Environmental and Social Monitoring Report

Project Number: 44914-014
Quarterly Report (January-March 2020)
March 2020

Pakistan: Patrind Hydropower Project

Prepared by Star Hydro Power Limited for the Asian Development Bank.

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STAR HYDRO
K-water Global

147 MW PATRIND HYDROPOWER PROJECT

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Contents

List of Abbreviations

AJK	Azad Jammu & Kashmir
CEO	Chief Executive Officer
CLO	Community liaison officer
CSR	Corporate Social Responsibility
E-flow	Environmental flow
ERP	Emergency Response Plan
ESMP	Environmental & social management plan
HSE	Health safety & environment
KPK	Khyber Pakhtunkhwa
NEQS	National environmental quality standards
OHSP	Occupational health & safety plan
POPL	Patrind Operation & Maintenance Private Limited
PHSP	Public health & safety plan
PTW	Permit to work

1. Health, Safety and Environmental (HSE) Performance Indicators

Table 1: HSE Performance Indicators

Indicators	Data (Reporting Period)	Data (From November 08, 2017 to March 31, 2020)
Plant Safe Man-Hours Plant Safe-Days	40,832 (0.040832) 91	369,840 (0.36984) 880
Lost Time Injury (LTI)	0	00
HSE / Environmental Accidents	0	00
Fire	0	00
Spills	0	00
HSE Audits / Inspections	05	37
HSE Training Sessions	07	28
Emergency Drills (Evacuation, Firefighting & First Aid)	00	04
PTW Issued	07	161
Community Consultations	08	51

2. Compliance NOC Conditions issued by EPA AJK

Table 2: Compliance Status of NOC Conditions

EPA Condition No	EPA NOC Conditions	Compliance Status	Compliance Action/Notes
I.	Compliance to National Environmental Quality Standards (NEQSs)	Yes	Compliance with NEQSs is being monitored internally and through third-party.
II.	2 Cumecs water as E-flow, downstream during the operational phase	Yes	2.2 Cumecs environmental flow is being released from the weir. Please refer to **Annex-1** for E-flow data. Data shows compliance with the NOC condition.
III.	Metering arrangement to ensure and verify the release of approved E-flow downstream	Yes	The metering arrangement is in place. Sensors are installed on five (05) different locations. Data is being recorded on a real-time basis on a **10**-minute interval. Data is being shared with lenders and EPA-AJK on quarterly basis through quarterly ESMRs. Please refer to **Annex-2** for calibration certificates, sensors locations and evidences of manual / visual flow monitoring
IV.	Strictly adhered to mitigation measures, as suggested in the Operational	Yes	Quarterly compliance reports verify adherence to the mitigation measures.

EPA Condition No	EPA NOC Conditions	Compliance Status	Compliance Action/Notes
	Environmental Management Plan (OEMP)		
V.	Environmental Management & Monitoring unit headed by an Environmental Monitoring Expert	Yes	Qualified and competent HSE team has been formulated which consists of HSE Manager, Environmentalist, HSE Officer and two Community Liaison Officers in the O&M team. Qualified and competent Senior Manager-E&S from SHPL is also monitoring the compliance from the SHPL side.
VI.	Carry out Fish Study through certified Fish Expert/Firm throughout the operational period of the project	Yes	The fish studies are being conducted every quarter and reports are being submitted. Due to Covid-19 pandemic situation, there was complete lockdown in the country. Therefore, fish study was not conducted in the reporting quarter.
VII.	Environmental Audit through 3rd party consultant after every 05 years during the Operational Phase of the Project	Yes	The requirement will be effective after November 2022 and ~~W~~will be complied when required. Still, the operation is in its third year. Before conducting the audit, audit terms of reference (ToR) will be prepared and shared with lenders.
VIII.	Plantation (of indigenous species) activity, in consultation with Forest Department, Govt. of AJ&K, both at the Weir & Powerhouse	Yes	Annual plantation campaign is an activity which has been carried out since the start of project. Only indigenous species are being planted. Campaigns are conducted under the supervision of third-party expert. During reporting period, plantation campaign was conducted. A total of 2,230 plants were planted at powerhouse site. All the plants planted were indigenous and native. The succession rate was approx..80 percent. The plant species are recommended by the vegetation expert as per the characteristic of the species on the following basis: Robena (Robena pseudo acacia): A fast-growing plant species to cover the area quickly. It also enriches the soil fertility through its character of nitrogen-fixing. Ailanthus (Ailanthus anus): A fast-growing species and survives under harsh conditions as well Walnut (Juglans regia): Deep-rooted species to hold the soil firmly and

EPA Condition No	EPA NOC Conditions	Compliance Status	Compliance Action/Notes
			control the erosion. Willow (Salix alba): Moisture lover plant and gets established where no other species survive. Phagwa (Ficus palmate): It is an excellent soil binder with a well-developed root system Anji: This is a fruit-bearing plant with a deep root system and holds the soil firmly. Please refer to the **Annex-3 (Updated)** for plantation report include botanical names of the plants with the area of plantation and selected species. During the reporting quarter bio-engineering works were also conducted in coordination with third-party consultant. During the stabilization works dibbling, sowing, plantation, soft gabion, check dam and gabion wall techniques were used on the site for land stabilization. Please refer to the **Annex-4** for the report.
IX.	Continuous monitoring & submission of quarterly compliance report	Yes	Quarterly compliance reports are being prepared and submitted.
X.	Adequate arrangements for addressing public grievances	Yes	Grievance redressal procedure is in place. The grievance redressal committee (GRC) has been formulated and functional. Three (03) complaint boxes have been installed at powerhouse area and two (02) complaint boxes have been installed at weir site area. Further two (02) complaint registers have been placed at powerhouse area and one (01) complaint register has been placed at the weir site area. Community Liaison Officers (CLOs) have also been deputed on powerhouse and weir site areas. No complaint was received in the reporting period.
XI.	Findings of third-party monitoring shall be shared with AJK- EPA	Yes	Third party monitoring i.e. fish, vegetation, landslide, water quality and air quality is being conducted on quarterly basis. The results / measurements of the reports from the third party are being shared with AJK-EPA and lenders. The ESCR referred in the comments is a different report which has already been submitted to EPA-AJK in March 2019 and no comments further

EPA Condition No	EPA NOC Conditions	Compliance Status	Compliance Action/Notes
			comments received.
XII.	Arrangements in-place for the execution of CSR plan	Yes	CSR procedure is in place. Based on the CSR procedure, annual CSR plan is developed and implemented. Annual CSR plan is developed and finalized in consultation with local communities and based on the needs of local communities. General areas of focus are education, health, livelihood, living conditions, water, and cultural, etc. The O&M operator develops its annual CSR plan each year in the month of March after consultations with local communities. However, this year CSR plan was not developed in the reporting period due to Covid-19 pandemic situation. Tentatively the CSR budget of O&M Operator for year 2020 may be approximately USD 4,000-5,000. However, SHPL has its separate budget for CSR and for this year i.e. 2020 the approx. figure is 50,000 USD
XIII.	Efficient Occupation Health & Safety Plan	Yes	Occupation health and safety plan is in place. The plan has been developed based on the findings of risk assessment. The plan has been proved effective as the operations are smooth and safe. As the plan is live document it will be updated when required.
XIV.	Local Employment	Yes	Hiring is being done keeping the locals on priority. Currently, the total staff is 73, out of which 66% from AJK, 18% from KPK and 16% from other parts of Pakistan. Total 10 persons from the affected villages have been employed in the plant operational phase out of which 06 household affected have been employed by the O&M operators. Please refer to the **Annex-5** for details regarding the local employment. This annexure depicts information about (10) local people employed and effected households employed in the company as regular and permanent staff. The annex also shows the levels

EPA Condition No	EPA NOC Conditions	Compliance Status	Compliance Action/Notes
			and designations at which these local people are working in the company. In short, local people are working from junior to senior roles including drivers, sub-technicians, technicians, operators, officers, assistant managers, and managers etc. Currently, no female staff is employed. However, there is no gender discrimination during job advertising and hiring process. Please refer to the **Annex-5** for photo of job advertisement. In addition, 12 unskilled and 14 security staff are also working, all of them are locals. These 12 unskilled staff are daily labors and while the security staff belongs to third-party security company and Police. ~~t~~There is no restriction on female employment however, the local communities did not show any interest in hiring of female CLO.
XV.	Liable for the correctness and validity of the information provided in EMP	Yes	Agreed.
XVI.	Facilitate EPA team for any visit for inspection/monitoring, etc.	Yes	The Company will always facilitate all the stakeholders including EPA for site visits.

3. Compliance with Environmental and Social Management Plan (ESMP)

Table 3: Compliance Status of ESMP

ESMP Reference #	ESMP Requirement	Compliance Status	Compliance Action/Notes
Section 6.1	Quarterly Fish and Fauna assessment (Kunhar River)	Yes	Please refer to **Row VI of Table 2, Section 2**.
	Bi-Annual drinking & waste Water Quality	Yes	Bi-Annual drinking and waste water analysis will be conducted in next reporting period.
	Quarterly Flora / vegetation monitoring	Yes	Due to Covid-19 pandemic situation, there was complete lockdown in the country. Therefore, vegetation monitoring study was not conducted in the reporting quarter.
	Annual Landslides monitoring	Yes	Annual landslide and catchment study

			will be conducted by the end of this year.
	Quarterly noise monitoring and noise impact management	Yes	Noise monitoring is being done monthly and data is being maintained. Monitoring locations include process area (Basement 1, 2 & 3), office building (Ground floor and first floor) and Alda village (village area close to the powerhouse). This monitoring is being done internally by the HSE team. Turbine units are installed at Basement areas 1, 2 & 3. The noise level exceeds in the area depending on the unit operation. Keeping in view the noise level, necessary instructions are communicated to the staff working in that area and proper PPEs are ensured. Noise level in rest of the areas is within the limits. Please refer to **Annex-6** for the noise monitoring reports. Ear-plugs have already been provided to all staff. Ear-muffs have also been provided to the staff working in the basement areas. For vibration, phase-wise installation of anti-vibration mates will be done. Meetings with various vendors on anti-vibration mates have been conducted. Once the samples are received, these will be shared and discussed with the Management for approval.
	Environmentally-friendly disposal of solid waste	Yes	Waste generated on both sites is being disposed of in an environmentally friendly manner through a third-party waste contractor. Please refer to **Annex-7** waste transfer notes. During the reporting quarter 03 tons of non-hazardous waste was generated. Out of which 60 KG was recycled and remaining was disposed off by the approved waste contractor.
	Development and implementation of CSR Plan and procedure /Community Development Programs	Yes	Please refer to **Row XII of Table 2, Section 2** and **Section 6**.
	Labors / Employees management as per applicable regulations and standards.	Yes	Labors / Employees are being managed as per applicable regulations and standards. An internal grievance redressal mechanism is also in place. Internal

			GRC has been formed and the complaint box has been installed. No internal complaints were received in the reporting period.
	Workers/Staff Health & Safety as per applicable regulations and standards	Yes	Please refer to **Row XIII of Table 2, Section 2**.
	Grievances from communities and any affected people Grievances from civil society organizations Grievances from labor/employees	Yes	For the external grievance redressal mechanism, please refer to **Row X of Table 2, Section 2**. An internal grievance redressal mechanism is also in place. Internal GRC has been formed and the complaint box has been installed. No internal complaints were received in the reporting period.

4. Compliance with Operational Requirements of EIA

(Environmental Monitoring and Management Plan during Operations Phase)

Table 4: Compliance Status of EMP of EIA Addendum

EIA Addendum Reference #	Impacts	EMP Requirement	Monitoring Frequency	Compliance Status	Compliance Action/Notes
Table: 6.4	Water Impoundment	Water Elevation Level Incoming/outgoing flow	Monthly	Yes	Water impoundment is being monitored via sensors. Every ten-minute data is being uploaded on the system. Sensors are being calibrated annually through third-party experts while all the sensors are being inspected/ checked visually by maintenance team on monthly basis. For details on sensors, please refer to the **Annex-2**.
	Environmental Flow	Water flowing down-stream in Kunhar river	Monthly	Yes	Please refer to **Row II of Table 2, Section 2**.
	Aquatic Fauna	Fish, upstream-downstream and in the pond	Quarterly	Yes	Please refer to **Row VI of Table 2, Section 2**.
	De-sanding	Accumulation of silt and de-siltation process	_	Yes	Monthly bathymetric surveys are being conducted to check the level of silt / sand in the reservoir.

5. Compliance Actions against other HSE Plans

Table 5: Compliance Actions against other HSE Plans

S. N	Plan	Compliance Actions in the Reporting Period
1	OHS Plan	• Permit to work system (PTW) is in place and during the reporting quarter 07 permits were issued. • Except near-misses, data on all other indicators are given in section 1 of the report. Near-misses, UA & UA reporting program will be launched in third-quarter and data on these indicators will also be included in section 1 of the report accordingly. • Total 07 training sessions were conducted in the reporting quarter. Training topics included ESMP, firefighting, defensive driving, work-at-height, waste management, welding & cutting and awareness session on COVID-19 • A total of five (05) HSE inspections were conducted in the reporting period. Overall HSE compliance was satisfactory and no major HSE issues were recorded • Implementation of lockout-tagout procedures (LOTO) • Monthly Fire extinguishers inspections carried out and discharged cylinders were replaced. ➢ During the reporting quarter Three (03) monthly noise monitoring surveys were conducted by HSE in power complex and nearby community. The noise level was found above the NEQS in process area (at turbine units' areas) while noise level remained within NEQS in other areas. All staff working in the process area have been provided with necessary PPEs (ear-muffs). Increase in noise level depends on unit operation and variation in process parameters / conditions. As per the monitoring results given in the report, noise levels are within the NEQS level • Atmospheric testing in confined spaces • Risk assessments and job safety analysis • Implementation of PPE policy and procurement of required PPEs • Office and accommodation electric systems safety inspection is also part of HSE inspection. HSE inspection finings / outcomes also cover electrical related findings, if observed. Further, maintenance department conducts daily, weekly,

S. N	Plan	Compliance Actions in the Reporting Period
		quarterly and annual inspection particularly of process / plant electric systems / installations of to ensure that there are no trouble-shooting or to rectify if there are any trouble-shooting. Results of these inspection are given in monthly and quarterly O&M reports. • In first quarter of 2019, comprehensive community trainings and consultation plan was prepared which includes trainings on all major topics. One session on ESMP at powerhouse site and One on public health & safety plan at weir site was conducted. Other trainings of the plan were discontinued due to Covid-10 pandemic for staff heath protection and safety as the Covid-19 cases are increasing day by day in Muzaffarabad, Abbottabad and surrounding areas. As far the simulation, it is still under consideration by Management.
2	Traffic Management Plan (TMP)	• Defensive driving training of all drivers • Installations of warning signboards like speed limits, overtaking restriction etc. • Prohibition on use of short-cuts and unsafe routes • Installation of reverse alarm in all vehicles • Regular vehicles inspection • Regular vehicles maintenance
3	Annual CSR Plan	• CSR Plan for the year 2020 and its budget will be finalized by K-water Head Office. • -Tentatively the CSR budget of O&M Operator for year 2020 may be approximately USD 4,000-5,000. However, SHPL has its separate budget for CSR and for this year i.e. 2020 the approx. figure is 50,000 USD
4	Waste Management plan	• Segregation of wastes being generated • During the reporting quarter 03 tons of non-hazardous waste was generated. Out of which 60 KG was recycled and remaining was disposed of by the approved waste contractor. • Placement of colored waste bins • Collection, transportation, recycling and disposal of wastes by company hired waste contractor • Data management of waste consignment notes being provided by company hired waste contractor • Waste management monitoring by HSE team
5	Public Health & Safety Plan	• Deputation of security / watch guards in weir downstream • ——Continuous monitoring of seismic movements at weir sites by maintenance team (Accelerometer helps

S. N	Plan	Compliance Actions in the Reporting Period
		to grasp the magnitude of the earthquake that occurred near the dam and monitors the safety of the dam. At Weir site, three (03) seismic Accelerometers are installed at three locations as follows: ➢ Accelerator 01 Elevation: 742 masl , Location: Weir Gallery ➢ Accelerator 02 Elevation: 765 masl , Location: Weir Crest ➢ Accelerator 03 Elevation: 769 masl , Location: Weir Right Side ➢ Data Recorder: In control room Monitoring of accelerometer is being carried out every week. From the date of operations, only 02 events recorded by the accelerometer. Both the events were within the safety limits. If any events occur, detail inspection is carried out to ensure the Dam safety. • Regular community consultations and meetings • Continuous liaison with communities by CLOs • Compliance with local norms • Slopes protection measures through third-part experts • Access control to prevent communities from high risk areas • Management of public grievances • Vehicular operation and driver's management as per the TMP for public safety
6	Fisheries Management Plan (FMP)	• Regular interaction and coordination with fisheries departments of AJK & Mansehra (KPK) • Regular interaction and coordination with local fishery expert • Fish breeding grounds / sites were developed at three (03) locations on weir downstream after detailed survey conducted in last quarter through third party fish expert and representatives from fishery departments of AJK and KP. Contract of work was awarded to third-party fish expert. The work was carried out in coordination with fishery departments. Please refer to **Section 7** for further details.

6. Stakeholder Engagement and Corporate Social Responsibility (CSR)

- No grievance from the local communities was recorded (both at powerhouse and weir site areas) in the reporting period. However, the communities always demand for enhancement of CSR activities and prefer locals whenever a new vacancy is created,
- Following community awareness sessions were conducted in the reporting period:
  - ✓ One (01) session on ESMP: Powerhouse site
  - ✓ One (01) session on public health & safety plan: Weir downstream
  - ✓ Two (02) sessions on waste disposal and hygiene: Powerhouse site and weir upstream

- ✓ Four (04) sessions on Covid-19: Powerhouse site, weir upstream and downstream

- CLOs educated the local communities in local languages about ESMP and company public health & safety plan. They were briefed about components of these plans, requirements of the plans and roles of company and communities. Local communities requested CLOs to conduct such sessions more and regularly.
- Waste disposal and hygiene sessions were conducted on both sites. Communities were educated by CLOs about how to dispose of the wastes in an environmentally friendly manner. They were requested not to throw wastes in open and in rivers. Communities requested CLOs for provision and installation of waste bins in local communities. CLOs responded them that company may consider this in current year CSR plan.
- Further, four (04) sessions (02 at weir site area and 02 at powerhouse area) were conducted by CLOs on Covid-19. Awareness materials in local language were distributed among local communities. CLOs have been closely monitoring the situation in areas close to company premises and Muzaffarabad.
- Community training and consultation plan was made for the year 2020. Please refer to **Annex-8** for the Community training and consultation plan. Implementation of the plan was affected by lockdown imposed due Covid-19 pandemic situation.
- While during the lenders' last mission, it was discussed that female CLO will be hired and the matter will be discussed with the communities but the elders of the communities never responded on the query. This has been already communicated to the lenders that due to culture and norms of the project area, the females of the local communities do not go out for the jobs specially when they have travel to and meet the other community members.

7. Health, Safety and Environment (HSE)

- Compliance with HSE plans is being ensured for staff and public safety. Please refer above the **Section 05**.
- Except near-misses, data on all other indicators are given in section 1 of the report. Near-misses, UA & UA reporting program will be launched in third-quarter and data on these indicators will also be included in section 1 of the report accordingly.
- All the fire extinguishers of powerhouse were inspected. Discharged cylinders were replaced with new fire extinguishers.
- Three (03) monthly noise monitoring surveys were conducted by HSE in power complex and nearby community. The noise level was found above the NEQS in process area (at turbine units' areas) while noise level remained within NEQS in other areas. All staff working in the process area have been provided with necessary PPEs (ear-muffs). Increase in noise level depends on unit operation and variation in process parameters / conditions.

- Waste generated during operations at sites is being managed in accordance with environmental and waste management plans. Different color waste bins are placed for segregation of waste. Waste collection and transfer by the waste contractor is in accordance with environmental standards. During the quarter, 03 tons of non-hazardous waste was generated. Out of which 60 KG was recycled and remaining waste was taken by waste contractor to government approved waste disposal site. No hazardous waste generated during the reporting period.

- During reporting period, plantation campaign was conducted. A total of 2,230 plants were planted at powerhouse site. All the plants planted were indigenous and native. Details of plantation are given in **Annex-3**.
- Furthermore, additional 3,000 ornamental plants were also planted alongside the road going to Surge Shaft. Small green lawn was also developed at O&M building near staff car parking.
- During the reporting quarter bio-engineering works were conducted in coordination with third party consultant. During the stabilization work dibbling, sowing, soft gabion, check dam and gabion wall techniques were used on the site for land stabilization. Details of the bio-engineering works are given in **Annex-4**.
- HSE inspections and Audit plan was prepared for the year 2020. Please refer to **Annex-9** for HSE inspections and Audit plan.

- A total of five (05) HSE inspections were conducted in the reporting period. Overall HSE compliance was satisfactory and no major HSE issues were recorded. Some minor issues observed include:

Sr. No	Inspection	Issues observed	Actions Taken/Corrective Measures
1.	Electrical Inspection	Exposed conductor panel in O&M building	Exposed conductors were covered with proper insulation and damaged are replaced with the new one.
2.	Fire Extinguisher inspection	Empty fire extinguishers found at police check post at power house	Refilled fire extinguishers were placed with the empty one. Empty fire extinguishers were sent for the refill.
3.	Hygiene Inspection	Growing of weeds observed at weir site residency	Extra weeds were cut down by the civil department.
4.	Electrical	Some electrical cords found with damaged insulation at O&M building	Exposed conductors were covered with proper insulation and damaged are replaced with the new one.
5.	General Inspection	Unavailability of disinfectant walkthrough gates	Disinfectant walkthrough gates have been installed at both powerhouse and weir site at main entrance.

- HSE trainings plan has been prepared for the year 2020. Please refer to **Annex-10** for HSE trainings plan.

- Total seven (07) HSE training sessions were conducted in the reporting period. Training topics included ESMP, firefighting, defensive driving, work-at-height, waste management, welding & cutting and awareness session on COVID-19. Please refer to **Annex-11** for trainings attendance sheets (with training topic and names of participants)
- Office and accommodation electric systems safety inspection is also part of HSE inspection. HSE inspection finings / outcomes also cover electrical related findings, if observed. Further, maintenance department conducts daily, weekly, quarterly and annual inspection particularly of process / plant electric systems / installations of to ensure that there are no trouble-shooting or to rectify if there are any trouble-shooting. Results of these inspection are given in monthly and quarterly O&M reports.
- In view of prevailing Covid-19 pandemic situation, company developed comprehensive management and prevention plan in the reporting period. Please refer to **Annex-1~~1~~2** for the plan. HSE department visited government designated hospitals in Muzaffarabad and Islamabad. Awareness session was conducted for all staff. Awareness materials both in English and Urdu were distributed among all staff. Desk-to-desk awareness was also given to all staff. Body temperature measuring guns have been procured. Temperature and symptoms monitoring of staff is being conducted on daily basis. To reduce the staff numbers and ensure social distancing, staff has been divided into shifts to work safely. Amendments have been made in the plan. The Revised plan is under review by the Management. It will be submitted once finalized. Hand sanitizers have been placed at various locations. Work premises and surfaces are being disinfected regularly. Masks have been procured in sufficient quantities and are being issued to staff on need basis. Movement of staff has been restricted and being monitored.

8. Fish Studies &Management

Fisheries departments of AJK & KPK were consulted regarding establishment of fish breeding grounds. A team of experts including representatives from fisheries departments of AJK & KPK was deputed to select the possible fish breeding grounds on the basis of the following criteria:

i) Sufficient and suitable span of the river

ii) Texture of the soil on the sides of the river

iii) Availability of suitable base for the breeding of the fish

iv) Availability or easy provision of gravels and boulders for making pools with continuity of flow of water and possibility of easy up and downstream movement of the fish

v) Future easy maintenance is possible

vi) Restocking of fish is possible

vii) Abundant food particles area available

Total 12 possible points were studied out of which four were selected for developing breeding grounds for fish on the above-mentioned criteria. The four selected breeding ground seemed to be ideal as flood and low flow will not leave much effect on these sites unless there is an unprecedented heavy flood which may wash away the obstacle created for making breeding grounds.

Table showing Location of four selected points

S #	Name of Site	GPS reading	pH	DO	Temp. °C	TDS	Color
1	Boi	34°18′25″ N 73°26′49″ E	7.6	11.5	7.5	186	clear
2	Boi Domel	34°18′30″ N 73°28′46″ E	7.3	10	7.4	187	clear
3	Gotha bridge	34°19′06″ N 73°26′36″ E	7.3	11.2	8	190	clear
4	Barbein	34°19′29″ N 73°26′00″ E	7.3	11.2	7.3	186	clear

Out of four selected points, only three could be completed and fourth on hade to be left due to mobility restriction imposed by the Government due to Covid-19 virus. Now the river flow is high, the fourth breeding ground and stocking of fish fingerlings is planned to be done in the month of October-November 2020.

Accessibility problem

Accessibility problem is now resolved and limited access has been allowed subject to follow the SOPs of the movement. Fish study has been conducted during the month of June 2020 and breeding ground were monitored. Flow is high but these grounds are intact and fish catch from these points have shown encouraging results. Hopefully, these will play vital role in re-establishing the local fish population in the future. This is a slow growing fish and results could be visible after 2 years.

Monitoring Plan

Regular monitoring during the quarterly study of fish will indicate the results of these breeding grounds and any change in the structure may be rectified by minor repair and maintenance as per original Plan. Photographs are available in photographs section.

These points are shown on Google map below:

~~8.~~9. Livelihood Restoration Program

Apart from the employment to male members of Aps, the Company started an initiative to enhance the skills of female members of APs as part of the livelihood restoration strategy.

SHPL implemented programs related to stitching, hand and machine embroidery for females of not only the APS but for the entire villages of neighborhood. To start with, 6-months program in Alda village-AJK (powerhouse area) and 6- months program in Sarati village-KP (weir site) were completed in 2018.

During the year 2019, four programs (3 months each) were conducted in the local communities (AJK and KP). Deedal & Dalola villages in KP area and Patrind and Shoran villages in AJK were the villages where these programs were completed successfully.~~conducted.~~

This initiative has shown very positive results as the female members of the area are very much satisfied with the programs and suggested to continue the same in future as through this, they not only earn some money but they are now capable to stitch for their families which is a cost saving side of the program.

No new session could be started in the communities due to Covid-19 situation. The sessions will resume once the situation is stabilized.

9.10. Land Acquisition

Payment status for the land acquisition during the reporting period is presented below. According to the details provided by the revenue departments in AJK and KP 97% and 90% payment has been done in AJK and KP respectively.

Village	Area (Kanal)	Award Amount (PKR)	Disbursed (PKR)	%age	No. of Persons	Persons received payment
1. AJ&K						
A. Land/Property						
Powerhouse (Alda Village AJ&K)	81.80	92,479,824	89,397,034	96.67%	196	612
Head pond (Shoran Village AJ&K)	130.75	75,181,250	74,159,019	98.64%	611	202
Weir + Head pond (Patrind Village AJ&K)	341.10	204,037,798	203,670,449	99.82%		353
Forest land for Surge Tank (Alda village)	47.75					
B. Additional Land/Property						
Weir + Head pond (Patrind Village AJ&K)	3.70	2,127,500	1,955,000	91.89%	3	19
Weir + Head pond (Patrind Village AJ&K)	10.30	6,076,540	5,562,233	91.54%	3	19
Head pond (Shoran Village AJ&K)	4.66	6,054,188	6,054,181	100.00%	3	3
B. Trees						
Alda		1,815,089	1,804,468	99.41%		19
Alda		75,546	75,546	100.00%		3
Shoran		757,391	685,073	90.45%		58
Shoran		106,053	106,053	100.00%	1	1
Patrind		837,882	829,515	99.00%		32
Sub-Total	**620.06**	**389,549,061**	**384,298,571**	**97.04%**	**817**	**1,321**
2. KPK						
Land/Property/Trees						
Weir + Head pond (Sarati Village KPK)	188.70	128,557,081	114,613,320	89.15%	196	Detail Yet to receive
Head pond (Deedal Village KPK)	5.45	3,133,750	Under Acquisition Process		1	Under Acquisition Process
Head pond (Deedal Village KPK)	65.45	37,633,750			16	
Head pond (Dalola Village KPK)	1.40	805,000			1	
Head pond (Naroka Village KPK)	16.30	9,372,500			7	
Sub-Total	**277.30**	**179,502,081**	**114,613,320**	**89.15%**	**221**	**0**

11.Additional Land -Acquisition in KP

The status of additional land acquisition has not changed as there has been no progress shown by the revenue department regarding the acquisition process. The land is still in the possession of the owners and their property. ~~as t~~The acquisition process will only move forward once the Agreement U/S-41 of LAA 1894 is executed which was submitted to DC Abbottabad office on June 26, 2019 duly signed by the CEO of SHPL. Till date there has been no progress by the revenue department as the cabinet has to authorize the signatory on behalf of GoKP.

We can only share the timelines of sections under LAA-1894 when the Agreement under section-41 is executed which for now (due to pandemic) is clearly uncertain.

~~10.~~12. Photographs


Powerhouse Area Inspection


Fire Extinguishers Inspection


Landslide Stabilization Works


Waste Management


Water Quality Analysis


Session on Waste Disposal


Community Consultations


Powerhouse HSE Inspection


Awareness session on Fire Fighting


Awareness session on Work at height


Awareness session on Environmental & Social Management Plan


Meeting with Focal Person in CMH Hospital Muzaffarabad


Landslide Stabilization Work


Plantation at Powerhouse Site


Development of Green Lawn at Powerhouse Site near O&M Building

Construction of Fish Breeding Grounds at Weir Site

Annexures

Annex-1 Environmental Flow Data

Environmental Flow Data- 1st Quarter-2020			
January 2020		February 2020	March 2020
Day / Sensor	Water Flow (m3/s)	Water Flow (m3/s)	Water Flow (m3/s)
1 Day	2.28	2.25	2.54
2 Day	2.21	2.23	2.53
3 Day	2.24	2.36	2.51
4 Day	2.39	2.22	2.5
5 Day	2.56	2.2	2.61
6 Day	2.63	2.2	2.64
7 Day	2.44	2.29	2.78
8 Day	2.64	2.28	3.07
9 Day	2.49	2.36	2.85
10 Day	2.45	2.46	2.72
11 Day	2.36	2.22	2.68
12 Day	2.21	2.63	2.69
13 Day	2.62	2.22	2.64
14 Day	2.66	2.65	2.62
15 Day	2.55	2.32	2.61
16 Day	2.48	2.26	2.61
17 Day	2.47	2.3	2.6
18 Day	2.4	2.5	2.61
19 Day	2.48	2.5	2.6
20 Day	2.41	2.53	2.58
21 Day	2.42	2.5	2.61
22 Day	2.34	2.5	2.58
23 Day	2.25	2.48	2.57
24 Day	2.36	2.48	2.7
25 Day	2.39	2.44	2.67
26 Day	2.63	2.5	2.62
27 Day	2.24	2.5	2.91
28 Day	2.28	2.65	4.22
29 Day	2.23	2.56	9.4
30 Day	2.3		11.62
31 Day	2.32		15.74

Monthly Discharge Measurement at Bella (Boi)

Sr. No	Month	Flow Reading (Cumecs)	EPA Requirement (Cumecs)
1.	January, 2020	3.78	3.7
2.	February, 2020	3.74	3.7
3.	March, 2020	4.62	3.7

Note: Please refer below to the flow measurement methodology.

Methodology of Discharge Measurement at Bella (Boi)

Weir Downstream

Pakistan Patrind Hydropower Plant

Patrind O&M Private Limited

1. General

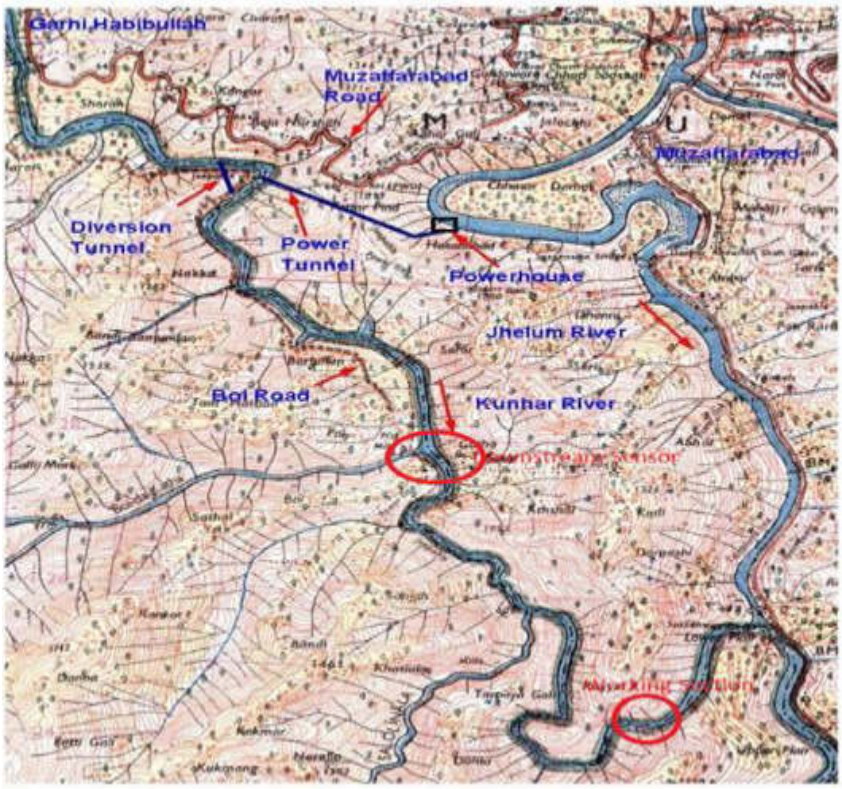
Measuring flow using digital current meter involves wading across a stream and taking velocity measurements at multiple places. Both velocity and water depth measurements are taken at the same time and place in multiple locations across the stream.

There are many types of current meters. The cup or propeller types determine flow velocity by the number of revolutions of the cups (or propeller) over a given period of time.

2. Purpose

The main purpose of discharge measurement at Bella (Boi) downstream of weir structure is to verify that enough environmental flow is being released by Patrind hydropower project.

3. Site selection



After visiting to several locations, one site i.e. Bella (Boi) has been selected for discharge measurement at weir downstream considering the following aspects.

- The site should be safely accessible and should be in a section of the stream that is free flowing.
- Stream should be straight enough to have uniform form.
- The flow should not be affected by tributaries or tides.

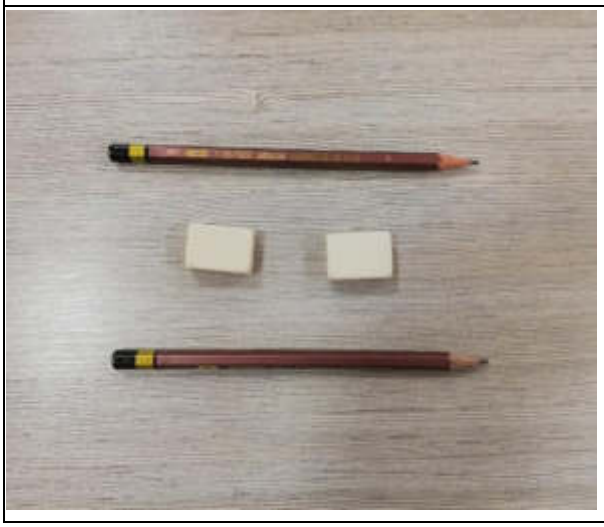
- There should not be any side channels so that all the water flows through the main channel.
- Areas, where there are large boulders, logs, or thick brush which can create eddies, slack water, turbulence or disturbed flow, should be avoided.

4. Equipment

- Measuring tape
- Digital Current Meter
- Top-setting rod (if available) or measuring stick
- Paper and pencil for record keeping
- Waders (waterproof garment)








5. Procedure

1) Tighten a measuring tape across the stream at right angles to the flow. It should be snug and not sag in the middle.
2) Measure the total stream width and record this measurement.
3) Divide the total stream width into equal segments. If the stream is less than 10 feet wide, use ½ foot intervals. For streams greater than 10 feet, use 1 foot or greater intervals.

(Note: The standard method is to divide the width by 20, however ½ foot or 1-foot intervals are sufficient for the purposes of this guide.)

4) Step out to the first measuring point and position the rod. Stand downstream from the measuring tape with the rod next to the tape. The rod should be held vertically, the meter should face upstream and you should be standing off to the side or behind the meter.
5) Record the distance to the bank. Measure total stream depth and record this depth. Multiply the total depth by 0.6 and set the propeller at this depth. (Note: 0.6 times the total depth is considered the point of average discharge in a spot that is less than 2 feet deep. If the depth is greater than 2 feet, two different velocity measurements are required one at 0.2 times the depth and one at 0.8 times the depth.) Read and record the velocity at this depth. (Note: If your meter is attached to a "top setting rod" the propeller can be easily set at this 0.6 depth without calculation by you. Directions on using a top setting rod should be provided by the manufacturer.)
6) Move to the next measuring point and repeat the process. (Note: The standard method is to obtain three velocity measurements at each point and average them.) Make sure to record the distance to the bank, the total stream depth and the velocity at the 0.6 depth for each point across the stream.

6. Calculation & Conclusion

For more accurate results, discharge measurement will be carried out for three times. Following steps will be taken to calculate the discharge at Bella (Boi) downstream of the weir structure.

- Calculate area for each section = width of section x depth of section
- Calculate flow for each section = area of section x velocity of section
- Determine total stream flow = Sum of the flow of each section

Annex-2 Sensors Location

Sensors Location, Photographs and Calibration Certificates

Gauging stations and the reason for selection is given in below table.

Location	Purpose	Installed gauges	Calibration
Kaghan station	Forecasting of floods	Rainfall, Water Level, Temperature	Calibration of each sensor will be on annual basis by third party
Talhata station	Forecasting of floods	Rain & Water Level	
Weir upstream	Monitoring Water flow into reservoir	Water Level	
Reservoir	Monitoring Water flow into reservoir	Rainfall, Water flow, Temp & Humidity, Wind Speed & Direction	
Weir downstream	environmental flow	Rain & Level and e-flow	

❑ Assumption Diagram

❑ Purpose

Kaghan measuring station will be located at 74km upstream side of the weir. The flood from the Kagan station comes into the weir site after 4.5 hours later. Therefore it will provide necessary precaution time against floods situation from upstream of Kunhar river.

❑ Measurement Item

(1) Water Level (Pressure Type)
(2) Rainfall
(3) Air Temperature

5. Talhata Measuring Station

❑ Assumption Diagram

❑Purpose

Talhata measuring station is located at 13km upstream side of the weir. More accurate water flow data can be achieved from this station.

❑Measurement Item

(1) Water Level (Pressure Type)
(2) Rainfall

6. Weir Upstream Measuring Station

❑ Assumption Diagram

❑ Purpose

Weir upstream measuring station will be located at the reservoir inlet. The water level signal from pressure type level transmitter would be converted into flow rate.

❑ Measurement Item

(1) Water Level (Pressure Type)

7. Reservoir Measuring Station

❑ Assumption Diagram

❑ Purpose

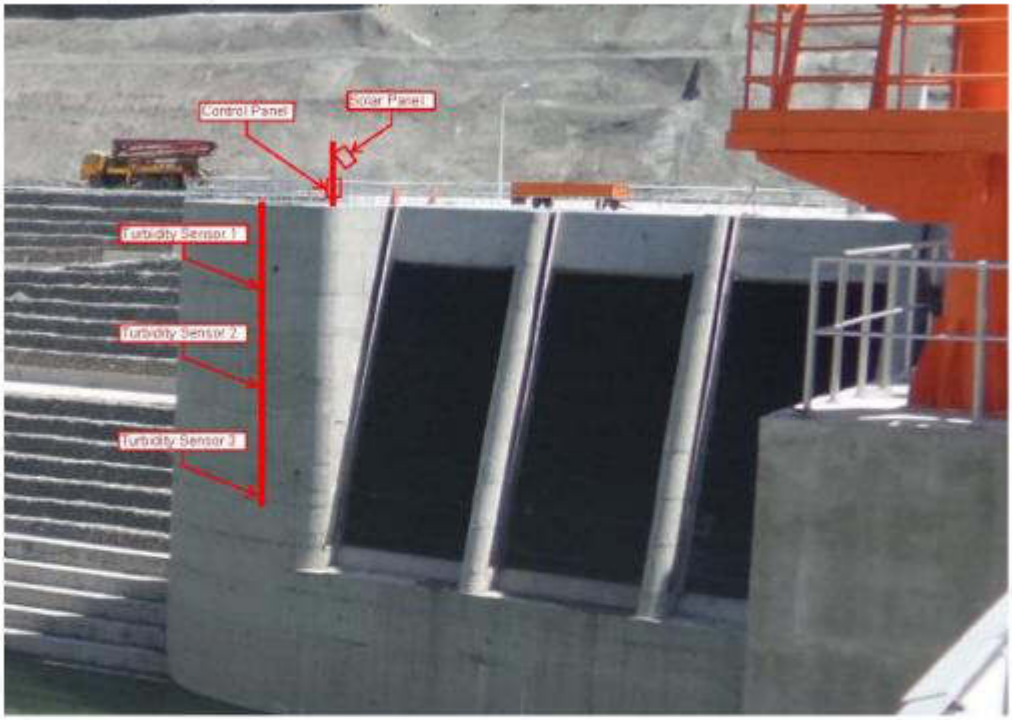
The flow rate into the reservoir will be measured by the flow meter. Doppler type flow meter will be installed at the cofferdam as the section of the upstream cofferdam is a concrete structure and it will not be affected against sedimentation. Although the station is located in the reservoir, the shape is similar to the canal so no turbulence will occurred during the normal operation. Thus, it provides stable measurement.

❑Measurement Item

(1) Water Flow (Doppler Type)
(2) Rainfall
(3) Air Temperature and Humidity
(4) Wind Speed and Direction

8. Weir Intake

❑ Assumption Diagram



❑ Purpose

Weir intake measuring station is located at the weir intake. Total three (3) turbidity sensors measure the turbidity of water into the HRT (Head Race Tunnel). Turbidity sensors are positioned at the high, middle and low points of the intake screen respectively.

❑ Measurement Item

(1) Turbidity (High, Middle, Low Points)

9. Weir Downstream Measuring Station

❑ Assumption Diagram

❑Purpose

Weir downstream measuring station is located at 4km downstream of the weir for the measurement of environmental flow of 2.2 m3/s. As this flow rate is too small for measurement, the water level signal from pressure type level transmitter need to be converted into flow rate. It can be achieved comparing with gate opening rate. The location was decided considering of security against thief.

❑Measurement Item

(1) Water Level (Pressure Type)
(2) Rainfall

10. Flood Warning at Powerhouse

❑ Assumption Diagram

❑ Purpose

Issue a warning alarm for residents to prevent flood damage. Air raid siren will be manually operated by operator before power generation.

❑ Equipment

(1) Air raid siren

11. Flood Warning at Weir

❑ Assumption Diagram

❑ Purpose

Issue a warning alarm for residents to prevent flood damage. The air raid siren will be manually operated by operator before gate operation.

❑ Equipment

(1) Air raid siren

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e inspectest@inspectest.com.pk www.inspectest.com.pk

Client	Patrind O&M PVT Limited Near Thori Park ,Lower Chatter Muzaffarabad AJ&K, Pakistan
Equipment Detail	**Level Transmitter**
Model / Type	**WL-400-060-XXX**
Manufacturer	**Global Water Instrument**
Serial No.	**164900469**
Code	**LT-179**
Reference Procedure No.	**Cali/SCP/055**
Job Location	**Patrind O&M PVT Limited**
Equipment Location	**Down Stream**

Job No.	**11663/23**
Data Sheet No.	**12-113081**
Calibration Date	**November 19, 2019**
Next Calibration Date	**November 19, 2020**

Calibration Results — **Calibrated by:** **Muhammad Usman**

Rang 0~60 Feet — **Resolution**

Set Value (Standard) Unit: FtH2O	Measured Value Unit: mAmp	Standard Value Unit: mAmp	Converted Value Unit: FtH2O	% Error F.S
0.00	4.02	3.99	0.12	0.20
15.00	7.76	7.72	15.17	0.28
30.00	11.51	11.44	30.26	0.43
45.00	15.25	15.17	45.31	0.52
60.00	19.00	18.90	60.40	0.67

* Instrument under test

Note(s)

- Instrument is "used" and in good condition on receiving.
- No adjustment is carried out and measurements in this certificate are as received figures.

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Has been calibrated against Multimeter (Digital) Model No. Fluke-8846-A Serial No. 9422011 which is traceable to Certificate No.82298 GMES (Qatar).

Calibrated by:
Signature:
Lab. Analyst

Approved by:
Signature:
Manager C & T Lab

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e inspectest@inspectest.com.pk www.inspectest.com.pk

Client	Patrind O&M PVT Limited Near Thori Park ,Lower Chatter Muzaffarabad AJ&K, Pakistan
Equipment Detail	**Level Transmitter**
Model / Type	**WL-400-060-100**
Manufacturer	**Global Water Instrument**
Serial No.	**1649004693**
Code	**LT-242**
Reference Procedure No.	**Call/SCP/055**
Job Location	**Patrind O&M PVT Limited**
Equipment Location	**Kaghan Station**

Job No.	**11663/22**
Data Sheet No.	**12-113080**
Calibration Date	**November 25, 2019**
Next Calibration Date	**November 25, 2020**

Calibration Results — **Calibrated by:** **Muhammad Usman**

Rang 0~60 Feet — **Resolution**

Set Value (Standard) Unit: FtH2O	Measured Value Unit: mAmp	Standard Value Unit: mAmp	Converted Value Unit: FtH2O	% Error F.S
0.00	3.95	3.99	-0.16	-0.26
15.00	7.69	7.71	14.89	-0.18
30.00	11.46	11.44	30.06	0.10
45.00	15.20	15.17	45.11	0.18
60.00	18.91	18.90	60.04	0.06

* Instrument under test

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Lab. Analyst

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Signature:

Manager C & T Lab

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e inspectest@inspectest.com.pk www.inspectest.com.pk

Client Patrind O&M PVT Limited.
Near Thori Park ,Lower Chatter Muzaffarabad AJ&K, Pakistan

Equipment Detail	**Level Transmitter**		
Model / Type	**MPM-4700**	Job No.	**11663/20**
Manufacturer	**Micro Sensors**	Data Sheet No.	**12-113078**
Serial No.	**6B3216**	Calibration Date	**November 19, 2019**
Code	**LT-180**	Next Calibration Date	**November 19, 2020**
Reference Procedure No.	**Call/SCP/055**		
Job Location	**Patrind O&M PVT Limited**		
Equipment Location	**Power Intake**		

Calibration Results Calibrated by: **Muhammad Usman**

Range: 0~15 mH2O **Resolution**

Set Value (Standard) Unit: mH2O	Measured Value Unit: mAmp	Standard Value Unit: mAmp	Converted Value Unit: mH2O	% Error F.S
0.0	4.07	4.00	-0.06	0.44
3.75	8.07	8.00	3.81	0.44
7.50	12.7	12.00	7.56	0.44
11.25	16.07	16.00	11.31	0.44
15.00	20.06	20.00	15.05	0.37

* Instrument under test

Note(s)

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Lab. Analyst

Approved by:
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e: inspectest@inspectest.com.pk www.inspectest.com.pk

Client	Patrind O&M PVT Limited Near Thori Park ,Lower Chatter Muzaffarabad AJ&K, Pakistan
Equipment Detail	**Level Transmitter**
Model / Type	**MPM-4700**
Manufacturer	**Micro Sensors**
Serial No	**8C6696**
Code	**LT-178**
Reference Procedure No.	**Call/SCP/055**
Job Location	**Patrind O&M PVT Limited**
Equipment Location	**Tail Bay Level**

Job No.	**11663/19**
Data Sheet No.	**12-113077**
Calibration Date	**November 19, 2019**
Next Calibration Date	**November 19, 2020**

Calibration Results — **Calibrated by:** **Muhammad Usman**

Range: 0~15 mH2O — **Resolution**

Set Value (Standard) Unit: mH2O	Measured Value Unit: mAmp	Standard Value Unit: mAmp	Converted Value Unit: mH2O	% Error F.S
0.0	3.99	4.00	-0.00	-0.06
3.75	7.98	8.00	3.73	-0.12
7.50	11.97	12.00	7.47	-0.19
11.25	15.97	16.00	11.22	-0.19
15.00	19.96	20.00	14.96	-0.25

* Instrument under test

Note(s)

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e inspectest@inspectest.com.pk www.inspectest.com.pk

Client	Patrind O&M PVT Limited. Near Thori Park ,Lower Chatter Muzaffarabad AJ&K, Pakistan
Equipment Detail	**Level Transmitter**
Model / Type	**N/A**
Manufacturer	**Global Water Instrument**
Seriel No.	**N/A**
Code	**LT-242**
Reference Procedure No.	**Call/SCP/055**
Job Location	**Patrind O&M PVT Limited**
Equipment Location	**Talahata Station**

Job No.	**11663/21**
Data Sheet No.	**12-113079**
Calibration Date	**November 20, 2019**
Next Calibration Date	**November 20, 2020**

Calibration Results — **Calibrated by:** **Muhammad Usman**

Range: 0-60 Feet — **Resolution**

Set Value (Standard) Unit: FtH2O	Measured Value Unit: mAmp	Standard Value Unit: mAmp	Converted Value Unit: FtH2O	% Error F.S
0.00	3.99	13.99	0.00	0.00
15.00	7.74	7.72	15.10	1.15
30.00	11.50	11.44	30.20	0.36
45.00	15.25	15.17	45.30	0.52
60.00	19.00	18.90	60.40	0.67

* Instrument under test

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Client	Patrind O&M PVT Limited Near Thori Park ,Lower Chatter Muzaffarabad AJ&K, Pakistan		
Equipment Detail	**Level Transmitter**		
Model / Type	**WL-400-060-XXX**	Job No	**11663/24**
Manufacturer	**Global Water Instrument**	Data Sheet No	**12-113082**
Serial No.	**1634002538**	Calibration Date	**November 19, 2019**
Code	**LT-177**	Next Calibration Date	**November 19, 2020**
Reference Procedure No.	**Call/SCP/055**		
Job Location	**Patrind O&M PVT Limited**		
Equipment Location	**Up-Stream**		

Calibration Results Calibrated by: **Muhammad Usman**

Rang 0~60 Feet Resolution

Set Value (Standard) Unit: FtH2O	Measured Value Unit: mAmp	Standard Value Unit: mAmp	Converted Value Unit: FtH2O	% Error F.S
0.00	4.01	3.99	0.08	0.13
15.00	7.75	7.72	15.13	0.22
30.00	11.48	11.44	30.14	0.23
45.00	15.21	15.17	45.15	0.25
60.00	18.94	18.90	60.16	0.27

* Instrument under test

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Annex-3 Plantation Report

Final report on Plantation on the Powerhouse Side for Patrind Hydropower Project carried out during January-February 2020.

1. Project Summary:

The area behind the powerhouse of the Patrind hydropower project was planned to cover with vegetation. The objective of the plantation is to give a green look of the area and compensate for the loss of vegetation due to the concrete construction work of the project. The area has been covered in patches for the last three years. Plantation carried out during the last years is successful with die back at some places which is a natural process.

Plantation on the Powerhouse site was also carried out during the spring plantation season of January and February 2020. The plantation work has been completed within the season and a high percentage of success is expected if the frequent rain showers are received during the year.

2. Species of Plantation:

The plant species planted are:

Robena- A fast-growing plant species to cover the area quickly. It also enriches the soil fertility through its character of nitrogen-fixing.

Ailanthus: A fast-growing species and survives under harsh conditions as well

Walnut: Deep-rooted species to hold the soil firmly and control the erosion.

Poplar: A fast-growing species surviving under harsh conditions

Willow: Moisture lover plant and gets established where no other species survive.

Phagwa: It is an excellent soil binder with a well-developed root system

Anji: This is a fruit-bearing plant with a deep root system and holds the soil firmly

Mulberry: It is a shooter plant and brings quick green cover after a dormancy period

Dodona: A good soil binder and aggressive species

3. Outcome expected by the plantation

- The plantation will cover the blank area around powerhouse with vegetation
- It will reduce the impact of climate change by combating through the plantation

- It will reduce the risk of soil erosion in the area.
- Green patches of vegetation give a good look of the area

4. Plant species planted in the area:

Walnut (*Juglans regia*)	400
Robena (*Robena pseudo acacia*)	400
Ailanthus (*Ailanthus anus*)	300
Phagwa (*Ficus palmate*)	50
Mulberry (*Murus alba*)	700
An-jeer (*Ficus carioca*)	50
Willow (*Salix alba*)	250
Santha: (*Dodonaea viscosa*)	80

5. Completed work

The work has been completed within the planting season as scheduled in the basic plan of the project. A total of 2230 plants have been planted against the target of 2050. Fertile soil and organic fertilizer have been placed around the roots of the plants in each pit. The plants are marked with white lime to make the plantation visible.

Unloading the carried plants

New plant with fertile soil and

Pic: Plants marked with white lime

Species Selection:

The area behind the power house has shale and slate formation. Fertile soil content is very poor. So, the species selection for planting in this area was based on the probability of success. Such species were selected for planting which are indigenous and can survive the harsh weather. The pits were enriched by placing organic soil in it. This has shown wonderful results in the area as is evident from the photographs below.

Planted species

Common Name	*Botanical Name*	Type of Tree	Status	Source
Akhrot **(Wallnut)**	*Juglans regia*	Fruit	Common	Nursery
Anjeer	*Ficus carica*	Fruit	Rare	Nursery
Beence	*salix spp*	Firewood	Common	Field
Drawa	*Ailianthus anus*	Firewood	Common	Nursery
Drek	*Melia azadrach*	Firewood	Common	Field
Narri	*Arundo donax*	Hedge	Common	Field
Phagwarr	*Ficus Palmata*	Soil binder	Common	Field
Robinia	*Robinia pseudoacacia*	Firewood	Common	Nursery
Shahtoot	*Morus alba*	Fruit	Common	Nursery
Sherol	*Alnus nitida*	Firewood	Common	Field
Snatha	*Dodonaea viscosa*	Soil binder	Common	Field
Talli (shisham)	*Dalbergia sisso*	Furniture	Common	Field

Picture showing bioengineering works with plantation and sowing before the sprout and germination (December-February 2020)

Total area Planted

Beating up of the previous area is about 10 acres in patches and new area along with bioengineering works is about 8 acres. If nature favored, the treated area will get stabilized within two years when the root system of the plants will get established deep in the soil.

Source of the Plants

The plants were procured from the local nurseries and from the nature having richness in the area like narri, Phagwarr, salix, Drek. Source of collection of each plant species is given in the list mentioned above.

How does this compare with the species present before the project construction?

The plant species placed in the green side were the same which were present in the area before the construction of the powerhouse but the species planted in the slide are according the need of the area as the area required to get covered from its denudation. The plant cover

from the slide area had completely washed away by the slide. The first priority is to have green cover but no exotic species or unwanted invasive plant species were planted in the area.

How the project intends to reproduce or improve the diversity of trees?

The success percentage is high when 60% of the plants get their root system get established. 40% of the area has to be replanted during the next planting season to get satisfactory results. This also shows what plant species are accepted by the local environment and soil substrata and accordingly treatment is done. Good example is the planting of Chirpine saplings which was not successful due to pest attack and remedial actions were not only difficult and time taking but were expensive as well. So other plant species were planted to get encouraging results. The area treated with bioengineering, dibbling, sowing and planting is successful in the initial stage and shown results more than expectation. This new treatment will definitely improve the diversity as species of local concerns are planted and their seed will spread when they get mature in 5-8 years and more area will be covered in the coming time.

Plantation Locations at Power House Site

Photos of the area

Results in the same area after 5 months of time, June

Annex-4 Landslide stabilization Report

COMPLETION REPORT ON STABILIZATION OF THE 2ND PART OF THE LANDSLIDE BEHIND THE POWERHOUSE

BY

MUHAMMAD YOUSAF QURESHI

INDIVIDUAL CONSULTANT

Executive Summary

On the successful completion of landslide stabilization of the first part of the big slide, it was decided by the project authorities to carry out the same exercise in the 2nd part of the slide just adjacent to the part 1. The work was started in the last week of January. This has been completed in this third week of the February. Above 1500 soft gabions have been fixed in the slide area in multiple rows along with planting of Mulberry, Narri and cuttings of Poplar, Willow and bamboo shoots. Dibbling and sowing of nuts and seeds has also been carried out to cover the area to its maximum capacity. Sprouting of Mulberry has started now. Another shower of rain is expected during this last week of February which will help in the stabilization of the root system of the plants and making the area green. Fertile soil and organic urea has been placed between the rows of the soft gabions as the soil of the slide is not fully supportive of the growth of the plants.

The wire stone gabions have been pace below the slide area and under the waterfall adjacent to the slide to control the side scouring of the slide area by the water of the creek. Four cubic meters of the wire stone gabions have been placed under the edge of the drain at corner-3, which was causing the erosion. The target area seems to be safe from the erosion and hopefully it will become green during the first two years.

ACHIEVEMENTS

THE ACHIEVEMENTS OF LANDSLIDE STABILIZATION PROJECT ARE:

- A team of skilled and unskilled laborers was hired, practically guided at the site, and mobilized to initiate the work.
- Erection of 20 cubic meters of wire stone gabions at appropriate places under the slide.
- Placement of 1530 against the target of 1500 soft gabions, in different erodible parts of the slide at corner 3 and a small slide at corner 4 of the area.
- Planting of plants of Mulberry, fig, Narri, Dodonia and cuttings of Poplar and willow carried between the rows of the soft gabions and behind them.
- Two small truckload of soil and one truck of Organic urea (Cow dung) have been carried out at the site and placed between the rows of the soft gabion for fertile base provision for plantation.
- Dibbling of walnut and bakyan nuts have carried out in the slide area after treating them with the organic urea as part of pre-sowing seed treatment.
- Seeds of Robinea and Ailanthus species carried out behind the soft gabions in the slide area to leave no space baren.

Please see the attached photographs for site work.

Pictures

Pic: Soft gabions placed in the slide

Soft gabions and plantation between and behind the rows of soft gabions

Pic: Soft gabion work in progress

Pic: Soft Gabion work

Pic: A view of progress of work in the second part of the slide

Pic: Wire stone gabion work under the slide

Pic: Wire stone gabion under the waterfall to reduce the thrust of the fall

Pic: view of the waterfall before the placement of wire stone gabions

Pic: Waterfall after the placement of wire stone gabions

Pic: View of combination of old and new work

Pic: A view of soft gabions from the top with thick plantation carried out

Pic: Inspection by the HSE team during the work

Annex-5 Local Employment Status

Employment Summary

Departments	AJK	KPK	Other	Total
CEO				
Service Support	14	4	3	21
Maintenance	13	3	7	23
Operation	17	5	2	24
HSE (inc CLO)	4	1	0	5
Total	**48**	**13**	**12**	**73**
Total %	65.75%	17.81%	16.44%	

Departments	Chatter	Alra	Patrind	MZD	Mirpur	KPK	Other	Total
CEO								
Service Support	6	3	2	3		4	3	21
Maintenance	6	0	0	7		3	7	23
Operation	3	0	2	11	1	5	2	24
HSE (inc CLO)	0	1	1	2		1	0	5
Total	**15**	**4**	**5**	**23**	**1**	**13**	**12**	**73**

Employment from Affected Households

Sr. No	Affected Name (Name initials)	Village	Designation/Working Role	Department
1.	MA	Alda/affected household	CLO	HSE
2.	MoA	Alda/ affected household	Driver	Support Services
3.	TA	Alda/ affected household	Office Boy	Support Services
4.	I	Sirrati/ affected household	Driver	Support Services
5.	Z	Patrind	Driver	Support Services
6.	JA	Patrind/ affected household	Office Boy	Support Services
7.	F	Patrind/ affected household	Security Guard	Security
8.	S	Patrind	Security Guard	Security
9.	J	Sirrati	Security Guard	Security
10.	U	Sirrati	Security Guard	Security

Sr.NO	Title	Village	Address	Province
1	1st Engineer	Tarbela	House # B-12, R.V.C Tarbela KPK, Pakistan.	KPK
2	Shift Charge Engineer	Chatter	House # B-12, Upper Chattar Housing Scheme Muzaffarabad, Ajk.	AJK
3	Shift Charge Engineer	Mirpur	House # 129-A. Sector F-1, Mirpur, AJK.	AJK
4	Shift Charge Engineer	MZD	Ward # 5, Near Zibah Khana, Eid Gah Road, Muzaffarabad, Ajk.	AJK
5	Shift Control Engineer	MZD	Airport Road, Manak Pian, Muzaffarabad, AJK.	AJK
6	Shift Charge Engineer	MZD	D2 Electricity Colony, Gojra bypass road, Muzaffarabad, AJK.	AJK
7	Shift Control Engineer	Nawsher	S.S House, Karachi Wala Colony,Lower Muhallah Shoaibzai,Nawansher Abbottabad,Pakistan.	KPK
8	Junior Operator	MZD	Village & P.O.Box, Lawat Balla, Tehsil Athmuqam, District Neelum,AJK.	AJK
9	Junior Operator	MZD	Village Kiamanja, Ghari Duppata, Muzaffarabad, AJK.	AJK
10	Sub-Engineer	Thanda Choha	Village Thanda Choha Post Office Nawana Shehr Tehsil and Dist Abbottabad	KPK
11	Senior Charge Engineer	Chatter	House# 13-A, Near MLA Hostel, Lower Chatter, Muzaffarabad, AJ&K	AJK
12	3rd Engineer	MZD	Rasheedabad, Muzaffarabad, AJK	AJK
13	Shift Control Engineer	Bhakar wali	Chak No. 136 RB Bhakrewali Tehsil Chak Faisalabad, Punjab, pakistan	Other
14	Shift Control Engineer	MZD	Ward # 18, Chella Bandi, Muzaffarabad, AJ&K	AJK
15	Junior Operator	Sararti	Sarati Rehmanabad Boi, District Abbbotabad, KPK	KPK
16	Shift Control Engineer	Patrind	Village Patrind, AJ&K	AJK
17	Shift control Engineer	Kumgran	Anderwan Hussain Aghahi house No. 797/3 muhalla kumgaran Multan	Other
18	Sub Engineer (Weir)	Nakra Janderbari	Village Nakra Janderbari P.O.Box Nakra Janderbari Abbottabad	KPK
19	Shift Charge Engineer	Chatter	Upper Chatter Qureshi Muhalla, Muzaffarabad, AJ&K	AJK
20	Junior Operator	MZD	kangar serameel, Muzaffarabad AJK	AJK
21	Block Operator	MZD	Darra Battangi,Muzaffarabad	AJK
22	Junior Operator	MZD	village Sarrar, Muzaffarabad	AJK

Sr.NO	Title	Village	Address	Province
23	Block Operator	Patrind	village Patrind, Muzaffarabad	AJK
24	Junior Operator	MZD	P.O.Box Lawat Tehsil Athmuqam, District Neelum,AJK.	AJK
1	2nd Engineer (Mechanical)	Darya Khan	Farooqabad Darya Khan, Distt. Bhakkar Punjab, Pakistan.	Other
2	2nd Engineer (Electrical)	Abbotabad	House # 377, Link Road, Abbotabad KPK, Pakistan.	KPK
3	3rd Engineer (Mechanical)	Lahore	House # 11-B, Hashmi Street # 17, Tajpura Shad Bagh, Lahore,Pakistan.	Other
4	3rd Engineer(C&I)	Chatter	Near Patrind Hydro Power Project, Lower Chattar, Muzaffarabad Ajk.	AJK
5	3rd Engineer (Electrical)	Abbotabad	CB-500, Emplpyee colony Jhangi seadain,Abbottabad	KPK
6	Sub-Engineer (Mechanical)	MZD	Ward No 18, Chella Bandi, Muzaffarbad, AJK.	AJK
7	2nd Engineer (Civil)	Abbotabad	S.S House, Karachi Wala Colony,Lower Muhallah Shoaibzai,Nawansher Abbottabad,Pakistan.	KPK
8	Sub-Engineer (Civil)	MZD	ward 18, Chella Bandi ,Muzaffarabad,AJK	AJK
9	Senior Officer (Civil)	Chatter	Nisar Karyana Store, Lower Chatter, Muzaffarabad	AJK
10	Officer (Civil)	MZD	Mohala Shahnara, Ward No.14, Muzaffarabad	AJK
11	Sub Engineer (C&I)	Lahore	House No. 78-F1 Model Town,Lahore	Other
12	Foreman(Electrical)	Minwali	Pakki Shahmardan, Mianwali,Pakistan.	Other
13	Foreman (Mechanical)	MZD	Ward#19, Rajpoot House,Mohala Shaukat Lines, Muzaffarabad, AJK	AJK
14	Sub-Technician (Electrical)	Chatter	Lower Chattar, Muzaffarabad, AJK	AJK
15	Technician (Electricial)	Mianwali	Mianwali,Pakistan.	Other
16	Technician (Mechanical)	Bhakar	Daggar Shada, Bhakkar,Pakistan.	Other
17	Crane Operator	Mianwali	Kala Bagh, Mianwali,Pakistan.	Other
18	Sub-Technician (Electrical)	MZD	Mohala Nisar Chela Bandi,Muzaffarabad	AJK
19	Sub-Technician (Mechanical)	MZD	Meeran Kalla Muzaffarabad,AJ&K	AJK
20	C&I Technician	MZD	Ambore, Muzaffarabad	AJK
21	Sub-Technician(C&I)	Chatter	Lower Chattar, Muzaffarabad, AJK	AJK
22	Sub-Technician (Electrical)	Chatter	Upper Chatter Sundgali Ward No 3, Muzaffarabad	AJK
23	Sub-Technician (Mechanical)	Chatter	Ward No.2 Lower Chatter Muzaffarabad AJK	AJK
Sr.NO	Title		Adress	

Sr.NO	Title	Village	Address	Province
1	Sr. Manager	Lahore	Garhi Shaho , Lahore	Other
2	Manager	Lahore	House#485, Nasheman Iqbal housing Socity, Lahore	Other
3	Senior Officer	Rawalpindi	House#E 65/16, E block Sattlitetown, Rawalpindi	Other
4	Senior Officer	MZD	Dahriyan syedian ward 13, Muzaffarabad	AJK
5	Senior Officer	Chatter	Ward 3, Chatter Domail,muhalla sund Gali, Muzaffarabad	AJK
6	Officer	MZD	Dak-khana Domail,sanwan,Muzaffarabad,AJ&K	AJK
7	Officer	Tili Kot	Tili Kot,Dakhkhana Chinari,Hatian Bala,AJ&K	AJK
8	Driver	Swabi	Swabi Dar Kala.Po box Dobian,Tehsile Lahore,Distt Swabi	KPK
9	Driver	Chatter	Ward No 2, Gazi Chok,Lower Chatter	AJK
10	Driver	Alra	PO Box Muzaffarabad Alra, Tehsil & district Muzaffaraabd	KPK
11	Driver	Patrind	Village Patrind, Muzaffarabad	AJK
12	Driver	Sararti	Village Didal Sarati Po Dulola, Abbottabad	KPK
13	Driver	Chatter	Mohala Lower Chatter, Muzaffarabad	AJK
14	Driver	Chatter	Ward 2, Lower Chatter, Muzaffarabad	AJK
15	Driver	Chatter	Ward No 02, Lower Chatter, Muzaffarabad	AJK
16	Cleaner	Alra	Alra Dakkhana,Muzaffarbad	AJK
17	Cleaner	Alra	PO Box Muzaffarabad Alra, Tehsil & district Muzaffaraabd	AJK
18	Cleaner	Patrind	Dakkhana Muzaffarabad,Patrind, Muzaffarabad	AJK
19	Cleaner	Chatter	Ward No 2, Lower Chatter, Muzaffarabad	AJK
20	1st Cook	Sarati	Burj, Dalola, Abotabad	KPK
21	2nd Cook	MZD	Jaho, Kanynia, Dakkhana Ghari Dupata, Hytia Bala, Ajk	AJK
1	Senior Manager	Swabi	Shah Gram Karokaly P.O madeen , tehsil bahreen, Dist Sawat KPK Pakistan	KPK
2	Senior Officer Environment	MZD	Ward No 18, Chella Bandi, Muzaffarabad, AJK.	AJK
3	Senior Officer HSE	MZD	Majhui,Dakkana Ghari Dupata,Muzaffarabad	AJK
4	CLO	Alra	Alra Muzaffarabad	AJK
5	CLO	Patrind	Village Boi Tehsil & Distt Abbottabad	AJK

CAREER OPPORTUNITIES AT HYDRO POWER PLANT

A hydro power sector company is looking for hire the services of experienced professionals for the following positions for O&M of Patrind Hydro Power Plant:

Sector	Minimum Qualification	Position & Experience
Maintenance	DAE Electronics or Equivalent	Possesses high skill and sound knowledge in all maintenance aspects of hydro Power Plant (HPP). Well versed with operating of HPP facilities (PLC, Excitation, Protection, Sensors, CCTV, Telephone Exchange, and Networking). **(Sub Technician Control and Instrumentation)** Having minimum 2 years of experience in O&M of HPP/CCPP Preference shall be given to HPP personal.
Maintenance	DAE or Equivalent	Possesses high skill and sound knowledge in all maintenance aspects of hydro power plant (HPP). Well versed with operating of HPP facilities (troubleshooting of 0.4kV switchgear,11kV sweatchgear,11kV transmission line and all other electrical facility in Powerhouse). (Elec. Sub Technician) Having minimum 2 years of experience in O&M of HPP/CCPP Preference shall be given to HPP personal
Support Service	BA/BSc. in Business Management or Equivalent	**(Officer -Administration, Finance & Procurement)** Graduation in business management or related field from a recognized university with more than 60% marks.

I. Fluency in written and spoken English is mandatory.
II. Only shortlist candidates will be call for test and interview.
III. Proficient in computer application skills including Word, Excel, Power Point, etc.
IV. Send your latest CV mentioning current & expected salary along with photograph, contact number and current job title to the following: powersector11@gmail.com latest by 31th July 2018 with clear job title in email "subject".

(If the CV has not include information mentioned above, it may be a disadvantage during the document review)

V. Management can cancel any or all positions at any time without prior notice.
VI. Use of any influence during the selection process would immediately result in disqualification of the candidate

Only shortlisted candidates will be contacted.

The company will not respond to any query or email.

Annex-6 Noise Monitoring Report

PATRIND O&M
K-Water Global

Monthly - Noise Survey Report

Date: 13th January, 2020

Sr. No	Location	Type	Time Day/Night	1st Reading db (A)	2nd Reading db (A)	3rd Reading db (A)	Average Reading db (A)	NEQSs db (A)	Remarks
1.	First Floor	Office Area (Commercial)	Day	66.1	63.4	65.3	64.9	65	
2.	Ground Floor	Office Area (Commercial)	Day	60.6	65.5	64.2	63.4	65	
3.	Basement-1	Process Area (Industrial)	Day	83.1	86.9	87.3	85.7	85	The noise level in these areas are above the minimum exposure limits. All staff is instructed to work in the area only when required and use ear plugs. Maintenance department is advised to ensure regular maintenance of the plant equipment's & Operation department is required to ensure the maximum efficiency of operational equipment's as per SOPs.
4.	Basement-2	Process Area (Industrial)	Day	90.2	89.1	88.6	89.3	85	
5.	Basement-3	Process Area (Industrial)	Day	85.4	85.9	82.3	84.5	85	
6.	O & M Building	Residential Area	Day	54.1	52.3	53.6	53.3	55	
7.	Korean Accommodation	Residential Area	Day	53.6	52.9	51.9	52.8	55	
8.a	Alda Village Point 1 Day Time	Residential Area	Day	51.9	52.3	48.9	51.03	55	
8.b	Alda Village Point 1 Night Time	Residential Area	Night	44.6	44.2	44.9	44.5	45	
9.a	Alda Village Point 2 Day Time	Residential Area	Day	52.3	53.6	53.7	53.2	55	
9.b	Alda Village Point 2 Night Time	Residential Area	Night	44.9	44.2	43.6	44.2	45	

Note: (01 Turbine is in operation at 31.3% efficiency and generating 47 MW)

Monitored By: Imran Yousaf

Signature:

PATRIND O&M
K-Water Global

Monthly - Noise Survey Report

Date: 28 February, 2020

Sr. No	Location	Type	Time Day/Night	1st Reading db (A)	2nd Reading db (A)	3rd Reading db (A)	Average Reading db (A)	NEQSs db (A)	Remarks
1.	First Floor	Office Area (Commercial)	Day	64.2	63.5	64.7	64.13	65	
2.	Ground Floor	Office Area (Commercial)	Day	61.3	62.6	66.4	63.43	65	
3.	Basement-1	Process Area (Industrial)	Day	83.2	85.6	88.6	85.8	85	The noise level in these areas are above the minimum exposure limits. All staff is instructed to work in the area only when required and use ear plugs. Maintenance department is advised to ensure regular maintenance of the plant equipment's & Operation department is required to ensure the maximum efficiency of operational equipment's as per SOPs
4.	Basement-2	Process Area (Industrial)	Day	86.3	86.9	84.9	86.03	85	
5.	Basement-3	Process Area (Industrial)	Day	81.9	83.8	85.6	83.76	85	
6.	O & M Building	Residential Area	Day	53.2	50.4	54.1	52.56	55	
7.	Korean Accommodation	Residential Area	Day	51.9	52.6	53.8	52.46	55	
8.a	Alda Village Point 1 Day Time	Residential Area	Day	50.3	50.9	48.8	50	55	
8.b	Alda Village Point 1 Night Time	Residential Area	Night	44.6	44.9	44.1	44.5	45	
9.a	Alda Village Point 2 Day Time	Residential Area	Day	53.8	53.6	53.7	53.7	55	
9.b	Alda Village Point 2 Night Time	Residential Area	Night	44.6	44.9	44.1	44.5	45	

Note: 01 Turbine is in operation at 24.6 % efficiency and generating 37 MW

Monitored By: Imran Yousaf

Signature:

PATRIND O&M
K-Water Global

Monthly - Noise Survey Report

Date: 28th March, 2020

Sr. No	Location	Type	Time Day/Night	1st Reading db (A)	2nd Reading db (A)	3rd Reading db (A)	Average Reading db (A)	NEQSs db (A)	Remarks
1.	First Floor	Office Area (Commercial)	Day	62.3	63.4	65.5	63.7	65	
2.	Ground Floor	Office Area (Commercial)	Day	61.2	65.9	66.3	64.4	65	
3.	Basement-1	Process Area (Industrial)	Day	84.4	85.3	85.1	84.9	85	The noise level in these areas are above the minimum exposure limits. All staff is instructed to work in the area only when required and use ear plugs. Maintenance department is advised to ensure regular maintenance of the plant equipment's & Operation department is required to ensure the maximum efficiency of operational equipment's as per SOPs
4.	Basement-2	Process Area (Industrial)	Day	88.6	87.9	88.3	88.2	85	
5.	Basement-3	Process Area (Industrial)	Day	89.9	86.3	86.5	87.5	85	
6.	O & M Building	Residential Area	Day	53.1	53.3	52.8	53.06	55	
7.	Korean Accommodation	Residential Area	Day	53.6	51.8	53.6	53	55	
8.a	Alda Village Point 1 Day Time	Residential Area	Day	52.2	50.6	51.2	51.3	55	
8.b	Alda Village Point 1 Night Time	Residential Area	Night	44.6	44.7	44.2	44.5	45	
9.a	Alda Village Point 2 Day Time	Residential Area	Day	53.6	53.1	51.9	52.8	55	
9.b	Alda Village Point 2 Night Time	Residential Area	Night	44.8	43.9	41.6	43.4	45	

Note: 02 Turbines are in operation at 59.3% efficiency and generating (89 MW)

Monitored By: Imran Yousaf

Signature:

Annex-7 Waste Transfer Notes

M/s. QADRI ENTERPRISES

PEST CONTROL, WASTE MANAGEMENT & WATER TANK CLEANING SERVICES

Certificate of Waste Management Service

WASTE COLLECTED FROM PATRIND HYDROPOWER PROJECT WAS DISPOSED OFF AT SHADRA DISPOSALSITE (GOVERNMENT APPROVED DISPOSAL SITE) AFTER SEGREGATION HAVING PARTICULAR LISTED BELOW:

MONTH OF FEB-2020

WASTE MANAGEMENT SERVICE PARTICULARS

DATE	WASTE TYPE	WEIGHT	RECYCLE WASTE
03-FEB-20	NON HAZARDOUS WASTE	328 KG	27 KG
10-FEB-20	NON HAZARDOUS WASTE	315 KG	
17-FEB-20	NON HAZARDOUS WASTE	321 KG	
21-FEB-20	NON HAZARDOUS WASTE	324 KG	
27-FEB-20	NON HAZARDOUS WASTE	309 KG	

M/S QADRI PEST & WASTE MANAGEMENT SERVICES ENTERPRISES

AUTHORIZED SIGN STAMP ISSUE DATE 1, MARCH, 2020

First Floor, Haji Saeed Plaza, Main Bazar Chowk, Chatta Bakhtawar Park Road, Chak Shahzad Islamabad.

House # A/5, Near Block T, Mustafabad, Nusrat Bhutto Colony, North Nazimabad, karachi

• qadri319@gmail.com
• khanhameed.qadri319@gmail.com
• alishatkhan319@gmail.com

051-8355816 - 8355817
0331-8182092- 0343-8393387
0355-8113085, 0355-8117474,
0346-8182071

M/S QADRI ENTERPRISES

Waste Management Service

Dry,Food,Oily Rags & Recycle Waste According to Waste Tracking From

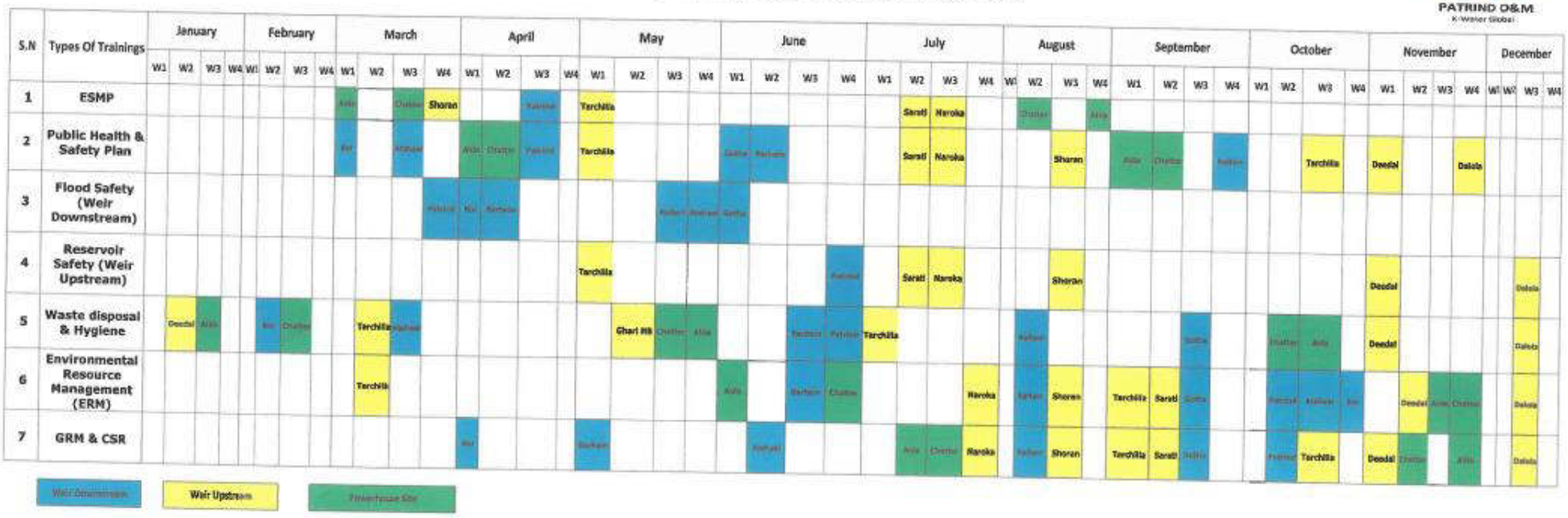
MONTH OF FEB-2020

DRY TRASH						
Date	3/2/2020	10/2/2020	17/2/2020	21/2/2020	27/2/2020	TOTAL KG
KG	225	235	238	215	205	1118
FOOD WASTE						
KG	68	73	77	70	82	370
OILY RAGS						
KG	11	12	9	13	10	55
	304	320	324	298	297	1543

Description	DRY	FOOD	OILY REG	TOTAL	RECYCLE
Total Kg	1118	370	55	1543	20

Annex-8 Community Training and Consultation Plan

Community Trainings and Consultations Plan 2020

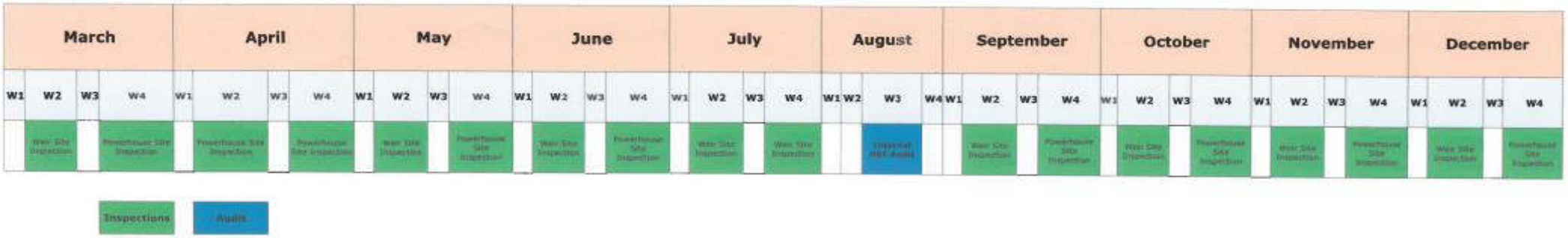


PATRIND O&M
K-Water Global

Approved By:
Kim, Young-Ho
CEO Patrind O&M (Private) Limited

Annex-9 HSE Inspections and Audit Plan 2020

HSE Inspections and Audit Plan 2020



Approved By:
Kim, Young-Ho
CEO Patrind O&M (Private) Limited

Annex-10 HSE Trainings Plan 2020

HSE Trainings Plan 2020

Serial No	Types of Trainings	January	February	March	April	May	Junn	July	August	September	October	November	December
1	ESMP			W3		W3		W3		W3	W3		W3
2	Emergency Response and Evacuation				W2								
3	Firefighting			W3									
4	First Aid						W1	W3					
5	Defensive Driving	W4								W3			
6	LOTO								W2			W2	
7	Work at Height			W2									
8	Manual Handling				W2				W1				W5
9	Hand and Power Tools					W3					W3		
10	Mechanical and Electrical Safety						W3			W3			
11	Waste Management		W2		W2		W1		W1		W3	W3	
12	Welding and Cutting	W3						W2					
13	Confined Space				W4			W1				W4	
14	Climate Change and CDM			W4			W3			W4			W4

Approved By:
Kim, Young-Ho
CEO Patrind O&M (Private) Limited

Annex-11 Trainings Attendance Sheets

PATRIND O&M
K-Water Global

K water

Training Attendance Sheet

Training Title	Awareness Session on Corona Virus			
Trainer's Name	Syed Qamar and Sundas Tasleem			
Training Location	Conference Room	Trainer's Signature:		
Date	5 March 2020	Time		
Sr.	Name	Designation	Department	Signature
23	Qasam ali			
24	Usman			
25	Tauseef			
26	Rauf			
27	Babar			
28				
29	Atiq ur Rehman			
30	Salar Jadoon			
31	Haider			
32	Ijtiaz			
33	Iftikhar Rana	Manager	HR	
34	Habib Ullah	S. Manager	OP	
35	Adeel	S. officer	HR	
36	Rameez	S. officer	HR	

PATRIND O&M
K-Water Global

K water

Training Attendance Sheet

Training Title	Awareness Session on Corona Virus			
Trainer's Name	Sundas Tareen and Syed Qamar Ali Shah			
Training Location	Conference Room	Trainer's Signature:		
Date	5 March, 2020	Time		
Sr.	Name	Designation	Department	Signature
1	Waqas Khan	Elec Engineer	Maintenance	
2	Javed Abbas	welder	M. cell.	
3	Abdul wajid	Elec Tec	Mech	
4	Ammar Ikram	CI Subfg	C&I	
5	Ghulam Mustafa	Tech.	Mech	
6	Ajmal Baloch	Gen operator	Mech	
7	Tanveer Butt	Electrical	Ele	
8	Naeem	"	"	
9	Aqeel	"	"	
10	RIZWAN	C/Technician	C/I	
11	Azmat Hussain Shah	Senior Civil officer	Maintenance	
12	Muhammad Ashfaq	Electrical Engineer	Maintenance	
13	Atif Bashir	Mechanical Engineer		
14	SAFDAR YASIN	Mech. Engg.	Maint.	
15	Maqsood Hussain	CNEEC Representative		
16	Sadaqat Bashir	Sub Engineer	Maintenance	
17	Amin Mehmood	Sub. Engg	" "	
18	Jamil	Labour	" "	
19	Ali BABU/Ath.	Labour	" "	
20	Ahmed	Civil office	"	
21	Dve	Labour	"	
22	Sohail Ahmed	Ali tech	"	
23	Mohsin Kazmi			

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K-Water Global

K water

Training Attendance Sheet

Training Title	WORKING AT HEIGHT			
Trainer's Name	SUNDAS TAREEN			
Training Location	CONFRENCE ROOM	Trainer's Signature:		
Date	13/03/2020	Time		
Sr.	Name	Designation	Department	Signature
1	Tanveer Bhatt	Sub.Tec	Electrical	
2	M. Nadeem.	Sub.Tec	E/C	
3	Javid Abbsi	Welder	M.E&C	
4	M. USMAN	Sub-Engineer	Operation	
5	Habib ur Rehman	ISTengr	-do-	
6	Ahsin Gujjar	3rd Engr	-do-	
7	Sadeqad Bashir	Sub Engineer	Maintenance	
8	Ammir M	"	"	
9	G.M. Zubair-ud-din	3rd-Engr	"	
10	Ammar Ikram	Sub Engr	CI	
11	Rizwan Kazmi	Technician	Maintinance	
12	Sohail Ahmed	"	"	
13	Atif Bashir	Foreman	Maintenance	
14	Ajmal Baloch.	Chem Opra	Maintenance	
15	Ghulam MUSTAFA	Tech	Mech	
16	Muhammad Ashfaq	Elf foreman	maintenance	
17	Sameen Yousaf	Env	HSE	
18.	Ramiz Hashmi	Sr officer	Admin	
19.	Rayi Ayan	Sr. Officer	Admin	

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K water

Training Attendance Sheet

Training Title	FIRE PREVENTION		
Trainer's Name	SUNDAS TAREEN		
Training Location	CONFRENCE ROOM	Trainer's Signature:	
Date	13/03/2020	Time	

Sr.	Name	Designation	Department	Signature
1	Tanveer Bhatti	Sub-Tec	Electrical	
2	Babar Hussain	Admin Officer Supt Engineer		
3	Habibur Rehman	ISF Engr operation	operation	
4	Ahsin Gilani	3rd Engr operation	Operation	
5	Sadaqat Bashir	Sub-Engineer	maintenance	
6	Ammar M	11	11	
7	S.M. Zaheer-ud-din	3rd Engineer	Maintenance	
8	M. USMAN	Sub-Engineer	operation	
9	Ammar Ikram	Sub Engg	CP	
10	RIZWAN KAZMI	Sr Technician	maintenance	
11	Sohail Ahmed	11	11	
12	Atif Bashir	Foreman	Maintenance	
13	Ajmal Baloch	Crash officer	Maintenance	
14	Ghulam MUSTAFA	Tech	Mech	
15	Muhammad Ashfaq	ELE Foreman	Maintenance	
16	Ihsan Yousaf	Environment	HSE	
17	Ramiz hashmi	Sr. officer	Admin	
18	Raza Affan	Sr. OFFICER	Admin	
A	Majid Abbasi	CLO	HSE	

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K water

Training Attendance Sheet

Training Title	ENVIRONMENTAL SOCIAL MANAGEMENT PLAN (ESMP)		
Trainer's Name	IMRAN YOUSAF		
Training Location	CONFERENCE ROOM	Trainer's Signature:	
Date	13/03/2020	Time	10:00 (AM)

Sr.	Name	Designation	Department	Signature
1	Tanveer Bhatt	Sub-Tec	Electrical	
2	Habib ur Rehman	DT Engr	Operation	
3	Ahsin Gilani	3rd Engr	-do-	
4	Sadegal Bashir	Sub Engineer	Maintenance	
5	Aamir M	"	"	
6	S.M. Zaheer-ud-din	3rd Engr	"	
7	M. USMAN	Sub Engineer	Operation	
8	Ammar Ikram	Sub Eng	CI	
9	RIZWAN Kazmi	Technician	Maintenance	
10	Sohail Ahmed	"	"	
11	Atif Bashir	Foreman	Maintenance	
12	Ajmal Baloch	Chief Opr	Maintenance	
13	Ghulam MUSTAFA	Tech	Maintenance	
14	Muhammad Ashfaq	Elec Foreman	Maintenance	
15	Affan Raza	Sr. Offic	Admin	
16	Ramiz Hashmi	Sr Officer	Admin	
17	Babar Hussain	Sr. Officer	Admin	
18	Sundas Tasleem	HSE Officer	HSE	
19	Majid Abbasi	CLO	HSE	

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Training Attendance Sheet

Training Title: Welding & Cutting Training			
Trainer's Name: Sundas Tareen			
Training Location:	Conference Room	Trainer's Signature:	
Date	04 Feb, 2020	Time	11:00 AM

Sr.	Name	Company	Signature
(1)	Javed	PoPL	
(2)	Ajmal	PoPL	
(3)	Safeer	"	
(4)	Aqeel	"	
(5)	Mustafa	"	
(6)	Ashfaq	"	
(7)	Tanveer	"	
(8)	Atif	"	
(9)	Wajid	"	
(10)	Naeem	"	
(11)	Sundas Tareen	"	

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Training Attendance Sheet

Training Title:	WASTE DISPOSAL		
Trainer's Name:	Imran Yousaf		
Training Location:	Power House	Trainer's Signature:	
Date	28 Jan 2020	Time	11:00 Am

Sr.	Name	Company	Signature
1	Nisar Ahmed.	Police	
2	Ahsan.	Police	
3	Wazeer	Police	
4	Waheed.	Police	
5	Sohail	Security guard.	
6	Majid Shah.	security guard.	
7	Maqbool Shah.	Security guard	
8	Mehran Shahzab	Incharge Police.	
9	Ramiz Hashmi	DOM	
10	Ali Khan	Driver	
11	Ramiz	office Boy	
12			

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Training Attendance Sheet

Training Title:	Defensive driving training		
Trainer's Name:	Sundas Tareen		
Training Location:	Conference Room	Trainer's Signature:	
Date	27/1/2020	Time	9:30AM

Sr.	Name	Company	Signature
1	ALi	POPL	
2	Nazar shah	"	
3	Javed	"	
4	Ramiz	"	Ramiz
5	Sundas Tareen	"	

Annex-12 COVID-19 Management and Prevention Plan

COVID-19
Management and Prevention Plan

(Version 01; Dated March 17, 2020)

A: COVID-19

The World Health Organization (WHO) has declared a global health emergency and pandemic over the COVID-19. The virus reportedly originated in a seafood market in Wuhan, China. Person to person transmission has also been confirmed. Coronavirus tends to mutate; this makes it difficult to treat and to develop a vaccine against it.

How does it spread? When a person who is infected sneezes or coughs, mucus saliva and respiratory aerosols which contain the virus are sprayed into the surrounding environment. These can then be inhaled by another person, settle on their skin or surrounding surfaces and be transmitted by contact.

What are the Symptoms? The virus causes a flu like illness which develops into pneumonia and can lead to death, especially in older people and young children. Since it is a virus, antibiotics are not going to work against the infection. The COVID-19 symptoms include:

Fever, runny nose, sneezing, coughing, difficulty in breathing

Treatment: There is no specific treatment for the COVID-19. However, many of the symptoms can be treated based on the patient's clinical conditions. Supportive care for infected persons can also be highly effective.

B: Management and Prevention Strategy

Company management and prevention strategy are based on:

- Raising awareness among staff and surrounding communities
- Proactive symptoms monitoring among staff and visitors
- Improvement of personal and workplace hygiene
- Procurement and maintaining stock of necessary monitoring & protective items/apparatus
- Continuous coordination with relevant government departments and surrounding communities

C: Roles and Responsibilities

- All staff are responsible to follow instructions mentioned in this plan.
- Support Services department is responsible to procure the resources required for implementation of this plan.
- Support Services department is responsible to facilitate staff about protocols mentioned in **Sections D-4 and D-5**.

- HSE department is responsible to provide awareness to staff & surrounding communities; and provide advisory to Management for implementation of this plan.

D: Management and Prevention Actions

D-1: Prevention Guide for Staff

Following health tips and instructions are being shared regularly with all staff:

- Clean hands with soap and water for at least 20 seconds or use alcohol-based hand rub.
- Cover nose and mouth when coughing and sneezing with tissue or flexed elbow.
- Avoid close contact with anyone with cold or flu-like symptoms.
- Avoid handshake.
- Thoroughly cook meat and eggs.
- Avoid unprotected contact with live wild or farm animals.
- Maintain a healthy lifestyle.
- Rest and avoid overexertion.
- Drink enough water.
- Avoid smoking and smoky areas.
- Avoid close contact with anyone who has returned from an affected area.
- Avoid travelling to the area which is affected by the COVID-19.
- If any staff member suffering from any or some or all symptoms of the COVID-19, he must report to his departmental Head or Head HSE. Such staff member is encouraged to avail sick leaves.

D-2: Protection and Prevention Measures for Staff

- Company management has issued written memorandum to share important instructions with staff. Please refer to the **Annexure-1** for CEO approved memorandum.
- HSE department has shared written informatory materials with all staff in both English and Urdu languages (Emails, notice boards and hard copies).
- HSE department visited / met with all staff individually to raises their awareness level.
- HSE department has conducted several sessions for staff awareness. Refresher sessions will be conducted periodically.
- HSE and Support Services departments have procured sufficient stock of surgical and N-95 masks.
- Support Services department has procured four (04) state of art apparatus for staff body temperature monitoring.

- HSE and Support Services departments have initiated staff body temperature monitoring program. Body temperature of staff is being monitored twice a day. Please refer to the **Annexure-2** for sample of temperature monitoring sheet.
- Support Services department will procure and install sanitizers units at key locations in the company premises.
- Support Services department will procure spray pumps for improving work place and surrounding areas hygiene.
- Support Services department is ensuring regular disinfection of floors, surfaces etc in company premises.
- Support Service department will conduct periodic fumigation for improving workplace and surrounding areas hygiene.
- Support Services department will ensure that all entrance doors are being kept open during working hours.
- HSE and Support Services departments are also conducting symptoms monitoring of visitors.
- Company is proactively monitoring the situation closely and continuously in surrounding communities and Muzaffarabad.

D-3: Protection and Prevention Measures in Surrounding Communities

- Company community liaison officers (CLOs) has pasted informatory materials in Urdu language at company public notice boards and key locations in the surrounding communities.
- Company CLOs has initiated awareness sessions among the surrounding communities.
- Company CLOs are proactively monitoring the situation closely and continuously in surrounding communities.

D-4: Protocols (if suspected case (s) identified among staff)

If any suspected case (s) identified, following actions will be taken:

- Immediate report to his departmental Head or Head HSE
- Detailed check-up at nearby government designated hospital
- Case (s) to avail sick leaves or work from home until confirmation of negative (The staff is entitled to additional sick leave if it exceeds 12 days.)
- Resumption of duty if found negative without any symptoms
- Follow **D-5 Protocols** if found positive from nearby government designated hospital.

D-5: Protocols (if positive case (s) identified among staff)

If any positive case (s) identified, following actions will be taken:

- Immediate isolation of case (s) from company premises
- Temporary prevention of case (s) from entry on company premises

- Case (s) to avail sick leaves until complete recovery (The staff is entitled to additional sick leave if it exceeds 12 days.)
- Resumption of duty after complete recovery with supporting health fitness certificate

Note: Staff expenses, incurred in above protocols (**D-4 & D-5**), will be reimbursed by the company. Company will provide maximum facilitation to staff, where required.

D-6: Protocols for Visitors Coming from Affected Areas

- They must follow the government procedures such as screening etc when entry to Pakistan.
- Additionally, they must keep themselves in quarantine for 14 days before entry to site. This must be done only in government designated hospital.
- When entering company premises such persons and persons accompanying them must not have any or some of the symptoms of the COVID-19 (Fever, runny nose, sneezing, coughing, difficulty in breathing).

E: Government Designated Hospitals

- Government of Pakistan has designated various hospitals in different parts of the country. Details of these are given in the **Annexure-3**.
- In Muzaffarabad, designated hospitals are Abbas institute of medical sciences (AIMS) and Sheikh Khalifa Bin Zaid (SKBZ) / Combined Military Hospital (CMH)
- Isolation units have been set up in these hospitals.

F: Information Helpline

Government Helpline: 1166

Annexure-1: CEO Approved Memorandum

PATRIND O&M

Memorandum (MRef#HSE012 / 2020)

Subject: Important Note: Coronavirus Disease Breakout

To: All Employees / Staff

All staff are instructed to report their Departmental Head or Senior Manager HSE & CSR if they feel / suffer from any or some of the symptoms (Sneezing, running nose, fatigue, cough, fever and sore throat) of coronavirus disease. Based on the condition, if required, Management may decide about isolation / work at home about staff member suffering from the coronavirus disease symptoms.

In this regards, HSE department has already shared health newsletters both in English and Urdu through email. These are also pasted on company notice boards. Please read these carefully and follow the instructions mentioned in these health newsletters. HSE department will also conduct sessions for all staff awareness.

Date: February 27, 2020

Chief Executive Officer

Page 1 of 1

Annexure-2: Temperature Monitoring Sheet

Temperature Monitoring Data					
	Normal Temprature: (36.1°C -- 37.2°C) (97°F -- 99°F)				Date:
S.N	Name	Department	Tempertaure (F) Morning (9 am to 10	Afternoon (4 pm to 5 pm)	Note / Comment (if any)
Chief Executive Officer					
Support Service Team					
HSE TEAM					
AJK Police [Powerhouse]					
Security Guard [Powerhouse]					
OPERATION TEAM					
Miantenance Team					
Daily Labor					
Weir Site [Staff]					
AJK Police [Weirsite]					
Security Guard [Weirsite]					
KPK Police [Weirsite]					

Annexure-3: Designated Hospitals / Isolation Ward for COVID-19

Designated Hospitals / Isolation Ward for COVID-19

Sr.#	Province / Region	Name of Hospital
1.	ICT	Pakistan Institute of Medical Sciences (PIMS)
2.	Punjab	Benazir Bhutto Hospital, Rawalpindi
3.		Services Hospital Lahore
4.		Nishtar Hospital Multan
5.		Allama Iqbal Memorial Hospital Sialkot
6.		Allied Teaching Hospital, Faisalabad
7.		Sheikh Zayed Hospital, Rahim Yar Khan
8.	Sindh	Civil Hospital, Karachi
9.		Jinnah Postgraduate Medical Centre (JPMC), Karachi
10.		Dow Hospital, Ojha Campus, Karachi
11.		LUMS Hospital, Hyderabad
12.	Baluchistan	Fatima Jinnah General and Chest Hospital, Quetta
13.		Sheikh Zayed Hospital, Quetta
14.		Prince Fahad/ DHQ Hospital, Dalbandin, Chaghi
15.		Jam Mir Ghulam Qadir Hospital Hub Lasbela
16.		DHQ Hospital, Uthal, Lasbela
17.		DHQ Hospital Gawadar
18.		Red Crecent Hospital, Gawadar
19.		GDA Hospital, Gawadar
20.		GDA Hospital, Gwadar
21.		DHQ Teaching Hospital, Turbat
22.	KP	Police Services Hospital, Peshawar
23.		Khyber Teaching Hospital, Peshawar
24.		Hayatabad Medical Complex, Peshawar
25.		Lady Reading Hospital, Peshawar
26.		Bacha Khan Medical Complex, Swabi
27.		Saidu Shareef Hospital, Swat
28.		Ayub Teaching Hospital, Abbottabad
29.	GB	Civil Hospital, Hunza
30.		DHQ Hospital, Gilgit
31.		DHQ Hospital, Chilas
32.		DHQ Hospital, Skardu
33.	AJK	Abbas Institute of Medical Sciences, Muzaffarabad
34.		DHQ Hospital Mirpur, AJK
35.		Shiekh Khalifa Bin Zaid (SKBZ) Hospital, Rawalakot