



JSWHEL/KWHEP/EC/Six-Monthly/25- 14307  
13<sup>th</sup> December 2025

**JSW Hydro Energy Limited**

(formerly Himachal Baspa Power Company Limited)

**Karcham - Wangtoo H. E. Project**

Sholtu Colony, P.O. Tapri - 172104

District Kinnaur (Himachal Pradesh)

CIN. : U40101HP2014PLC000681

Phone : +91 9816507000, 9805002039

Fax : +91 1786 - 261258

To  
The Regional Officer  
Integrated Regional Office  
Ministry of Environment, Forests & Climate Change  
C.G.O Complex, Shivalik Khand, Longwood  
Shimla (H.P)-171001

**Sub: Submission of Six-Monthly Compliance Report for the reporting period  
01.06.2025 to 30.11.2025-Karcham Wangtoo HEP (1045MW), Kinnaur (H.P)**

**Ref: 1. MoEF Letter F No. 6-4/01-RO (NZ)/1866, dated 23<sup>rd</sup> June 2008  
2. MoEF&CC Letter F No. J-12011/47/2005-IA.I, dated 06<sup>th</sup> August 2021**

Dear Sir,

Please find enclosed herewith **Six Monthly Compliance Report** for the reporting period **01.06.2025 to 30.11.2025** in respect of stipulated environmental conditions/safeguards as per letters referenced above pertaining to Environmental Clearance of **Karcham Wangtoo H.E. Project (1045MW), District Kinnaur (H.P)** for your kind information and record.

The test reports of STP, D.G. stack emission, ambient air & noise level and water quality conducted during the last six months and mandatory flow from Karcham Dam for the month of November 2025 are also enclosed with this report.

The report is being submitted through email ID [env.iroshimla.mefcc@gov.in](mailto:env.iroshimla.mefcc@gov.in)

Thanking You

Yours faithfully,  
For **JSW Hydro Energy Limited**

  
(Authorized Signatory)

**Encl: As Above**



Part of O. P. Jindal Group

**Corporate Office :** JSW Centre,  
Bandra Kurla Complex,  
Bandra (East), Mumbai - 400 051

Phone : +91 22 4286 1000

Fax : +91 22 4286 3000

## KARCHAM WANGTOO H.E. PROJECT (1045 MW), KINNAUR, HIMACHAL PRADESH

Status of compliance of the stipulated environmental conditions / safeguards as per MOE&F, Environmental Clearance Letter No. J-12011/47/2005-IA-I dated 09.11.2005 and additional/specific conditions as per MoEF& CC, Expansion in Environment Clearance letter no. F.No. J-12011/47/2005-IA. I dated 06.08.2021 for Reporting Period 01.06.2025 to 30.11.2025.

Part – A: Specific Conditions									
i)	3503 ha. Degraded area proposed for Catchment Area Treatment. The action plan for Catchment Area Treatment proposed in the EMP report is reproduced below. The cost of the CAT Plan is Rs. 31.944 crores. The user agency shall transfer the cost of Catchment Area Treatment Plan in favour of Forest Department in a phased manner as per the scheme.							The CAT Plan is being implemented by the H.P. Forest Department. Full payment amounting to Rs. 31.944 crores has already been made by the Project Authorities to the Forest Department, H.P. for implementation of the CAT Plan.	
	Sl. No.	Treatment	1 <sup>st</sup> year (Area in ha)	2 <sup>nd</sup> year (Area in ha)	3 <sup>rd</sup> year (Area in ha)	4 <sup>th</sup> year (Area in ha)	5 <sup>th</sup> year (Area in ha)		6 <sup>th</sup> year (Area in ha)
	<b>Soil Conservation</b>								
	i)	Tree Plantation	266	256	249	183	164		155
	ii)	Plantation	193	184	181	126	125		99
	iii)	NTPF / Medicinal Plant	81	73	73	65	57		57
	iv)	Check Walls	22	14	10	10	9		9
	v)	Private land development	83	73	73	63	55		51
	vi)	Pasture improvement	89	80	80	71	62		62
		<b>Total</b>	<b>734</b>	<b>680</b>	<b>666</b>	<b>518</b>	<b>472</b>		<b>433</b>
		<b>Year-wise cost allocation (Rs. in lakhs)</b>	<b>762.38</b>	<b>569.48</b>	<b>480.78</b>	<b>395.93</b>	<b>366.99</b>	<b>618.84</b>	
ii)	During the lean season minimum 6.8 cumecs water should be released downstream of the dam.							Two 800 mm dia steel pipes with control valves / gates have been provided in the dam body to release minimum 6.8 cumecs water downstream of the dam. Presently, 7.38 cumecs is being released in pursuance of H.P. Govt. notification dated 26 <sup>th</sup> July, 2011 to 15% of minimum flow observed in the lean season.	

*[Handwritten Signature]*

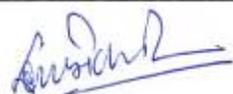
		Minimum flow immediately downstream of diversion Structure (Karcham Dam) for the month of November 2025 is enclosed herewith as <b>Annexure-1</b> .
iii)	For the uplifting of socio-economic life of local people, priority should be given in jobs according to their qualifications.	In accordance with the Second Supplementary Implementation Agreement signed with H.P. Govt. during Dec' 2007, the Company has provided employment to bonafide Himachalis considering their availability and suitability required for implementation of the Project (after deployment of the surplus workers from other Projects of the Company).
iv)	31 families are likely to be affected due to this Project. The affected families / persons must be rehabilitated as per approved R & R policy of Govt. of Himachal Pradesh. The economic rehabilitation of the affected population shall be covered through vocation training e.g. rabbit farming activities etc.	The affected families / persons have been rehabilitated as per approved R & R Policy of Govt. of Himachal Pradesh conveyed by Deptt. of Revenue (Project Cell) vide notification No. Rev (PD)F(5)-4/99 dated 31 May, 2006.  The Company is also providing employment to Project affected families as per the provisions of rehabilitation and re-settlement Plan of the H. P Government.
v)	The Project area contains 2 major slide zone, viz. Urni rock slide zone on the right bank and rock debris on the left bank. During tunnel boring controlled blasting with very low charge and mild explosives should be used under close supervision.	During excavation of the tunnel, controlled blasting had been resorted to with very low charge and use of mild explosives under close supervision of scientists from Central Mining Research Institute (CMRI). Monthly report of seismograph observations of tunnel excavation was regularly submitted to the District Authorities.

*Ameshtand*

vi)	The Fish Management Plan approved by State Fisheries Department for the conservation of migratory fish, development of hatchery for artificial seed production and stocking of reservoir and river stretch should be implemented.	Fish Management Plan is being implemented by the State Fisheries Department for which funds amounting to Rs. 180 lakhs as earmarked in the EMP had already been deposited with Deputy Commissioner, Kinnaur.
vii)	As the dam height is more than 30 m clearance from National Committee of Seismic Design Parameters (NCSDP) of Central Water Commission (CWC) should be obtained.	The clearance of Seismic Design Parameters for design of dam has already been accorded by the National Committee of Seismic Design Parameters of CWC, Govt. of India during August, 2007. The Dam design/execution has been done accordingly.
<b>Part B: General Conditions</b>		
i)	Adequate free fuel arrangement should be made for the labour force engaged in the construction work at Project cost so that indiscriminate felling of trees is prevented.	Adequate free fuel arrangements had been made for the labor engaged in construction work.
ii)	Fuel Depot may be opened at the Site to provide the fuel (kerosene / wood / LPG). Medical facilities as well as recreational facilities should also be provided to the labourers.	The Project Authorities had opened a Fuel Depot to provide the fuel to the Staff / Workers.  Free medical facilities are available through a 40 Bedded multi-specialty Hospital since September, 2009. Recreational facilities have been provided for the labourers.
iii)	All the labourers to be engaged for construction works should be thoroughly examined by health personnel and adequately treated before issuing them work permit.	The labourers engaged for construction works were thoroughly examined by health personnel of the Project Hospital / Unit and adequately treated before issuing them the work permit.

*Handwritten signature*

iv)	Restoration of construction areas including dumping sites of excavated materials should be ensured by leveling, filling up of burrow pits, landscaping etc. The area should be properly treated with suitable plantation.	Restoration work of construction areas including dumping sites has already been completed. Dumping sites have been handed over to the forest department after reclamation/restoration by planting suitable trees, preferably native species like pines, wild apricot etc.
v)	Financial provision should be made in the total budget of the project for implementation of the above suggested safeguard measures.	Financial provision of Rs. 154.4622 crores as per clearance accorded by the MoE&F, GOI, has been made in the budget of the Project for implementation of the suggested safeguard measures.
vi)	A monitoring committee for implementation of R & R should be constituted which must include a SC / ST representative from project affected persons and a women beneficiary.	Govt. of Himachal Pradesh has constituted, during February, 2006, a District Level Karcham Wangtoo Project Oustees Rehabilitation and Advisory Committee in this respect.
vii)	A Multidisciplinary Committee should be constituted with representatives from various disciplines of forestry, ecology, wildlife, soil conservation, NGO etc. to oversee the effective implementation of the suggested safeguard measures.	Govt. of H.P. has constituted during Dec., 2006 a Local Area Development Committee (LADC) under Chairmanship of MLA, Kinnaur to oversee implementation of the suggested safeguard measures.  The H P Govt. has also during February, 2007, constituted a Multi-Disciplinary Committee under the Chairmanship of Chief Minister, H.P. to monitor these issues.
viii)	Six monthly monitoring reports should be submitted to the Ministry and its Regional Office, Chandigarh for review.	Six monthly reports ending 31 <sup>st</sup> May and 30 <sup>th</sup> November each year are being submitted to the Regional Office of the Ministry.



Additional/specific conditions as per the Amendment/Expansion in Environment Clearance		
i)	More plantation activities may be adopted focusing to stabilize the hill slopes on the banks of river in consultation with the State Forest Department. Plantation Plan will be submitted to the regional Office of the Ministry.	Regular plantation is being done through forest department to stabilize the hill slopes on the banks of the river.
ii)	Compensatory afforestation by Forest Department, the survival rate of plant shall maintain more than 90%.	The survival rate of the compensatory afforestation by the forest department will be maintained more than 90%.
iii)	The status of compliance will be submitted to the regional Office of the Ministry along with six monthly compliance report.	Six monthly reports ending 31 <sup>st</sup> May and 30 <sup>th</sup> November each year are being submitted to the Regional Office of the Ministry.
iv)	The proposed capacity enhancement shall be implemented as per directions of the CEA. After enhancing capacity from 1000 MW to 1045 MW in stage-1, 1 month EIA study shall be carried out and report shall be submitted to Ministry. After getting satisfactory letter from MoEF&CC then only PP can move forward for stage -2 enhancement i.e. 1045 to 1091 MW.	Capacity enhancement has been implemented as per directions of the CEA. One month EIA study has been conducted. The contents of the EIA report have been enclosed as <b>Annexure -2</b> for your kind reference.
v)	A multi-specialty hospital to cater the need of people living within 10 km radius of the project shall be established.	A Multi- specialty <b>Jindal Sanjeevani Hospital</b> is already established to cater the need of people living within 10 KM radius of the project. Also, the treatment to the peoples of project affected panchayats is provided on subsidized rates. (Details on Jindal Sanjeevani Hospital is attached as <b>Annexure-3</b> for kind reference)



vi)	Solar panel be provided to the families living in rural areas within 10 km radius of project.	Solar panels as well as solar lights are being provided to the families living in rural areas within 10 km radius of project. The details of the solar lights, panels and lamps provided is summarized and enclosed as <b>Annexure-4</b> .
vii)	Computer labs with internet facility shall be established in primary schools within 10 km radius of project.	Computer labs as well as smart classes facility have been provided to the schools within 10 km radius of project. Details attached as <b>Annexure-5</b> .
viii)	Sport complex with multi- sport facility shall be established. The children's from economically weaker section shall be given free of cost sport facility.	Two High altitude boxing academy (HABA) with multi-sport facility for boxing has been established at Sangla and Nichar. All the facilities are being provided free of cost to the boxing trainees. The facilities like Gym, change rooms, Lockers and toilets are available inside these HABAs. Professional coaches are providing training in these High-altitude boxing academies (HABA).  At present 90 boxers are being provided training at four centres. During training, protein rich diet is also provided to the trainees along with boxing equipment and accessories. All these facilities are provided free of cost One Strength and Conditioning (S&C) Coach has also been deployed for these HABAs, who will establish and maintain the strength and conditioning program for the Boxers with the three major goals of improving boxers performance, reducing injuries and teaching lifelong fitness and movement skills. Details of sports activities are enclosed as <b>Annexure-6</b> .
ix)	The Multi-Disciplinary Committee needs to be reconstituted and	Draft composition of the multidisciplinary committee



	<p>the meeting needs to be held at regular interval</p>	<p>along with consent/approval of each member/ representative from different field has been sent to the Ministry on 06.04.2023 for approval.</p> <p>However, Ministry of Environment, Forest and Climate Change (MoEF&amp;CC) on dated 30.05.2024 has requested the Department of Environment, Science Technology and Climate Change, Govt. of Himachal Pradesh to constitute a Multidisciplinary Committee to oversee the implementation of the suggested safeguards proposed in EIA/EMP during construction of Karcham Wangtoo HEP. <b>(Annexure- 7).</b></p>
<p>x)</p>	<p>Recommendations of the Cumulative Impact Assessment and Carrying capacity Study of Satluj River Basin Study shall be followed strictly.</p>	<p>Will be followed.</p>
<p>xi)</p>	<p>PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground. A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis.</p>	<p>Environmental parameters such as air and water quality is regularly being monitored by the third party. Recent test results are enclosed as <b>Annexure-8.</b></p> <p>The environmental monitoring laboratory with all requisite equipment/instruments has been established in the project site (Karcham Dam). (Details of Environmental Monitoring Lab is enclosed as <b>Annexure-9</b> for kind reference).</p>

*Amend*

For JSW Hydro Energy Limited  
  
 (Authorized Signatory)



o/c

**JSW Hydro Energy Limited**  
(formerly Himachal Baspa Power Company Limited)

**Karcham - Wangtoo H. E. Project**  
Sholtu Colony, P.O. Tapri - 172104  
District Kinnaur (Himachal Pradesh)  
CIN. : U40101HP2014PLC000681  
Phone : +91 9816507000, 9805002039  
Fax : +91 1786 - 261258

JSWHEL/KW/PCB/Min.Flow/25- 14295  
02<sup>nd</sup> December 2025

To,

The Member Secretary,  
H.P. State Pollution Control Board,  
Him Parivesh, Phase-III  
Shimla – 171 009

**Sub:** Karcham Wangtoo H.E.P.  
- Minimum Flow Immediately Downstream of Diversion Structure.

**Ref:** Consent to Operate letter no. HPSPCB/PCB-ID10383 dated 13.02.2018.

Dear Sir,

Kindly find enclosed herewith the details of minimum flow released immediately downstream of diversion structure, **Karcham Dam** during the month of **November-2025**.

Thanking you.

Yours faithfully,  
For **JSW Hydro Energy Limited**

(Vikas Sharma)  
Manager

**Encls:** As above.

**Copy to:** The Environmental Engineer,  
HPSPCB, Opposite Indira Market,  
Rampur, District – Shimla (H.P.) ----- For information please.

**MONTHLY STATEMENT OF MINIMUM FLOW DOWNSTREAM OF DIVERSION STRUCTURE**

**NAME AND ADDRESS OF PROJECT : Karcham Wangtoo H.E.P. (1045 MW)**

**FOR THE MONTH : Nov-25**

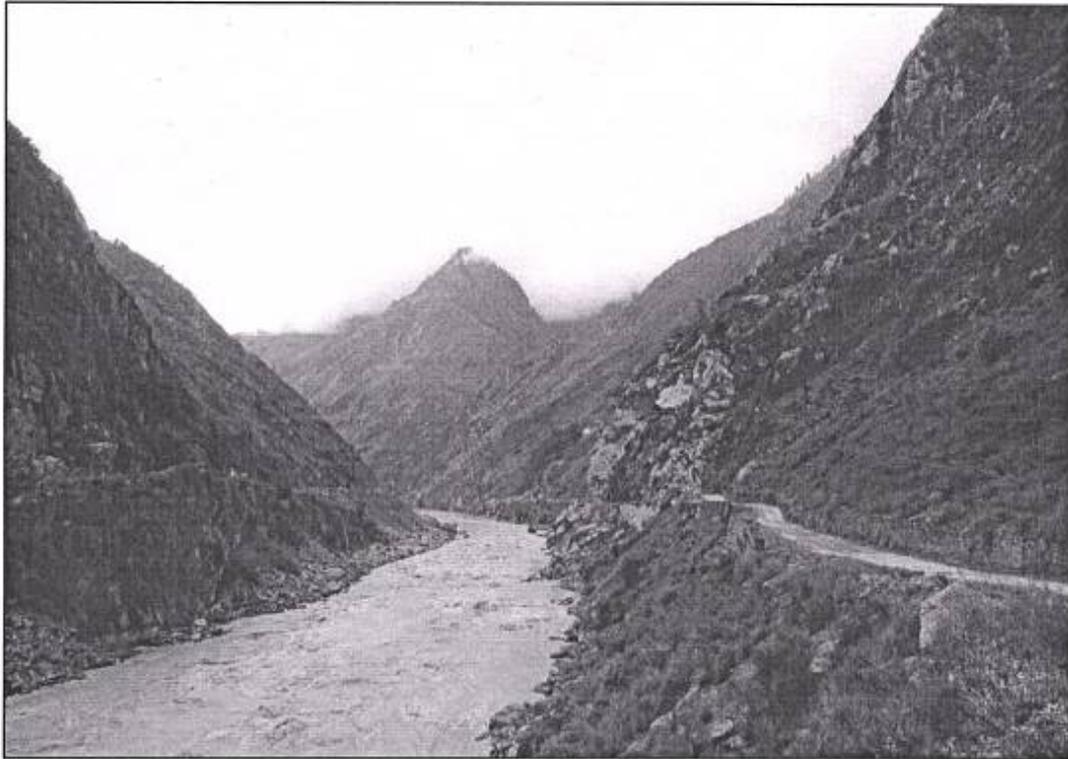
Unit : Cumec

Sr. No.	Date	Observed River (Satluj) inflow in the diversion structure	Flow immediately D/S of Diversion Structure		Remarks
			As per CEA notification	Flow actually released immediately D/S of Diversion Structure	
1	01-11-2025	134.42	7.38	7.64	
2	02-11-2025	132.09	7.38	7.56	
3	03-11-2025	130.33	7.38	7.59	
4	04-11-2025	130.29	7.38	7.59	
5	05-11-2025	131.17	7.38	7.57	
6	06-11-2025	123.21	7.38	7.55	
7	07-11-2025	120.28	7.38	7.57	
7	08-11-2025	122.82	7.38	7.54	
9	09-11-2025	122.43	7.38	7.57	
10	10-11-2025	118.61	7.38	7.53	
11	11-11-2025	113.21	7.38	7.54	
12	12-11-2025	111.30	7.38	7.53	
13	13-11-2025	109.99	7.38	7.56	
14	14-11-2025	106.53	7.38	7.54	
15	15-11-2025	108.80	7.38	7.53	
16	16-11-2025	110.02	7.38	7.58	
17	17-11-2025	111.96	7.38	7.55	
17	18-11-2025	109.50	7.38	7.53	
19	19-11-2025	109.03	7.38	7.54	
20	20-11-2025	102.92	7.38	7.53	
21	21-11-2025	102.75	7.38	7.53	
22	22-11-2025	101.21	7.38	7.57	
23	23-11-2025	97.58	7.38	7.55	
24	24-11-2025	96.49	7.38	7.55	
25	25-11-2025	93.79	7.38	7.58	
26	26-11-2025	92.02	7.38	7.59	
27	27-11-2025	95.26	7.38	7.59	
27	28-11-2025	94.37	7.38	7.99	
29	29-11-2025	96.22	7.38	8.14	
30	30-11-2025	95.71	7.38	7.81	

Name & Designation of the person submitting the Statement

Signature  


**ENVIRONMENTAL IMPACT ASSESSMENT (EIA)  
KARCHAM WANGTOO HYDRO ELECTRIC PROJECT  
(1091 MW)  
(Sector 1(c); Cat "A")**



**DECEMBER, 2022**

*Prepared for:*

**M/s JSW HYDRO ENERGY LIMITED, KINNUAR, H.P.**

*Prepared by:*



**R S Envirolink Technologies Pvt. Ltd.**

**QCI Certificate No. : NABET/EIA/1922/SA 0144**

**403, BESTECH CHAMBER, B-BLOCK, SUSHANT LOK-I, GURGAON**

**Ph: +91-124-4295383: [www.rstechnologies.co.in](http://www.rstechnologies.co.in)**

**Laboratory:**

**AGSS Analytical and Research Lab (P) Ltd.  
An ISO-9001: 2015 Accredited Laboratory  
(NABL Accredited Testing Laboratory)**

**Baseline Data Monitoring Period:**

**Monsoon (August 2022)**



# Quality Council of India



National Accreditation Board for  
Education & Training

## Certificate of Accreditation

### R S Envirolink Technologies Pvt. Ltd

403, Bestech Chamber Commercial Plaza, B Block, Sushant Lok – I, Gurgaon- 122009, Haryana

The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA-EMP reports in the following Sectors –

Sl.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals- opencast only	1	1 (a) (i)	A
2	River Valley projects	3	1 (c)	A
3	Oil & gas transportation pipeline (crude and refinery/ petrochemical products), passing through national parks/ sanctuaries/coral reefs /ecologically sensitive Areas including LNG terminal	27	6 (a)	A
4	Jetties only	33	7 (e)	A
5	Highways	34	7 (f)	A

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SA AC minutes dated July 27, 2021 posted on QCI-NABET website.

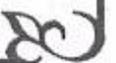
The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/21/2143 dated November 22, 2021. The accreditation needs to be renewed before the expiry date by R S Envirolink Technologies Pvt. Ltd., Gurgaon following due process of assessment.

Sr. Director, NABET  
Dated: November 22, 2021

Certificate No.  
NABET/EIA/1922/SA 0144

Valid up to  
14.08.2022

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.



---

## CONTENTS

---

	<b>Page No.</b>
<b>CHAPTER 1: INTRODUCTION</b>	
1.1 PURPOSE OF THE REPORT	1.1
1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT	1.1
1.3 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT	1.2
1.4 SCOPE OF THE STUDY	1.2
<b>CHAPTER 2: PROJECT DESCRIPTION</b>	
2.1 TYPE OF PROJECT	2.1
2.2 NEED FOR THE PROJECT	2.1
2.3 LOCATION	2.1
2.4 SIZE OR MAGNITUDE OF OPERATION	2.2
2.5 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION	2.3
2.6 TECHNOLOGY AND PROCESS DESCRIPTION	2.3
2.7 PROJECT DESCRIPTION	2.4
2.7.1 Projects in Vicinity	2.5
2.7.2 Land Requirement	2.7
2.7.3 Infrastructural facilities	2.7
2.7.4 Muck Disposal Areas	2.7
2.8 MITIGATION MEASURES INCORPORATED INTO THE PROJECT	2.8
2.9 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY FOR THE RISK OF TECHNOLOGICAL FAILURE	2.8
<b>CHAPTER 3: DESCRIPTION OF THE ENVIRONMENT</b>	
3.1 INTRODUCTION	3.1
3.2 STUDY AREA, PERIOD, COMPONENTS & METHODOLOGY	3.1
3.2.1 Study Area	3.1
3.2.2 Study Period	3.1
3.2.3 Study Components	3.3
3.2.4 Methodology	3.3
3.2.4.1 Soil	3.4
3.2.4.2 Air Environment	3.4
3.2.4.3 Sound Levels & Traffic Monitoring	3.5
3.2.4.4 Water Environment	3.7
3.2.4.5 Biological Environment	3.9
3.3 ESTABLISHMENT OF BASELINE FOR VALUED ENVIRONMENTAL COMPONENTS	3.11
3.3.1 Physical Environment	3.11
3.3.1.1 Geology	3.11
3.3.1.2 Meteorology	3.12
3.3.1.3 Soil	3.15

---

---

3.3.1.4	Ambient Air Quality and Noise Environment	3.20
3.3.1.5	Water Environment	3.24
3.2.2	Biological Environment	3.31
3.2.2.1	Forest Type	3.31
3.2.2.2	Floristics	3.31
3.2.2.3	Faunal Diversity	3.48
3.2.2.4	Aquatic Ecology	3.53
3.2.2.5	Conclusion	3.55

#### **CHAPTER 4: ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

4.1	DETAILS OF INVESTIGATED ENVIRONMENTAL IMPACTS	4.1
4.2	ASSESSMENT OF ENVIRONMENTAL FLOW	4.2
4.3	ASSESSMENT OF CHANGE OF HABITAT DUE TO INCREASED DISCHARGE	4.9
4.4	SAFETY ASSESSMENT DURING OPERATION AT HIGHER CAPACITY	4.11

#### **CHAPTER 6: ENVIRONMENTAL MONITORING PLAN**

5.1	INTRODUCTION	5.1
5.2	COMPLIANCE OF ENVIRONMENTAL CLEARANCE CONDITIONS OF KARCHAM WANGTOO HEP (1000 MW)	5.1
5.2.1	Specific Conditions	5.1
5.2.2	General Conditions	5.4
5.3	ADDITIONAL/ SPECIFIC CONDITON STIPULATED WITH AMENDMENT OF ENVIRONMENTAL CLEARANCE OF KARCHAM WANGTOO HEP	5.10

---

---

## LIST OF TABLES

---

Table 2.1: Salient features of the Project	2.4
Table 3.1: Soil Sampling Locations	3.4
Table 3.2: Sites for Ambient Air Quality Monitoring in the Study Area	3.5
Table 3.3: Sites for Sound and Traffic monitoring in the study area	3.5
Table 3.4 Sampling Sites for Water Quality and Aquatic Ecology	3.7
Table 3.5: Groundwater Sampling Locations	3.7
Table 3.6: Sampling Locations for Vegetation Sampling	3.9
Table 3.7: Sampling Sites for Faunal Survey	3.11
Table 3.8: Summary of Wind Pattern in the Study Area during Different Months	3.15
Table 3.9: Soil types and Land classification in the Study Area	3.16
Table 3.10: Physico-Chemical Characteristics of Soil	3.18
Table 3.11: Soil Fertility Rating as Per Soil Fertility Book	3.18
Table 3.12: Soil Fertility Rating in the Study Area	3.18
Table 3.13: Ambient Air Quality in the Study Area (Unit: mg/m <sup>3</sup> )	3.20
Table 3.14: Air Quality Index for Different Monitoring sites	3.22
Table 3.15: Equivalent Noise Levels (Leq db(A) in the Study Area	3.22
Table 3.16: Average Daily Traffic in the Study Area	3.23
Table 3.17: Physico-Chemical Characteristics of Surface Water at Different Sampling Locations	3.25
Table 3.18: Water Quality Criteria for Designated Best Use By CPCB, New Delhi	3.26
Table 3.19: Physico-Chemical Characteristics of Groundwater	3.27
Table 3.20: Number of Species in different Plant group	3.32
Table 3.21: List of Angiosperms	3.32
Table 3.22: List of Gymnosperms recorded from the study area	3.35
Table 3.23: List of Lower plants recorded from the study area	3.35
Table 3.24: Conservation Status of Plant Species as per IUCN ver. 2022-1	3.36
Table 3.25: Community Structure –Trees	3.39
Table 3.26: Community Structure –Shrubs	3.39
Table 3.27: Community Structure –Herbs	3.40
Table 3.28: Density (Plants Per Ha)	3.43
Table 3.29: IVI of Trees in the Study Area	3.43
Table 3.30: A/F Ratio of Tree Species	3.44
Table 3.31: Species Diversity Index (H)	3.45
Table 3.32: Evenness Index (E)	3.46
Table 3.33: Medicinal Plant Species in the Study Area	3.46
Table 3.34: Economically Important Plant Species	3.47
Table 3.35: List of Mammalian Species Reported in the Study Area	3.48
Table 3.36: List of Birds Reported from the Study Area with Their Conservation Status	3.49
Table 3.37: List of Herpetofauna Reported from the Study Area	3.50
Table 3.38: Butterflies Recorded from the Study Area	3.50
Table 3.39: Phytoplankton recorded from the study area	3.53

---

---

Table 3.40: Zooplankton found in the study area	3.54
Table 4.1: Discharge, EFR and generation Data during Monsoon of 2021	4.2
Table 4.2: Discharge, EFR and generation Data during Monsoon of 2022	4.5
Table 4.3: Model Output for 417 cumec discharge	4.9
Table 4.4: Model Output for 453 cumec discharge	4.10
Table 4.5: Difference in Values due to Increase in discharge	4.10
Table 5.1: Status of Plantation activities at restored construction sites of Karcham Wangtoo HEP	5.4
Table 5.2: Locations and area of dumping sites selected for the plantation	5.11
Table 5.3: Facilities available in Project Hospital Sholtu	5.13
Table 5.4 Details of Installation and Distribution of solar lights	5.16
Table 5.5: Achievements in SHIKHAR	5.17

---

#### LIST OF FIGURES

---

Figure 2.1: Map showing location of Karcham Wangtoo HEP	2.2
Figure 2.2: Layout Map of the Karcham Wangtoo HEP	2.6
Figure 2.3: L: Section of Sutlej River with the Hydropower Projects locations	2.7
Figure 3.1: Map Showing Study Area	3.2
Figure 3.2: Map of Study Area Showing Location of Soil and Air Noise and Traffic Monitoring Site	3.6
Figure 3.3: Map of study area showing sampling location of Water and Terrestrial Ecology	3.8
Figure 3.4: Average Mean Monthly Maximum and Minimum Temperature	3.13
Figure 3.5: Mean Monthly Average Rainfall and Number of Rainy Days in the study area	3.13
Figure 3.6: Annual Rainfall for the last five years in the study area	3.14
Figure 3.7: Mean Monthly Average Max Wind Speed in the Study Area	3.14
Figure 3.8: Wind Rose Diagrams	3.15
Figure 3.9: Soil Type Classification Map of the Study Area	3.17

---

#### LIST OF ANNEXURES

---

Annexure I: Amendment of Environmental Clearance accorded by MoEF&CC vide letter no. J-12011/47/2005-IA. I, dated: 36.08.2021
Annexure II: Compliance to TOR
Annexure IIa: Weather Data
Annexure IIb: Wind Rose
Annexure III: Report of Central Board of Irrigation and Power (CBIP)
Annexure IV: Fund Utilization Certificate for CAT Plan
Annexure V: Employment for Local Peoples
Annexure VI: Fund Utilization Certificate for Fisheries Development Plan
Annexure VII: Clearance letter from NCSDP
Annexure VIII: Details of Multidisciplinary Committee during Construction period

---

---

Annexure IX: Six monthly compliance report KWHEP, June-2022

Annexure Xa: Fund Utilization Certificate for Plantation and Slope Stabilization Work by forest Department

Annexure Xb: Planning for plantation work and expenditure details by forest Department for FY 2022-23

Annexure Xla: 18. Letter from District Administration for operationalization of DCHC at JSW Hospital Sholtu

Annexure Xlb: Details of Medical Support during Pandemic

Annexure Xlc: Advertisement for recruitment of doctors

Annexure XII: Acknowledge & Appreciation letter from Head of Schools

Annexure XIII: Details of Multidisciplinary Committee

---

### Jindal Sanjeevani Hospital

A Multi -Specialty Hospital i.e. ***“Jindal Sanjeevani Hospital”*** is established with latest equipment’s, laboratory and other treatment services to cater the need of people living in Distt Kinnaur. The treatment to the peoples of the project affected panchayats is being provided at a discounted rate.

Following are the highlights of Jindal Sanjeevani Hospital: -

1. Best-in-Class 40 Bedded Hospital.
2. Highly trained Doctors & Paramedical Staff.
3. Around 12000 OPD’s per annum.
4. Around 450-550 IPD/Day Care per annum.
5. Two Fully loaded critical care/advanced life support ambulance, one ambulance with Transport ventilator which is one of its kind in the state.
6. Three basic life support ambulances.
7. High versatile emergency department/casualty open 24x7 all days & night with cardiac monitors, ICU ventilator, central oxygen and suction supply, biphasic defibrillator etc for management of all critical and emergency cases.
8. Modern, well equipped fully aseptic Operation Theatres with all major and minor Gynaecology and Obstetrics operation with spinal and general anaesthesia with advanced OT, ICU ventilators and machines.
9. State of art labour room with hydraulic, electrical labour table, attached Gynae Operation Theatre, Neonatal Resuscitation unit (New born baby revival unit), Phototherapy (for New born Jaundice ) & Ultrasound for Pregnancy etc.
10. Central Gas Manifold with pipeline for Oxygen, Suction and Nitrous Oxide for the complete hospital and operation theatres.
11. Advanced Dental unit with major procedures being done like RCT, Extraction, Bridge and RVG.
12. Modern laboratory with latest equipment like fully automatic Hormone Analyser and Biochemistry Analyser (newly introduced) for multiple, equivalent with the best standards advanced lab tests like Thyroid, Infertility, Heart Attack, Cancer etc with report available on the same day with rates less than that compared to reputed labs like Lal Path and SRL Ranbaxy.

## Annexure-3

13. Upgraded catering to benchmark Radiology department with 500 MA(HF) X-Ray Machine, with CR system, vertical buckeye stands with multiple direction table, low radiation exposure to patients and high quality images. Finally, no dark room involved for X-Ray plates development and no toxic hazard with silver nitrate solution which was used as a developer in dark room with precautions to prevent radiation exposure (lead shield, walls reinforced with lead glass pane which prevents radiation scatter etc). Also a 100 MA portable machine and C-Arm (image Intensifier in the OT).
14. Very well stocked medical store with all medicines and surgical items from reputed pharmaceutical companies at concessional rates.
15. 25-40% concession given to employees, Project Affected Villagers in all hospital services including lab & indoor.
16. Well-furnished sterile and with all facilities private wards recently inducted (with pipeline oxygen) cardiac monitor, TV, Good Furniture, Modern hydraulic beds, attached bathroom and general wards with 24x 7 nurse call, nursing station, cleaning services. ICU & high dependency unit (HDU) also available with advanced facilities.
17. Laundry with modern washing machines for hospital, infected clothes etc.
18. One of its kind Biomedical Waste Plant with dual chamber incinerator (only one available in private hospitals in Himachal Pradesh) Shredder, Autoclave Concrete Pit to handle and treat, all hospital Biomedical Waste without any pollution to the environment with latest Biomedical Waste Act 2016. Also online continuous emission monitoring system (OCEMS) for flue gas emission connected with Himachal Pradesh Pollution Control Board and Central Pollution Control Board and can be upgraded for dioxins also.
19. Modern hospital information service fully computerised, for registration, medical records, and data storage.
20. Govt. Schemes available like Aadhar Link Birth Registration, Ayushman Bharat and Universal Immunisation etc.
21. Audiometry & Spirometry available for employees, PAV and adjoining population in Kinnaur and nearby district.
22. We have also started providing TMT (Treadmill Test) services as part of our comprehensive diagnostic facilities. This service is conducted in a fully equipped and well-monitored environment to ensure patient safety and accurate results for detecting ischemic heart disease, arrhythmias, and other cardiovascular conditions.



**Services: -**

Services being provided to the patients at Jindal Sanjeevani Hospital are OPD, IPD, Major and minor Operations, Deliveries, Emergency Room Attendance, Intensive Care Unit, X-Ray, ECG, lab Investigations, Dental Services, Physiotherapy, Audio Metry, Spiro Metry & TMT.



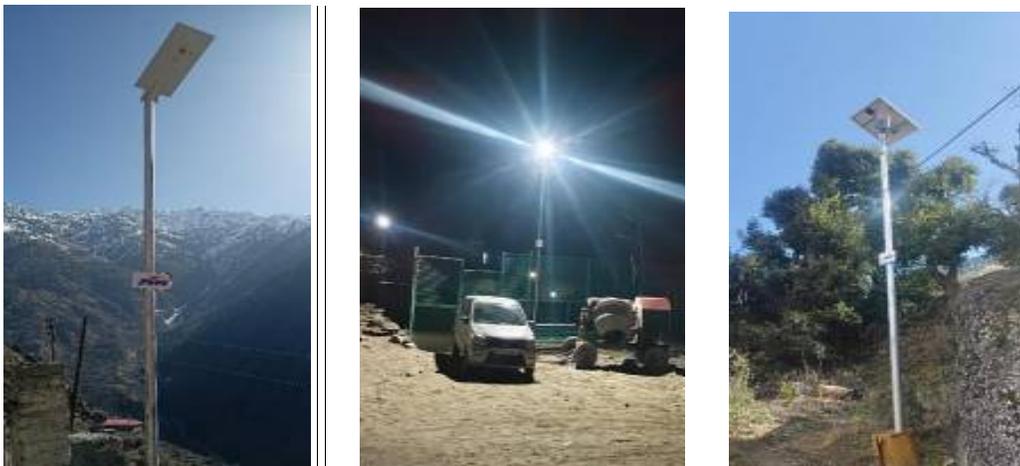
The total strength of the hospital is 43 No's including Gynaecologistt, Ananesthetist, General Practitioner & Dentist, Nurses, Technicians, Compounder & helpers etc.

**Installation of solar lights in the nearby community.**

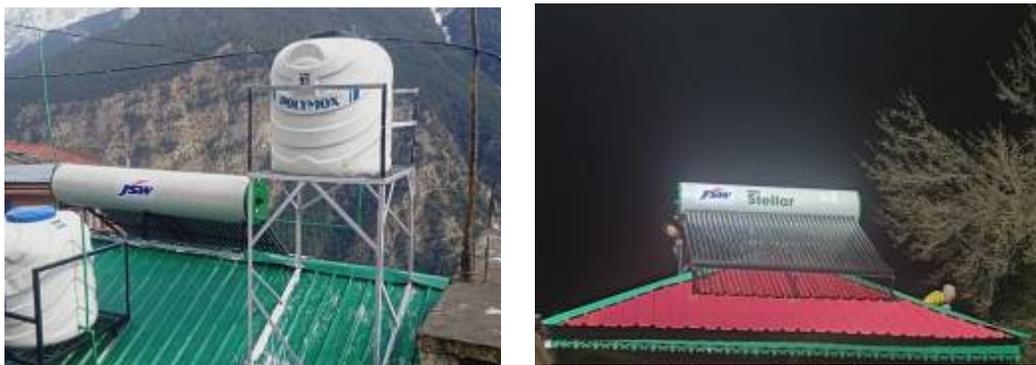
In rural area like Kinnaur, the electricity remains interrupted especially in winters. In such areas solar lights are the best options. These lights provide a convenient and cost-effective way to light streets at night without the need of AC electrical grids for pedestrians.

Since these lights are fully powered by solar energy, they are considered to be a green alternative to traditional lighting.

To promote the renewable source of energy, JSW Hydro Energy installed 122 Solar Street Lights at various locations of its project area. JSW Hydro Energy also installed 05 Solar Geysers also in the community which enables them to get hot water throughout the year which is the need of the community due to cold temperature in the region.



**Solar Street Lights and High Mast Lights**



**Solar Geysers**

## Activates in the field of education- JSW Hydro Energy Limited.

### 1. Establishment of Computer Lab and distribution of desktop: -

Technology always plays a vital role in development. Education world is full of possibilities. Now a day education is passing through the phase of technological innovations.

In the field of education, JSW Hydro Energy established a Computer lab at JVM, Sholtu by installing 22 Computers with all accessories. The students of this school belong to the surrounding area of the project.

Desktops with UPS has been provided to 10 Govt. Schools of the area within 10 KM of radius of project.



Computer lab established at JVM School



Desktop & UPS provided to Govt. Schools

### 2. Establishing Digital classrooms

JSW Hydro Energy Limited has established 20 digital class rooms in 17 Schools of the area within 10 KM of radius of project with its partner "Extramarks".

It consists of providing hardware material like Projector, White board, Computer, UPS, Cabinet, Speaker and software material in Hindi and English. It covers both State board and CBSE. 2426 students are being benefitted apart from teachers.



Proper training has been provided to the teachers for operating the system.

**Sports Development:**

Under the sports initiative, JSW Hydro has taken the Boxing as its Flagship program and named it “**SHIKHAR**”. This program is running in and around project area. Under this program, training on boxing is provided to the young talent of the area through professional coaches. During training, protein rich diet is also provided to the trainees along with boxing equipment and accessories.

Presently, the intervention of JSW Hydro Energy is at 04 Centres of the area and training to 90 boxers is being provided. All these facilities are provided free of cost.

Two HABA (High Altitude Boxing Academies) have been constructed at Nichar and Sangla so as to ensure all weather training to the trainees. The facilities like Gym, change rooms, Lockers and toilets are available inside these HABAs. Professional coaches are providing training in these HABAs.

It is due to our intensive intervention that our boxers have won 537 Medals at various levels.

**Medal tally since our interventions:**

**Detail of Medals won in various events since our intervention**

S.No.	Medals	International	National	North Zone	State	District	Total
1	Gold	3	13	3	205	33	257
2	Silver	1	19	4	83	20	127
3	Bronze	3	27	3	102	18	153
<b>Total</b>		<b>7</b>	<b>59</b>	<b>10</b>	<b>390</b>	<b>71</b>	<b>537</b>



**HABA (High Altitude Boxing Academy)**



**Training being provided by professional coaches**

### **Participation in various competitions:**

- ❖ **Girls & Boys H.P. Youth State Boxing Championship:** 14 SHIKHAR Boxers participated in Girls & Boys H.P. Youth State Boxing Championship held at Shimla from 12/04/2025 To 16/04/2025 and won 09 Medals (Gold- 02, Silver- 02, Bronze-03)
- ❖ **U 14 School National Championship:** 03 SHIKHAR Boxers participated in U 14 School National Championship held at Delhi from 22/04/2025 to 28/04/2025.
- ❖ **U 19 National School Games:** 01 SHIKHAR Boxer participated in U 19 National School Games held at Delhi from 30/04/2025 to 05/05/2025 and won Bronze medal.
- ❖ **Khelo India Youth championship:** 01 SHIKHAR Boxer participated in Khelo india Youth championship held at Patna from 10/05/2025 to 14/05/2025.
- ❖ **Junior Boys & Girls State Championship:** 16 SHIKHAR Boxers participated in Junior Boys & Girls State Championship held at Una from 06/06/2025 to 08/06/2025 and won 10 Medals (Gold- 05, Silver- 02, and Bronze- 03). JSW SHIKHAR Team grabbed the overall trophy in the girl's category.
- ❖ **Junior Boys & Girls National Championship:** 05 SHIKHAR Boxers participated in Junior Boys & Girls National Championship held at Rohtak from 18/06/2025 to 26/06/2025 and won 01 Silver Medals

❖ **Participation in State Sub Junior Boxing Championship:**

26 SHIKHAR Boxers participated in Sub Junior Boys & Girls State Championship held at Shimla from 25/07/2025 to 27/07/2025. SHIKHAR Boxers won total 14 medals (Gold: 05, Silver: 04, Bronze 05). SHIKHAR Team grabbed the Overall Champion Trophy in Boys category. 05 Boxers selected for National Level Championship.

❖ **Selection Trials for Under 22 Asian Boxing Championship:**

03 SHIKHAR Boxers were selected for trials for Under 22 Asian Boxing Championship. The trials held at Pune. SHIKHAR Boxer Miss Shruti was selected for the Under 22 Asian Boxing Championship

❖ **Participation in Under 22 Asian Boxing Championship:**

Shruti participated in Asian U19 and U22 Boxing Championship held at Bangkok Thailand from 01/08/2025 to 11/08/2025 and won Bronze medal

❖ **Participation in Sub Junior National Boxing Championship:** 05 SHIKHAR Boxers participated in Sub Junior National Boxing Championship held at Noida from 07/08/2025 to 13/08/2025.



## Annexure-6



**F. No. J-12011/47/2005-IA1(R)**  
Government of India  
Ministry of Environment, Forest & Climate Change  
(Impact Assessment Division)

\*\*\*\*

Indira Paryavan Bhavan  
2nd floor, Vayu Wing,  
Jor Bagh Road  
New Delhi - 110 003

**Dated: 30<sup>th</sup> May , 2024**

To,

The Director  
Department of Environment, Science Technology & Climate Change  
Government of Himachal Pradesh  
Paryavaran Bhawan, Near US Club, Shimla  
Himachal Pradesh-171001.  
Email id: dbt-hp@nic.in

**Sub: Regarding Constitution of Multi-Disciplinary Committee (MDC) to oversee the implementation of the suggested safeguard proposed in EIA/EMP report during construction of Karchham-Wangtoo Hydroelectric Project (1000 MW) in District Kinnaur Himachal Pradesh - reg**

Sir,

This is with reference to the communications received from M/s JSW Hydro Energy Limited (Annexure 1) regarding request for constitution of Multi-Disciplinary Committee (MDC) to oversee the implementation of the suggested safeguard proposed in EIA/EMP report during construction of Karchham-Wangtoo Hydroelectric Project (1000 MW) in District Kinnaur Himachal Pradesh.

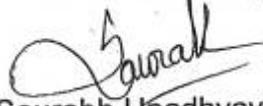
2. The aforesaid EC condition of the Environmental Clearance letter dated 09.11.2005 is reproduced as under:

*"A Multidisciplinary committee should be constituted with representatives from various disciplines of forestry, ecology, wildlife, soil conservation, NGO etc., to oversee the effective implementation of the suggested safeguard measures."*

3. It is to inform that while deliberating the agenda for finalization of the Terms of Reference for MDC, Expert Appraisal Committee in its 10<sup>th</sup> meeting held on 29<sup>th</sup> April, 2024 (Minutes of meeting are attached at Annexure II) has observed the following :  
*".....It was observed that retired senior officials from State Government like Chief Engineers, Professors, retired Scientist from MoEF&CC, CPCB, NEERI, SEIAA, SEAC, sectoral EAC-MoEF&CC may be included in the MDC instead of working members since most of the time they may depute some junior level officers due to their busy working schedule. The retired official may be nominated by name and their expertise..."*

4. In view of the above, it is requested to kindly nominate retired senior officials such as Chief Engineers, Professors, retired Scientist from MoEF&CC, CPCB, NEERI, SEIAA, SEAC, sectoral EAC-MoEF&CC so that necessary action for MDC constitution shall be taken.

Yours faithfully,

  
(Dr Saurabh Upadhyay)  
Scientist 'C'

Copy to:

1. M/s JSW Hydro Energy Limited, Karcham -Wangtoo H. E. Project Sholtu Colony, P O. Tapri - 172104, District Kinnaur (Himachal Pradesh)
2. Scientist E (MKS)/ Guard File

RECEIVED BIP  
DATE: 25/11/24



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

Sample Number : CEFT|GEN|2506200211  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Stack Emission Monitoring

Report No. : CEFT|211  
Format No. : 7.8 F-01  
Reporting Date : 24.06.2025  
Receipt Date : 20.06.2025

### General Information:

Sample collected by : CEFT Pvt Ltd. Team  
Date of sampling : 19.06.2025  
Sampling location : Wangtoo Power House  
Height of Stack, From Groud Level : 70 Feet  
Sampling duration (Minutes) : 45 Min  
Engine Serial No : 25399588  
Mfg Year : 05.2014  
Stack attached to : DG Set No 1 (1500 KVA)  
Type of Fuel used : HSD  
Make of stack : Metal  
Diameter of stack (inch) : 15 Inch  
Meteorological Condition : Clear Sky  
Instrument used : Stack Monitoring Kit  
Instrument calibration status : Calibrated  
Ambient Temperature - Ta (°C) : 40  
Temperature of Stack Gases - Ts (°C) : 278  
Velocity of Stack Gases (m/sec.) : 16.8  
Flow Rate : 15.2  
Sampling condition : Isokinetic  
Sampling & Analysis Protocol : IS :11255 & CPCB Guidelines  
Control measures (if any) : NIL

### TEST RESULT

S. No.	Parameters	Units	Results	Test Method	Standard Limit (As Per CPCB)
1	Particular Matter (PM)	mg/Nm <sup>3</sup>	59.6	IS:11255 (Part -01)	75
2	Oxides of Nitrogen (as NOx)	mg/Nm <sup>3</sup>	157	IS:11255 (Part -7)	710
3	Carbon Monoxide (CO)	mg/Nm <sup>3</sup>	72	IS:13270	150
4	Sulphur Dioxide ( as SO <sub>2</sub> )	mg/Nm <sup>3</sup>	36	IS:11255 (Part -2)	Not Aplicable

Page No.- 1/1

\*\*End of Report\*\*

*Moona*  
Checked by  
Ms. Moona

*Puja*  
Authorized Signatory  
Mrs. Puja

- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.





# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL & IQAS Accredited, FSSAI and MoEF Recognised Testing Laboratory

## TEST REPORT

Sample Number : CEFT|GEN|2506|272  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Noise Level Monitoring

Report No. : CEFT|2506|272  
Format No. : 7.8 F-01 D  
Party Reference No. : NIL  
Reporting Date : 24.06.2025  
Sample Receipt Date : 20.06.2025

### General Information:

Sample Description : DG Noise 1500 KVA  
Engine S. No. : Wangtoo Power House  
Sampling Location : 25399588  
Date of Sampling :  
Time of Monitoring : ....  
Sampling duration (Minutes) : 10 Min.  
Monitoring Done by : CEFT Pvt. Ltd. Team

## TEST RESULT

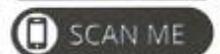
S. No.	Parameter	Test Result dB(A)	
		Test Method- IS 4758 : 2002	Limit-
1	Noise Level when canopy door open	98.8	Minimum Loss of Insertion in dB(A) 25.0
2	Noise Level when canopy door closed & at a distance 1.0 meter	73.1	

Page No.- 1/1

\*End of Report\*\*



- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.





# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

Sample Number : CEFT|GEN|2506200212  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Stack Emission Monitoring

Report No. : CEFT|212  
Format No. : 7.8 F-01  
Reporting Date : 24.06.2025  
Receipt Date : 20.06.2025

### General Information:

Sample collected by : CEFT Pvt Ltd. Team  
Date of sampling : 19.06.2025  
Sampling location : Wangtoo Power House  
Height of Stack, From Groud Level : 70 Feet  
Sampling duration (Minutes) : 62  
Engine Serial No : 25399589  
Mfg Year : 05.2014  
Stack attached to : DG Set No 2 (1500 KVA)  
Type of Fuel used : HSD  
Make of stack : Metal  
Diameter of stack (inch) : 15 Inch  
Meteorological Condition : Clear Sky  
Instrument used : Stack Monitoring Kit  
Instrument calibration status : Calibrated  
Ambient Temperature - Ta (°C) : 39  
Temperature of Stack Gases - Ts (°C) : 301  
Velocity of Stack Gases (m/sec.) : 15.8  
Flow Rate : 16.1  
Sampling condition : Isokinetic  
Sampling & Analysis Protocol : IS :11255 & CPCB Guidelines  
Control measures (if any) : NIL

### TEST RESULT

S. No.	Parameters	Units	Results	Test Method	Standard Limit (As Per CPCB)
1	Particular Matter (PM)	mg/Nm <sup>3</sup>	57.0	IS:11255 (Part -01)	75
2	Oxides of Nitrogen (as NOx)	mg/Nm <sup>3</sup>	156	IS:11255 (Part -7)	710
3	Carbon Monoxide (CO)	mg/Nm <sup>3</sup>	54	IS:13270	150
4	Sulphur Dioxide ( as SO <sub>2</sub> )	mg/Nm <sup>3</sup>	42	IS:11255 (Part -2)	Not Applicable

Page No.- 1/1

\*\*End of Report\*\*

Checked by  
**Ms. Moona**

Authorized Signatory  
**Mrs. Puja**

- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.





# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001: 2015, ISO 45001: 2018 (OHSAS): ISO/IEC 17025: 2017  
NABL & IQAS Accredited, FSSAI and MoEF Recognised Testing Laboratory

## TEST REPORT

Sample Number : CEFT|GEN|2506|275  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Noise Level Monitoring

Report No. : CEFT|2506|275  
Format No. : 7.8 F-01 D  
Party Reference No. : NIL  
Reporting Date : 24.06.2025  
Sample Receipt Date : 20.06.2025

### General Information:

Sample Description : DG Noise 1500 KVA  
Engine S. No. : Wangtoo Power House  
Sampling Location : 25399589  
Date of Sampling : 19.06.2025  
Time of Monitoring : ....  
Sampling duration (Minutes) : 10 Min.  
Monitoring Done by : CEFT Pvt. Ltd. Team

## TEST RESULT

S. No.	Parameter	Test Result dB(A)	
		Test Method- IS 4758 : 2002	Limit-
1	Noise Level when canopy door open	98.1	Minimum Loss of Insertion in dB(A) 25.0
2	Noise Level when canopy door closed & at a distance 1.0 meter	72.6	

Page No.- 1/1

**\*End of Report\*\***



- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.





# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

Sample Number : CEFT|GEN|2506200217  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Ambient Air Quality Monitoring

Report No. : CEFT|217  
Format No. : 7.8 F-01 A  
Party Reference No. : NIL  
Reporting Date : 24.06.2025  
Receipt Date : 20.06.2025

### General Information:

Sample collected by (Name & Designation) : CEFT Pvt. Ltd. Team  
Sampling location : Near Batching Plant, Wangtoo  
Date of commencement of monitoring : 19.06.2025  
Date of end of monitoring : 20.06.2025  
Sample Analysis Completion Date : 20.06.2025 to 24.06.2025  
Sampling Duration : 24 hrs.  
Instrument Used : RDS with gaseous attachment & PM 2.5 Sampler  
Instrument calibration status : Calibrated  
Meteorological Condition including wind direction : Clear Sky  
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines

## TEST RESULT

S. No.	Parameter	Result	Test Method	Standard Limit (as per NAAQS*)
1	Particulate Matter (PM <sub>10</sub> ) µg/m <sup>3</sup>	77	IS: 5182 (P-23), 2006	100
2	Particulate Matter (PM <sub>2.5</sub> ) µg/m <sup>3</sup>	31	IS: 5182 (P-24), 2019	60
3	Nitrogen Dioxide (NO <sub>2</sub> ) µg/m <sup>3</sup>	16	IS: 5182 (P-6), 1975 Reaffirmed-1998	80
4	Sulphur Dioxide (SO <sub>2</sub> ) µg/m <sup>3</sup>	10	IS: 5182 (P-2), 2001	80
5	Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>	ND	IS: 5182 (P-25), 2018	400
6	Lead (Pb), µg/m <sup>3</sup>	ND	IS: 5182 (P-22), 2004	1
7	Benzene (C <sub>6</sub> H <sub>6</sub> ), µg/m <sup>3</sup>	ND	IS: 5182 (P-11), 2006	5
8	Benzo (a) pyrene, ng/m <sup>3</sup>	ND	IS: 5182 (P-12), 2006	1
9	Ozone (O <sub>3</sub> ), µg/m <sup>3</sup>	ND	IS: 5182 (P-9), 1974	180
10	Arsenic (As), ng/m <sup>3</sup>	ND	IS: 5182 (P-22), 2004	6
11	Nickel (Ni), ng/m <sup>3</sup>	ND	IS: 5182 (P-22), 2004	20

\*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009

Page No.- 1/1

\*End of Report\*\*

*Moona*  
Checked by  
Ms. Moona

Authorized Signatory  
Mrs. Puja

- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.





# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017

## TEST REPORT

Sample Number : CEFT|GEN|2506|329  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Ambient Air Quality Monitoring

Report No. : CEFT|2506|329  
Format No. : 7.8 F-01 A  
Party Reference No. : NIL  
Reporting Date : 24.06.2025  
Receipt Date : 20.06.2025

### General Information:

Sample collected by (Name & Designation) : CEFT Pvt. Ltd. Team  
Sampling location : Near Batching Plant, Wangtoo  
Date of commencement of monitoring : 19.06.2025  
Date of end of monitoring : 20.06.2025  
Sample Analysis Completion Date : 20.06.2025 to 24.06.2025  
Sampling Duration : 24 hrs.  
Instrument Used : RDS with gaseous attachment & PM 2.5 Sampler  
Instrument calibration status : Calibrated  
Meteorological Condition including wind direction : Clear Sky  
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines

## TEST RESULT

S. No.	Parameter	Result	Test Method	Standard Limit (as per NAAQS*)
1	Carbon Monoxide (CO) mg/m <sup>3</sup>	ND	IS: 5182 (P-10), 1999	4

\*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009

Page No.- 1/1

**\*End of Report\*\***

  
Checked by  
Ms. Moona

  
Authorized Signatory  
Mrs. Paja

- Note :
1. The test results are related to the sample/ tested as identified.
  2. The sample will be discarded after retention time of 7 days unless otherwise specified.
  3. Any Discrepancy found in the test report may be communicated
  4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.
  5. The Court Jurisdiction will be Delhi.
  6. Customer complaint register is available at the laboratory.

Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Mohi Nagar, New Delhi - 110015  
Ph.: - 011-45012722, Email: info@ceftlab.com, Website : www.ceftlab.in



VISIT OUR WEBSITE - SCAN HERE  
WWW.CEFTLAB.IN



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

**Party Name** : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)

**Sample Description** : STP Outlet Water  
**Sampling Location** : WANGTOO POWER HOUSE  
**Sample Code** : -  
**Source** : -  
**Sample Given by** : Lab Person

**Report No.** : CEFT|221  
**Format No.** : 7.8 F-01 G  
**Reporting date** : 24.06.2025  
**Analysis completion date** : 20.06.2025 to 24.06.2025  
**Receipt Date** : 20.06.2025  
**Sampling Date** : 19.06.2025  
**Sampling Method** : As per APHA  
**Sample Quantity** : 2 Ltr.  
**LSRF/Sample ID** : CEFT|GEN|2506200221

## TEST RESULT

S. No.	Parameter	Result	Unit	Test-Protocol	Limit as Per CPCB
1	pH (at 25 °C)	6.96	-	IS 3025 (Part-11)	5.5-9.0
2	TSS	45	mg/l	IS 3025 (Part-17)	100
3	TDS	523	mg/l	IS 3025 (Part-16)	...
4	BOD (at 27°C for 3 days)	22	mg/l	IS 3025 (Part-44)	30
5	COD	180	mg/l	IS 3025 (Part-58)	250
6	Oil and Grease	2.40	mg/l	IS 3025 (Part-39)	10

Page No.- 1/1

**\*End of Report\*\***

*Moona*  
Checked by  
Ms. Moona

Authorized Signatory  
Mrs. Puja

- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.





# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017

## TEST REPORT

Sample Number : CEFT|GEN|2506|341  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Workzone Air Quality Monitoring

Report No. : CEFT|2506|341  
Format No. : 7.8 F-01 A  
Party Reference No. : NIL  
Reporting Date : 24.06.2025  
Receipt Date : 20.06.2025

### General Information:

Sample collected by (Name & Designation) : CEFT Pvt. Ltd. Team  
Type of Unit : ...  
Sampling location : Machine Hall  
Date of monitoring : 19.06.2025  
Date of end of monitoring : 20.06.2025  
Sample completion Date : 20.06.2025 to 24.06.2025  
Sampling Duration : 30 min  
Instrument Used : Handy Sampler Calibrated  
Instrument calibration status : Clear Sky  
Meteorological Condition including wind direction : IS-5182 & CPCB Guidelines  
Sampling & Analysis Protocol :

### TEST RESULT

S. No.	Parameter	Result	Test Method
1	Sulphur Dioxide (SO <sub>2</sub> ) (µg/m <sup>3</sup> )	ND	IS:5182- (Part-2)
2	Nitrogen Dioxide (NO <sub>2</sub> ) (µg/m <sup>3</sup> )	ND	IS:5182- (Part-6)
3	Ozone As (O <sub>3</sub> )(µg/m <sup>3</sup> )	ND	IS:5182-(Part-9)
4	Ammonia (NH <sub>3</sub> )(µg/m <sup>3</sup> )	ND	IS:5182-(Part-25)

\*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009

**\*\*End of Report\*\***

Checked by

Ms. Moona

- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.

Authorized Signatory  
Mrs. Puja





# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

Sample Number : CEFT|GEN|2509260342  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Stack Emission Monitoring

Report No. : CEFT|342  
Format No. : 7.8 F-01  
Reporting Date : 01.10.2025  
Receipt Date : 26.09.2025

### General Information:

Sample collected by Associate Lab Person : CEFT Pvt Ltd. & Associate Team  
Date of sampling : 24.09.2025  
Sampling location : Wangtoo Power House  
Height of Stack, From Groud Level : 70 Feet  
Sampling duration (Minutes) : 45 Min  
Engine Serial No : 25399588  
Mfg Year : 05.2014  
Stack attached to : DG Set No 1 (1500 KVA)  
Type of Fuel used : HSD  
Make of stack : Metal  
Diameter of stack (inch) : 15 Inch  
Meteorological Condition : Clear Sky  
Instrument used : Stack Monitoring Kit  
Instrument calibration status : Calibrated  
Ambient Temperature - Ta (°C) : 35  
Temperature of Stack Gases - Ts (°C) : 246  
Velocity of Stack Gases (m/sec.) : 16.2  
Flow Rate : 15.3  
Sampling condition : Isokinetic  
Sampling & Analysis Protocol : IS :11255 & CPCB Guidelines  
Control measures (if any) : NIL

### TEST RESULT

S. No.	Parameters	Units	Results	Test Method	Standard Limit (As Per CPCB)
1	Particular Matter (PM)	mg/Nm <sup>3</sup>	61.3	IS:11255 (Part -01)	75
2	Oxides of Nitrogen (as NO <sub>x</sub> )	mg/Nm <sup>3</sup>	158	IS:11255 (Part -7)	710
3	Carbon Monoxide (CO)	mg/Nm <sup>3</sup>	76	IS:13270	150
4	Sulphur Dioxide ( as SO <sub>2</sub> )	mg/Nm <sup>3</sup>	35	IS:11255 (Part -2)	Not Aplicable

Page No.- 1/1

\*\*End of Report\*\*

*Moona*  
Checked by  
Ms. Moona



- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.



Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Moli Nagar, New Delhi - 110015  
Ph.: - 011-45012722, Email: info@ceftlab.com, Website : www.ceftlab.in

VISIT OUR WEBSITE - SCAN HERE  
WWW.CEFTLAB.IN



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

Sample Number : CEFT|GEN|2509270379  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Noise Level Monitoring  
Report No. : CEFT|379  
Format No. : 7.8 F-01 D  
Party Reference No. : NIL  
Reporting Date : 01.10.2025  
Sample Receipt Date : 27.09.2025

### General Information:

Sample Description : DG Noise 1500 KVA  
Sampling Location : Wangtoo Power House  
Engine Sr. No : 25399588  
Date of Sampling : 24.09.2025  
Time of Monitoring : ....  
Sampling duration (Minutes) : 10 Min.  
Monitoring Done by : CEFT Pvt. Ltd. Team

## TEST RESULT

S. No.	Parameter	Test Result dB(A)	Limit-
1	Noise Level when canopy door open	98.4	Minimum Loss of Insertion in dB(A) 25.0
2	Noise Level when canopy door closed & at a distance 1.0 meter	71.3	

Page No.- 1/1

**\*End of Report\*\***

*Moona*

Checked by  
Ms. Moona



- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.

Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Moti Nagar, New Delhi - 110015  
Ph.: - 011-45012722, Email: info@ceftlab.com, Website : www.ceftlab.in



VISIT OUR WEBSITE - SCAN HERE  
WWW.CEFTLAB.IN



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

Sample Number : CEFT|GEN|2509260343  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Stack Emission Monitoring

Report No. : CEFT|343  
Format No. : 7.8 F-01  
Reporting Date : 01.10.2025  
Receipt Date : 26.09.2025

### General Information:

Sample collected by Associate Lab Person : CEFT Pvt Ltd. & Associate Team  
Date of sampling : 24.09.2025  
Sampling location : Wangtoo Power House  
Height of Stack, From Groud Level : 70 Feet  
Sampling duration (Minutes) : 62  
Engine Serial No : 25399589  
Mfg Year : 05.2014  
Stack attached to : DG Set No 2 (1500 KVA)  
Type of Fuel used : HSD  
Make of stack : Metal  
Diameter of stack (inch) : 15 Inch  
Meteorological Condition : Clear Sky  
Instrument used : Stack Monitoring Kit  
Instrument calibration status : Calibrated  
Ambient Temperature - Ta (°C) : 35  
Temperature of Stack Gases - Ts (°C) : 320  
Velocity of Stack Gases (m/sec.) : 10.3  
Flow Rate : 17.2  
Sampling condition : Isokinetic  
Sampling & Analysis Protocol : IS : 11255 & CPCB Guidelines  
Control measures (if any) : NIL

### TEST RESULT

S. No.	Parameters	Units	Results	Test Method	Standard Limit (As Per CPCB)
1	Particular Matter (PM)	mg/Nm <sup>3</sup>	55.0	IS:11255 (Part -01)	75
2	Oxides of Nitrogen (as NO <sub>x</sub> )	mg/Nm <sup>3</sup>	154	IS:11255 (Part -7)	710
3	Carbon Monoxide (CO)	mg/Nm <sup>3</sup>	53	IS:13270	150
4	Sulphur Dioxide ( as SO <sub>2</sub> )	mg/Nm <sup>3</sup>	41	IS:11255 (Part -2)	Not Applicable

Page No.- 1/1

\*\*End of Report\*\*

*Moona*  
Checked by  
Ms. Moona



- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.



Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Moti Nagar, New Delhi - 110015  
Ph.: - 011-45012722, Email: info@ceftlab.com, Website : www.ceftlab.in

VISIT OUR WEBSITE-SCAN HERE  
WWW.CEFTLAB.IN



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

Sample Number : CEFT|GEN|2509270380  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Noise Level Monitoring

Report No. : CEFT|380  
Format No. : 7.8 F-01 D  
Party Reference No. : NIL  
Reporting Date : 01.10.2025  
Sample Receipt Date : 27.09.2025

### General Information:

Sample Description : DG Noise 1500 KVA  
Sampling Location : Wangtoo Power House  
Engine Sr. No : 25399589  
Date of Sampling : 24.09.2025  
Time of Monitoring : ....  
Sampling duration (Minutes) : 10 Min.  
Monitoring Done by : CEFT Pvt. Ltd. Team

## TEST RESULT

S. No.	Parameter	Test Result dB(A)	
		Test Method: IS 4758:2002	Limit- Minimum Loss of Insertion in dB(A)
1	Noise Level when canopy door open	100.4	25.0
2	Noise Level when canopy door closed & at a distance 1.0 meter	74.3	

Page No.- 1/1

**\*\*End of Report\*\***

*Moona*  
Checked by  
Ms. Moona



- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.

Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Moti Nagar, New Delhi - 110015  
Ph.: - 011-45012722, Email: info@ceftlab.com, Website : www.ceftlab.in



VISIT OUR WEBSITE-SCAN HERE  
WWW.CEFTLAB.IN



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

Sample Number : CEFT|GEN|2509260337  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Indoor Air Quality Monitoring

Report No. : CEFT|337  
Format No. : 7.8 F-01 A  
Party Reference No. : NIL  
Reporting Date : 01.10.2025  
Receipt Date : 26.09.2025

### General Information:

Sample collected by Associate Lab Person : CEFT Pvt Ltd. & Associate Team  
Sampling location : Machine Hall, Wangtoo Power House  
Date of monitoring : 24.09.2025  
Sample Analysis Completion Date : 26.09.2025 to 30.09.2025  
Sampling Duration : 8 Hrs.  
Instrument Used : PM2.5 , Handy Sampler with Gaseous attachment  
Instrument calibration status : Calibrated  
Meteorological Condition including wind direction : Clear Sky

## TEST RESULT

S. No.	Parameter	Result	Test Method	Standard Limit (as per factory act 1948)
1	Particulate Matter (PM <sub>10</sub> ) µg/m <sup>3</sup>	39	CEFT SOP IA-20	-
2	Particulate Matter (PM <sub>2.5</sub> ) µg/m <sup>3</sup>	22	CEFT SOP IA-21	-
3	Nitrogen Dioxide (NO <sub>2</sub> ), PPM	3.2	CEFT SOP IA-01	3
4	Sulphur Dioxide (SO <sub>2</sub> ), PPM	1.4	CEFT SOP IA-02	2
5	Ammonia (NH <sub>3</sub> ), PPM	ND	CEFT SOP IA-05	25
6	Ozone (O <sub>3</sub> ), PPM	ND	CEFT SOP IA-09	0.1

Page No. 1/1

\*\*End of Report\*\*

*Moona*  
Checked by  
Ms. Moona



- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.

Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Mayapuri, New Delhi - 110015  
Ph.: - 011-45012722, Email: info@ceftlab.com, Website : www.ceftlab.in



VISIT OUR WEBSITE -SCAN HERE  
WWW.CEFTLAB.IN



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL & IQAS Accredited, FSSAI and MoEF Recognised Testing Laboratory



## TEST REPORT

ULR No. : TC-614524000005050F

Party Name : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)

Sample Description : Drinking Water  
Sampling Location : Wangtoo Power House  
Source :-  
Sample Given by : Party

Report No. : CEFT|350  
Format No. : 7.8 F-01G  
Reporting Date : 01.10.2025  
Analysis Completion date : 26.09.2025 to 30.09.2025  
Receipt Date : 26.09.2025  
Sampling Date : 24.09.2025  
Sampling method : As Per APHA Method  
Sample Quantity : 5 Ltr  
LSRF/Sample ID : CEFT|GEN|2509260350

## TEST RESULT

S. No.	Parameter	Result	Unit	Limit of IS: 10500 : 2012 ( Reaffirmed 2023)		Test-Method
				Requirement (Acceptable Limit)	Permissible limit in the Absence of Alternate Source (Max.)	
<b>Physical Parameters</b>						
1	pH (at 25 °C)	7.12	-	6.5 to 8.5	No Relaxation	IS: 3025 (Part-11)
2	Colour, (Max.)	<1	Hazen	5	15	IS: 3025 (Part-4)
3	Odour	Agreeable	-	Agreeable	Agreeable	IS: 3025 (Part-5)
4	Taste	Agreeable	-	Agreeable	Agreeable	IS: 3025 (Part-7)
5	Turbidity, (Max.)	<1	NTU	1	5	IS: 3025 (Part-10)
6	Total Dissolved Solids, (Max.)	214	mg/l	500	2000	IS: 3025 (Part-16)
<b>General Parameters</b>						
7	Total Hardness as CaCO <sub>3</sub> , (Max.)	64	mg/l	200	600	IS: 3025 (Part-21)
8	Calcium as Ca, (Max.)	16.8	mg/l	75	200	IS: 3025 (Part-40)
9	Alkalinity as CaCO <sub>3</sub> , (Max.)	54.0	mg/l	200	600	IS: 3025 (Part-23)
10	Chloride as Cl, (Max.)	52.9	mg/l	250	1000	IS: 3025 (Part-32)
11	Free Residual Chlorine, (Min.)	ND	mg/l	0.2	1	IS:3025 (Part-26)
12	Magnesium as Mg , (Max.)	5.36	mg/l	30	100	APHA 3500-Mg (B) 2023
13	Sulphate as SO <sub>4</sub> , (Max.)	7.8	mg/l	200	400	IS: 3025 (Part-24)
14	Fluoride as F, (Max)	ND	mg/l	1	1.5	IS: 3025 (Part-60)
15	Nitrate as NO <sub>3</sub> , (Max.)	2.1	mg/l	45	No Relaxation	IS 3025 (Part-34)
16	Iron as Fe, (Max.)	0.11	mg/l	1	No Relaxation	IS: 3025 (Part-53)
17	Zinc as Zn, (Max.)	ND	mg/l	5	15	IS: 3025 (Part-49)

Note 1. ND = Not Detectable

Page No. 1/2

*Moona*  
Checked by  
Ms. Moona



- Note :
- The test results are related to the sample/ tested as identified.
  - The sample will be discarded after retention time of 7 days unless otherwise specified.
  - Any Discrepancy found in the test report may be communicated within seven days.
  - This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.
  - The Court Jurisdiction will be Delhi.
  - Customer complaint register is available at the laboratory.

Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Mofl Nagar, New Delhi - 110015  
Ph.: - 011-45012722, Email: info@cefflab.com, Website : www.cefflab.in



SCAN ME



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL & IQAS Accredited, FSSAI and MoEF Recognised Testing Laboratory



TC-6145

## TEST REPORT

Report No. CEFT|350

S. No.	Parameter	Result	Unit	Limit of IS: 10500 : 2012 ( Reaffirmed 2023)		Test-Method
				Requirement (Acceptable Limit)	Permissible limit in the Absence of Alternate Source	
18	Manganese as Mn, (Max.)	ND	mg/l	0.1	0.3	IS: 3025 (Part-59)
19	Lead as Pb, (Max.)	ND	mg/l	0.01	No Relaxation	IS: 3025 (Part-47)
20	Cadmium as Cd, (Max.)	ND	mg/l	0.003	No Relaxation	IS: 3025 (Part-41)
21	Total Chromium (as Cr), (Max.)	ND	mg/l	0.05	No Relaxation	IS: 3025 (Part-52)
22	Nickel as Ni, (Max)	ND	mg/l	0.02	No Relaxation	IS: 3025 (Part-54)
23	Barium as Ba, (Max.)	ND	mg/l	0.7	No Relaxation	APHA, 3111 (D) 2023
24	Cyanide as CN, (Max.)	ND	mg/l	0.05	No Relaxation	IS: 3025 (Part-27)
25	Selenium as Se, (Max.)	ND	mg/l	0.01	No Relaxation	APHA, 3111 (B) 2023
26	Mercury as Hg, (Max.)	ND	mg/l	0.001	No Relaxation	By Mercury Analyzer
27	Arsenic as As, (Max.)	ND	mg/l	0.01	No Relaxation	APHA, 3114 (B) 2023
28	Sodium as Na	10.8	mg/l	-	-	IS 3025 (Part-45)
29	Potassium as K	2.5	mg/l	-	-	IS 3025 (Part-45)
30	Silver as Ag	ND	mg/l	0.01	No Relaxation	IS:3025 (Part-2)
31	Copper as Cu, (Max.)	ND	mg/l	0.05	1.5	APHA, 3111 (B) 2023
32	Aluminium as Al, (Max.)	ND	mg/l	0.03	0.2	APHA, 3111 (D) 2023
33	Boron as B, (Max.)	ND	mg/l	0.5	1.0	APHA, 4500-B (C) 2023
<b>Microbiological Parameters</b>						
1	Total coliform	Absent	per 100 ml	Absent per 100 ml		IS:15185:2016
2	E.coli	Absent	per 100 ml	Absent per 100 ml		IS:15185:2016

Note: 1. ND = Not Detectable

Page No. 2/2

\*\* End of Report\*\*

*Moona*  
Checked by  
Ms. Moona



- Note :
1. The test results are related to the sample/ tested as identified.
  2. The sample will be discarded after retention time of 7 days unless otherwise specified.
  3. Any Discrepancy found in the test report may be communicated within seven days.
  4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.
  5. The Court Jurisdiction will be Delhi.
  6. Customer complaint register is available at the laboratory.

Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Moti Nagar, New Delhi - 110015  
Ph.: - 011-45012722, Email: [info@ceftlab.com](mailto:info@ceftlab.com), Website : [www.ceftlab.in](http://www.ceftlab.in)



SCAN ME



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory

## TEST REPORT

Party Name : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)

Report No. : CEFT|2509|141  
Format No. : 7.8 F-01G  
Reporting Date : 03.10.2025  
Analysis Completion date : 26.09.2025 to 03.10.2025  
Receipt Date : 26.09.2025  
Sampling Date : 24.09.2025  
Sampling method : As Per APHA Method  
Sample Quantity : 5 Ltr  
LSRF/Sample ID : CEFT|GEN|25019|141

Sample Description : Drinking Water  
Sampling Location : Wangtoo Power House  
Source :-  
Sample Given by : Party

### TEST RESULT

S. No.	Parameter	Result	Unit	Limit of IS: 10500 : 2012 ( Reaffirmed 2023)		Test-Method
				Requirement (Acceptable Limit)	Permissible limit in the Absence of Alternate Source (Max.)	
<b>Physical Parameters</b>						
1	Ammonia (as total ammonia-N),mg/l, Max	ND	mg/l	0.05	No Relaxation	IS 3025 (Part-34) : 1988
2	Sulphide (as H <sub>2</sub> S), mg/l, Max	ND	mg/l	0.07	No Relaxation	APHA 24th Edition 2023-4500 S2 D
<b>MICROBIOLOGICAL TEST</b>						
1	Legionella	Absent	Per/Ltr.		Absent per ltr	APHA 9268

Note: 1. ND = Not Detectable

Page No. 1/1

\*\* End of Report\*\*

Moona

Checked by  
Ms. Moona

Authorized Signatory  
Mr. Nadeem

Authorized Signatory

- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.

Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Moli Nagar, New Delhi - 110015  
Ph.: - 011-45012722, Email: info@ceftlab.com, Website : www.ceftlab.in



VISIT OUR WEBSITE-SCAN HERE  
WWW.CEFTLAB.IN



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

**Party Name** : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)

**Sample Description** : STP Outlet Water  
**Sampling Location** : Wangtoo Power House  
**Sample Code** : -  
**Source** : -  
**Sample Given by** : Party

**Report No.** : CEFT|353  
**Format No.** : 7.8 F-01 G  
**Reporting date** : 01.10.2025  
**Analysis completion date** : 26.09.2025 to 30.09.2025  
**Receipt Date** : 26.09.2025  
**Sampling Date** : 24.09.2025  
**Sampling Method** : As per APHA  
**Sample Quantity** : 2 Ltr.  
**LSRF/Sample ID** : CEFT|GEN|2509260353

## TEST RESULT

S. No.	Parameter	Result	Unit	Test-Protocol	Limit as Per CPCB
1	pH (at 25 °C)	7.41	-	IS 3025 (Part-11)	5.5-9.0
2	TSS	52	mg/l	IS 3025 (Part-17)	100
3	TDS	745	mg/l	IS 3025 (Part-16)	..
4	BOD (at 27°C for 3 days)	22	mg/l	IS 3025 (Part-44)	30
5	COD	152	mg/l	IS 3025 (Part-58)	250
6	Oil and Grease	3.3	mg/l	IS 3025 (Part-39)	10

Page No.- 1/1

**\*End of Report\*\***

*Moona*  
Checked by  
Ms. Moona



- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.

Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Moti Nagar, New Delhi - 110015  
Ph.: - 011-45012722, Email: info@ceftlab.com, Website : www.ceftlab.in



VISIT OUR WEBSITE - SCAN HERE  
WWW.CEFTLAB.IN



# Centre for Environment and Food Technology Pvt. Ltd.

An ISO 9001; 2015, ISO 45001; 2018 (OHSAS); ISO/IEC 17025; 2017  
NABL Accredited, FSSAI and MoEF/CPCB Recognised Testing Laboratory



TC-6145

## TEST REPORT

Sample Number : CEFT|GEN|2509260357  
Issued To : M/s JSW Hydro Energy Limited  
Karcham-Wangtoo Hydro Electric Project (1045MW)  
Sholtu Colony, P.O Tapri, District Kinnaur (HP)  
Sample Description : Ambient Noise Level Monitoring

Report No. : CEFT|357  
Format No. : 7.8 F-01B  
Reporting D : 01.10.2025  
Receipt Date : 26.09.2025

### General Information:

Monitoring Done by (Name & Designation) : CEFT Pvt Ltd. & Associate Team  
Sampling Location : Wangtoo Power House  
Sample Description : Ambient Noise Level Monitoring  
Date of Sampling : 24.09.2025  
Sampling Duration (Minutes) : 10 Minute

### TEST RESULT

Sr. No.	Parameter	Result dB (A)	Test Method	Standard dB(A)Leq
1	Noise	66.8	IS 9989 : 2008	75 (DAY) As Per Rule 2010

\*End of Report\*

Page No.- 1/1

*Moona*  
Checked by  
Ms. Moona



- Note : 1. The test results are related to the sample/ tested as identified.  
2. The sample will be discarded after retention time of 7 days unless otherwise specified.  
3. Any Discrepancy found in the test report may be communicated within seven days.  
4. This report shall not be reproduced, cannot be used as evidence in the court of law and should not be used in any advertising media without written permission of CEO, CEFT Pvt. Ltd.  
5. The Court Jurisdiction will be Delhi.  
6. Customer complaint register is available at the laboratory.

Regd. Address - Bldg. No. 17, 1st & 2nd Floor, DLF Industrial Area, Moti Nagar, New Delhi - 110015  
Ph.: - 011-45012722, Email: info@ceftlab.com, Website : www.ceftlab.in



VISIT OUR WEBSITE-SCAN HERE  
WWW.CEFTLAB.IN

**ENVIRONMENTAL LABORATORY**



## **Highlights of Environmental Laboratory**

Well furnished Lab with following equipment/instruments, glassware and chemicals.

1. BOD Incubator
2. COD Digester
3. Hot Air Oven
4. pH Meter
5. Turbidity Meter
6. Total Suspended Solid Assembly
7. Hot Plate
8. Double Beam-UV-Vis Spectrophotometer
9. Digital Hot Bath
10. Magnetic Stirrer with Hot Plate
11. PM 2.5 Fine Particulate Sampler
12. PM 10 Respirable Dust Sampler
13. Stack Monitoring Kit
14. Autoclave
15. Weight Balance
16. Flue gas Analyzer
17. Flame Photometer
18. Noise Meter with data recorder
19. Water distillation Assembly
20. Deionizer Unit
21. All requisite Glassware and Chemicals