/1480-D

Date:20-March-2023

Description:

Job Location:	Project and Camp Site Baseline Monitoring.	Testing Instrument:	Noise Meter
Job Performed By:	Mr. Mohsin	Job Date :	11-March-2023 to 12-March-2023
Monitoring Duration:	09:00AM to 08:00AM (24 Hrs.)		
Project Name:	Construction of Kili Sardar Akhtar (PIS) sub-project Zhob River Basin (NCB-06)		
Client Name:	Balochistan Water Resources Development Sector (BWRDSP) ABD Loan no-3700-Pak Irrigation department Balochistan		
Consultants Name:	NESPAK, RHC, EGC (JV)		
Contractor Name :	M/s NOOR UL HAQ & BROTHERS.		

Noise Test Report

S. No	Measuring Parameter	Testing Instrument	WHO Limit	NEQS & BEQS Limits	TIME	Results		
01	Noise Level	Noise Meter	65 dB(A) (Day time)	75 dB(A) (Day time)	09:00AM	61.3		
02					10:00AM	64.5		
03					11:00AM	63.2		
04					12:00PM	61.3		
05					01:00PM	63.9		
06					02:00PM	64.9		
07					03:00PM	62.9		
08					04:00PM	63.5		
09					05:00PM	64.6		
10					06:00PM	63.3		
11					07:00PM	63.5		
12					08:00PM	58.2		
13			55 dB(A) (Night time)	65 dB(A) (Night time)	09:00PM	51.2		
14					10:00PM	58.2		
15					11:00PM	53.2		
16					12:00AM	54.5		
17					01:00AM	53.2		
18					02:00AM	51.3		
19					03:00AM	48.7		
20					04:00AM	46.4		
21					05:00AM	49.2		
22					06:00AM	42.3		
23					65 dB(A) (Day time)	75 dB(A) (Day time)	07:00AM	53.2
24					65 dB(A) (Day time)	75 dB(A) (Day time)	08:00AM	56.2
Average Results						57.1		



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Drinking Water Quality Test Results



Sustainable Environmental Services | **SES**

Analysis Report

Ref # SES/ENV/Mon/23/049/1480-E

Date: 28-March-2023

Description:

Quantity of sample	1.0 Liter	Sampling Methodology	Grab	Job Date	11-March-2023
Analysis Type	Chemical Analysis	Sampling Location	K.H. Akhtar Bacter Point		
Project Name :	Construction of K.H. Saifullah Akhtar (PIS) sub-project Zinda River Basin (MCH-06)				
Client Name:	Balochistan Water Resources Development Sector (BWRD/DP)				
Consultant name:	NESPAE, LLC, DDC (JV)				
Contractor Name :	M/s. NISOR ILL HAQ & BROTHERS				

Drinking Water Test Report

S#	Parameters	Units	Testing Method	NEQS Limits	WHO Limits	BEQS Limits	Result	Remarks
01	Total Bacteria Count	TBC (count/ml)	Total Viable Count	-	-	-	22	-
02	Total Coliforms	TC (count/ml)	APHA 922 B	0-100/ml	0-100/ml	0-100/ml	ND	WL
03	F-Coli	FC (count/ml)	Total Viable Count	0-100/ml	0-100/ml	0-100/ml	ND	WL
04	Focal Coli	FC (count/ml)	APHA 922 B	0-100/ml	0-100/ml	0-100/ml	ND	WL
05	Coliforms	NTU	SIAC 11 Turbidity meter	<=	<11	<11	<= 0.02	WL
06	Taste	Taste	Sensory Evaluation	0-5 (Non Obj)	0-5 (Non Obj)	0-5 (Non Obj)	Non obj	WL
07	Odor	Odor	Sensory Evaluation	0-5 (Non Obj)	0-5 (Non Obj)	0-5 (Non Obj)	Non obj	WL
08	Color	TCU	P-C method	<= 15 TCU	<= 15 TCU	<= 15 TCU	<= 1	WL
09	Phenolic Compounds	As Phenol (mg/L)	AETM D-1701	-	-	-	ND	WL
10	Residual Chlorine	Cl ₂ (mg/L)	SIAC 11 Method #167	0.2-0.5	-	0.2-0.5	0.25	WL
11	pH @ 25 °C	pH	AETM D-1291	6.5 to 8.5	6.5 to 8.5	6.5 to 8.5	8.22	WL
12	Total Hardness	TDH (mg/L)	APHA 2546-C	<= 1000	<= 1000	<= 1000	231	WL
13	Total Dissolved Solids	As CaCO ₃ (mg/L)	APHA 2546-C	<= 500	-	<= 500	76	WL
14	Fluoride	F ⁻ (mg/L)	APHA 4500-F ⁻	<= 1.5	1.5	<= 1.5	0.24	WL
15	Chloride	Cl ⁻ (mg/L)	APHA 4500-Cl ⁻	<= 250	250	<= 250	169	WL
16	Cyanide	CN ⁻ (mg/L)	HA (MEROM)-4402	0.05	0.07	<= 0.05	ND	WL
17	Sulfate	SO ₄ ²⁻ (mg/L)	BARCLAY 4500-SO ₄ ²⁻	<= 500	500	<= 500	0.28	WL
18	Nitrate	NO ₃ ⁻ (mg/L)	APHA 4500-NO ₃ ⁻ B	<= 100 mg/L	5	<= 100 mg/L	0.07	WL
19	Ammonia	NH ₄ ⁺ (mg/L)	AETM D-1041	<= 0.50	0.50	<= 0.50	ND	WL
20	Arsenic	As (mg/L)	AETM D-417	0.05	0.2	0.2	0.01	WL
21	Barium	As (mg/L)	AETM D-1971	0.05	0.05	<= 0.05	ND	WL
22	Boron	B (mg/L)	AETM D-2082	0.5	0.5	0.5	ND	WL
23	Bromine	Br (mg/L)	AETM D-4321	0.7	0.5	0.7	0.003	WL
24	Chlorine Total	Cl (mg/L)	AETM D-1041	<= 500	0.01	<= 0.01	ND	WL
25	Copper	Cu (mg/L)	AETM D-1088	1	1	1	<= 0.02	WL
26	Cadmium	Ca (mg/L)	AETM D-1077	0.01	0.003	0.01	ND	WL
27	Lead	Pb (mg/L)	AETM D-1019	<= 0.01	0.01	<= 0.01	ND	WL
28	Manganese	Mn (mg/L)	AETM D-408	<= 0.3	0.3	<= 0.3	ND	WL
29	Mercury	Hg (mg/L)	AETM D-1223	<= 0.001	0.001	<= 0.001	ND	WL
30	Nickel	Ni (mg/L)	AETM D-1060	<= 0.02	0.02	<= 0.02	ND	WL
31	Selenium	Se (mg/L)	AETM D-1028	0.01	0.01	0.01	ND	WL
32	Zinc	Zn (mg/L)	AETM D-1001	5	5	5	0.04	WL

Notes:

ISO 9001:2015 Environmental Quality Standard
 The measurements and tests were duly calibrated.
 The measurements were carried out on client's request.
 The client is responsible for timely receipt of required data for this report to be valid for Court evidence. Analytical knowledge.
 The measurement results based on the time of sampling.
 WL - Whole Limit

Field Analyst: 



Chief Chemist: 



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Pictorial Evidences**Picture Evidence**

Project name:	Construction of Kili Sardar Akhtar (PIS) sub-project Zhob River Basin (NCB-06)
Client Name:	Balochistan Water Resources Development Sector (BWRDSP) ABD Loan no-3700-Pak Irrigation department Balochistan
Consultants Name:	NESPAK, RHC, EGC (JV)
Contractor Name :	M/s NOOR UL HAQ & BROTHERS



Annexure X: Balochistan Environmental Quality Standards**Balochistan Quality Standards for Noise 2020**

In dB(A) Leq(Time weighted average of the level of sound in decibel on scale A which is relatable to human hearing)

S No	Area Type	Day time	Night time	Day time	Night time
1	Residential Area (A)	65	50	55	45
2	Commercial Area (B)	70	60	65	55
3	Industrial Area (C)	80	75	75	65
4	Silent Zone (D)	55	45	50	45

Explanations

1. Day time hours are marked as to be from 6:00am to 10:00pm.
2. Night Time hours are marked as to be from 10:00 pm to 6:00 am.
3. Silence Zone: the following shall be the generally declared Silent Zone/areas. The DG EPA upon his own or by a written request can declared any other area as Silent Area
 - a. An area comprising not less than 150 meters around a hospital, an educational institution and courts of law
4. Areas which cannot be distinguished on the basis of being Commercial, Industrial or Residential and which are the mixed of them, such areas can be declared all as Residential Areas and Noise protocols of Residential Area shall apply therein.

Balochistan Environmental Quality Standards for Ambient Air

Pollutant	Time-Weighted Average	Concentration in Ambient Air	Method of Measurement
Sulfur Dioxide (SO ₂)	Annual average*	80 ug/m ³	Ultraviolet Fluorescence method
	24 hours**	120 ug/m ³	
Oxides of Nitrogen as (NO)	Annual average*	40 ug/m ³	Gas Phase Chemiluminescence
	24 hours**	40 ug/m ³	
Oxides of Nitrogen as (NO ₂)	Annual average*	40 ug/m ³	Gas Phase Chemiluminescence
	24 hours**	80 ug/m ³	
Ozone (O ₃)	1 hour	130 ug/m ³	Non Dispersive UV absorption method
Suspended particulate matter (SPM)	Annual average*	360 ug/m ³	High Volume sampling (average flow rate not less than 1.1 m ³ /min)
	24 hours**	500 ug/m ³	
Respirable particulate matter PM 10	Annual average*	120 ug/m ³	Preferably B-Ray absorption method
	24 hours**	150 ug/m ³	
Respirable particulate matter PM 2.5	Annual average*	15 ug/m ³	Preferably B-Ray absorption method
	24 hours**	35 ug/m ³	

Pollutant	Time-Weighted Average	Concentration in Ambient Air	Method of Measurement
	1 hour	15 ug/m ³	
Lead (pb)	Annual average*	1 ug/m ³	ASS method after sampling using EPM 2000 or equivalent Filter Paper
	24 hours**	1.5 ug/m ³	
Carbon Monoxide (CO)	8 hours**	5 mg/m ³	Non Dispersive Infra Red (NDIR) method
	1 hour	10 mg/m ³	

* Annual arithmetic mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval.

** 24 hourly 18 hourly Values should be met 98% of the in a year. 2% of the time, it may exceed but not on two consecutive days.

Balochistan Environmental Quality Standards for Drinking Water

Properties/Parameters	Standard Values	WHO Standards	Remarks
All water intended for drinking (E. Coli or Thermo-tolerant Coliform bacteria)	Must not be detectable in any 100 ml sample	Must not be in any 100 ml	Most Asian countries also follow WHO standards
Treated water entering the distribution system (E. Coli or thermo tolerant coliform and total coliform bacteria)	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	Most Asian countries also follow WHO standards
Treated water in the distribution system (E. Coli or thermo tolerant coliform and total coliform bacteria)	Must not be detectable in any 100 ml sample in case of large supplies, where sufficient samples are examined, must not be present in 95% of the samples taken throughout any 12- month period.	Must not be detectable in any 100 ml sample in case of large supplies, where sufficient samples are examined, must not be present in 95% of the samples taken throughout any 12- month period.	Most Asian countries also follow WHO standards
Colour	<15 TCU	<15 TCU	
Taste	Non objectionable/ Acceptable	Non objectionable/ Acceptable	
Turbidity	Non objectionable/ Acceptable	Non objectionable/ Acceptable	
	<15 NTU	<15 NTU	

Properties/Parameters	Standard Values	WHO Standards	Remarks
Total hardness as CaCO ₃	<500 mg/l	—	
TDS	<1000	< 1000	
pH	6.5—8.5	6.5—8.5	
Essential Inorganic	Mg/Liter	Mg/liter	
Aluminum (Al)mg/l	< 0.2	0.2	
Antimony (Sb)	< 0.005(P)	0.02	
Arsenic (As)	< 0.05(P)	0.01	Standard for Pakistan similar to most Asian developing countries
Barium (Ba)	0.7	0.7	
Boron (B)	0.3	0.3	
Cadmium (Cd)	0.01	0.003	Standard for Pakistan similar to most Asian developing countries
Chloride(Cl)	< 250	250	
Chromium(Cr)	< 0.05	0.05	
Copper(Cu)	2	2	
Toxic Inorganic	Mg/l	Mg/l	
Cyanide (CN)	< 0.05	0.07	Standard for Pakistan similar to most Asian developing countries

Fluoride(F)	< 1.5	1.5	
Lead(Pb)	< 0.05	0.01	Standard for Pakistan similar to most Asian developing countries
Manganese(Mn)	< 0.5	0.5	
Mercury(Hg)	< 0.001	0.001	
Nickel(Ni)	< 0.05	0.02	
Nitrate(NO ₃ ⁻)	< 50	50	
Nitrate(NO ₂ ⁻)	< 3 (P)	3	
Selenium(Se)	0.01 (P)	0.01	

Properties/Parameters	Standard Values	WHO Standards	Remarks
Residual Chlorine	0.2-0.5 at consumer end 0.5-1.5 at source		
Zinc (Zn)	5.0	3	Standard for Pakistan similar to most Asian developing countries
Organic			
Pesticides Mg/l			PSQCA, No. 4639-2004, page No. 1 Table No 3 Item No 20-18 may be consulted
Phenolic Compounds (as Phenols) mg/l			
Poly nuclear aromatic hydrocarbons (as PAHs) g/l		0.01 (By GC/MS Method)	
Alpha Emitters bq/L or pCi	0.1	0.1	
Beta emitters	1	1	

- *Indicates priority health related inorganic constituents, which need regular monitoring.
- ** PSQCA: Pakistan Standards Quality Control Authority.