



# NABHA POWER LIMITED

ofc

Mailing Address: Aspire Tower, 4<sup>th</sup> Floor Plot No. 55, Industrial and Business Park, Phase-1, Chandigarh-160 002  
Phone: 0172 4646846 • Fax: 0172 4646802

Ref: NPL/RB/MOEF/

Dated: Feb. 23, 2017

To,

Director (S),  
Government of India,  
Ministry of Environment, Forests & Climate Change,  
Northern Regional Office,  
Chandigarh-160030, Punjab

**Sub:** Six Monthly compliance Status of Environment Clearance conditions from June-16 to Dec-16

Dear Sir,

As per the conditions under Environment Clearance given to Nabha Power Limited, kindly find herewith compliance status of same for your kind reference.

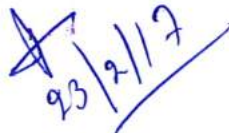
Thanking you,

Yours faithfully  
For Nabha Power Limited

  
Rajiv Bhandari  
AGM-EHS

Cc: Sh Pardeep Gupta, Sr. Environmental Engineer, Punjab Pollution Control Board, Patiala.

Northern Regional Office  
Ministry of Environment, Forests & Climate Change  
B-9, N.M. Marg, Chandigarh  
Sector 22, Chandigarh

  
23/2/17

Wholly Owned Subsidiary of L&T Power Development Limited

Corporate Office: L&T House, N M Marg, Ballard Estate, Mumbai 400 001

Regd. Office: PO Box no. 23, Near Village Nalash, Rajpura - 140401, Punjab

**COMPLIANCE STATUS OF MOEF CONDITIONS @ 1400 MW (As on 31.12. 2016)**

S. No.	MOEF Conditions	Compliance Status
1.	The total land requirement for the project shall be restricted to 1278 acres.	The land requirement for 1400 MW has been restricted within 1278 acres only.
2.	Prior clearance from the competent authority shall be obtained for locating the proposed power plant in proximity (about 3 kms) of the defence installation. A copy of the same shall be furnished to the ministry and the regional office of this ministry within one month from the date of issue of this clearance letter.	NOC from Ministry of defence & AAI obtained on 25 <sup>th</sup> May, 2009, Ref No.: No. 21(7)/2008/D(Coord) & 22 <sup>nd</sup> July, 2008, Ref No.: No. AAI/20012/664/ 2008-ARI (NOC) respectively.
3.	Sulphur & ash contents in the coal to be used in the project shall not exceed 0.5% & 34%.	Sulphur & ash contents in the coal being used are below 0.5% & 34%. Respectively.
4.	A bi-flue stack of height 275 m shall be provided with continuous online monitoring equipments for SOx, NOx & particulate matter. Exit velocity of flue gas should not be less than 25 m/sec.	Continuous online monitoring equipment are functional at 275 Mtr. stack on both the flues attached to Boiler 1 & Boiler 2 and monitoring of PM, Sox & NOx is being done. The exit velocity of flue gas is measured and is more than 25 m/sec.
5.	High efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure particulate emission doesn't exceed 50 mg/m <sup>3</sup> .	The ESP's attached to Boiler 1 & 2 are functional and have efficiencies more than 99.99%. The SPM emissions are < 50 mg/Nm <sup>3</sup> .
6.	Space provision shall be kept for retrofitting for FGD, if required at later date.	Space provision for FGD has already been earmarked
7.	Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	The Dust extraction system & Dust suppression system (water sprinklers) is operational in the coal handling area, ash handling and at all transfer points.
8.	Fly ash to be collected in dry form in storage facility (silos) shall be provided. 100% utilization of fly ash shall be achieved from day one. Unutilized fly ash in emergency and bottom ash shall be disposed in ash pond and bottom ash in conventional slurry mode. Mercury and other heavy metals (Hg, Cr, Pb etc.) will be monitored in bottom ash and fly ash as also in the effluent emanating from ash pond.	Fly Ash Silos (3 Nos.) are fully operational. The utilization report of Fly ash is being submitted with the Regional Office, PPCB on monthly basis. Monitoring of heavy metals is being done for both bottom & fly ash and reports are submitted with the Regional Office, MOEF & PPCB on 6 monthly basis. Latest report are attached as <b>Annexure-1</b>
9.	Ash pond shall be lined with HDPE lining. Adequate safety measures shall also be implemented to protect ash dyke from getting breached.	Ash Pond bed is provided with HDPE lining ( 500 micron thick) over 50 mm thick sand cushion and top of HDPE liner is protected with 300 mm earth cover
10.	Closed cycle cooling system with cooling towers shall be provided. Effluents shall be treated as per the prescribed norms.	Complied.



11.	The treated effluents confirming to the prescribed standard shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during Monsoon. Arrangement shall be made that effluent & storm water do not get mix.	The Power plant is based on Zero Discharge (ZLD) concept and the treated effluents conforming to prescribed standards are being re-circulated and reused within the Plant. There is no discharge outside the plant boundary.
12.	A Sewage Treatment Plant shall be provided and treated sewage shall be used for raising green belt/plantation.	The Sewage treatment plant of 50 KLD capacities is in operation. The treated water is being used for Green belt development/Plantation.
13.	Rain water harvesting should be adopted. Central Ground Water Authority/board shall be consulted for finalization of appropriate rain water harvesting technology with a period of three months from the date of clearance and details shall be furnished.	Rain water harvesting pits have been made as per the Rain water harvesting scheme approved by CGWA.
14.	Adequate safety measures shall be provided in plant area to check/minimize spontaneous fire in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry at Chandigarh.	The safety measures submitted to MOEF thr. letter ref: NPL/SKN/MOEF/1423 dated: 28 <sup>th</sup> June, 2012 have been implemented to check/minimize spontaneous fire in coal yard.
15.	Provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of project.	Adequate arrangements were made for construction labor such as toilets, STP, safe drinking water, medical health care etc.
16.	Storage facilities for liquid fuel such as LDO and HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. On site and off site disaster management plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modification required, if any shall be incorporated in the DMP.	The Storage tanks for LDO & HFO storage have been made after necessary risk assessment. On site and off site disaster management plan is prepared and the adequacy of the Plan is being tested on regular basis through conducting mock drills.
17.	Regular monitoring of ground water in and around ash pond area shall be carried out, records maintained and six monthly reports shall be furnished to Regional Office, Chandigarh.	Being done and reports are being submitted to MOEF & PPCB on six monthly basis.
18.	A green belt of adequate width and density shall be developed around plant periphery covering about 1/3 <sup>rd</sup> of project area preferably with local species.	2.5 Lakh trees already planted @2500/ha with local species.
19.	Activities under CSR shall be enhanced with proper financial allocation. Details of these activities shall be submitted to the Regional Office of the Ministry, SPCB and the Ministry.	The management demonstrates its intention & commitment towards socio-economic development by providing various facilities to the nearby villages. We are furnishing the details of the activities to MOEF and PPCB.
20.	First aid & sanitation arrangement shall be made for the drivers and other contract workers during construction phase.	First aid center & adequate sanitation arrangement for the drivers and other contract workers are in place.



21.	Noise level emanating from turbines shall be limited to 75 dB (A). For people working in the high noise area, requisite personal protective equipment like Earplug/ear muffs etc. shall be provided. Workers engaged in noisy area such as turbine area, air compressors etc. shall be periodically examined to maintain audiometry record and for any hearing loss including shifting to non-noisy/less noisy areas.	The Noise levels are maintained well below the prescribed standards. PPE's are being provided to all the workers depending upon the task being performed. Medical examination of the workers engaged in high noise area is being done on six monthly basis and records being maintained.
22.	Regular monitoring of ground level concentration of SO <sub>2</sub> , NO <sub>x</sub> , SPM, RSPM and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of the monitoring shall be decided in consultation with SPCB. Periodic report to be submitted to Regional office of this Ministry.	Monitoring reports are regularly being submitted to Regional office of Ministry and PPCB. Latest report are attached as <b>Annexure-II</b>
23.	The project proponent shall advertise in two local newspaper widely circulated in the region around the project, one of which shall be in the vernacular language of the locality/Municipal area/Gram Panchayat concerned and on the company's website within seven days from the date of clearance letter, informing that the project has been accorded environment clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at website of the ministry of Environment and forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	Complied.
24.	A separate Environment Management Cell with qualified staff to be set up for implementation of the stipulated environmental safeguards.	EMC comprising of qualified staff with adequate experience and knowledge is in place to cater environmental responsibilities.
25.	Half yearly report on status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry/Regional Office/CPCB/SPCB.	Complied.
26.	Regional office of the Ministry of Environment & Forests located at Chandigarh will monitor implementation of stipulated conditions. A complete set of documents including EIA report & EMP report along with additional information submitted from time to time shall be forwarded to the regional office for their use during monitoring.	Complied.
27.	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes & year wise expenditure should be reported to Ministry.	Being Complied

28.	The project authorities shall inform the regional office as well as the Ministry regarding the date of financial closure and final approval of project by concerned authorities and the dates of start of land development work and commissioning of plant.	Plant is in Operation and generation capacity is 1400 MW
29.	Full co-operation should be extended to the scientists/officers from the Ministry/Regional office of the Ministry at Chandigarh/the CPCB/the SPCB who would be monitoring compliance of environmental status.	The NPL is providing full co-operation to the scientists/officers from the Ministry/Regional office of the Ministry at Chandigarh/the CPCB/the SPCB who are monitoring compliance of environmental status, time to time.
30.	No additional coal consumption beyond 5.8 MTPA (at 85 % PLF) earlier envisaged for 2 x 660 MW and no additional land for the enhanced capacity shall be permitted.	Being Complied.
31.	The project proponent shall upload the status of compliance of the conditions stipulated in the environmental clearance issued vide Ministry's letter of even no. dated 03.10.2008, in its website and update periodically and also simultaneously send the same by email to regional office of Ministry of Environment and Forests.	NPL website is live & the compliance reports & Monthly Environment Monitoring Reports are uploaded periodically on website. Website address : <a href="http://www.Intnabhahpower.com">http://www.Intnabhahpower.com</a>
32.	Critical pollutants levels including NOx, RPSM <sub>1.0</sub> and 2.5, SO <sub>2</sub> shall be regularly monitored and results displayed in your website and also at main gate of the power plant.	Being Complied.



**COMPLIANCE STATUS OF MOEF CONDITIONS FOR 2 x 700 (1400 MW)**

S. No.	MOEF Conditions	Compliance Status
33	Harnessing solar power within the premises of the plant particularly at the available roof tops shall be under taken and status of implementation shall be submitted periodically to regional office of ministry	Solar panels on Hostel roof and CHP are already provided.
34	A long term study on radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter mechanism for an in-built continuous monitoring for radio-activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	Radioactive and Heavy metal contents in Coal is being tested by institute of repute and the reports are being submitted with Regional office of the ministry at Chandigarh.
35	Exit velocity of flue gases shall not be less than 22 m/s. Mercury emissions from stack shall also be monitored on periodic basis.	The exit velocity of flue gases is more than 22 m/s. Mercury emissions from the stack is regularly monitored and the reports are being submitted to MOEF / PCB on periodic basis. Latest report are attached as <b>Annexure-III</b>
36	Fugitive emissions shall be controlled to prevent impact on agriculture or non-agriculture land.	Adequate measures to control fugitive emissions already in place.
37	No ground water shall be extracted for use in operation of power plant even in lean season.	Complied.
38	Source sustainability of water requirement shall be carried out by an institute of repute. The study shall also specify the source of water for meeting the requirement during lean season. The report shall be submitted to the Regional Office of ministry within six months.	The Source Sustainability Study of water was conducted before granting the EC by MOEF to know the source of fulfillment of water requirement by the proposed Plant.  For Nabha Power Limited the source of water is Bhakhra Canal and necessary permissions in this regard was taken from Irrigation Department, Punjab and was submitted with your kind office before grant of Environmental Clearance. When we had applied for Extn. of EC, our plant was already Commissioned and we were having valid Consent to Operate from State Pollution Control Board. <b>Therefore, the said condition is not applicable on us.</b>
39	Hydro geological study of the area shall be reviewed annually and report submitted to the ministry. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant.	No Ground Water abstraction is being done. We are only using Canal water for generation of Power. <b>Therefore, the said condition is not applicable on us.</b>
40	Minimum required environment flow suggested by the competent authority of the state government shall be maintained in the Channel / Rivers (as applicable) even in lean season.	Agreed
41	C.O.C of 5.0 shall be adopted	Adopted and being complied.
42	Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for fly ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option for mine void filling is to be adopted, prior detailed study of soil characteristics of mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in	Agreed



	close coordination with the State Pollution Control Board	
43	Green belt consisting of 3 tiers of plantations of native species around the plant and at least 100m width shall be raised. Wherever 100m width is not feasible a 50 m width shall be raised and adequate justification shall be submitted to Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 75 %.	Complied.
44	Three tier green belt shall be developed all around ash pond over and above the green belt around the plant boundary.	Complied.
45	A common <b>Green Endowment Fund</b> shall be created and the interest earned out of it shall be used for the development and management of Green cover of the area.	Being complied
46	The project proponent shall also adequately contribute in the development of the neighboring villages. Special package with implementation schedule for free potable drinking water supply in the nearby villages and schools shall be undertaken in a time bound manner.	Same has been complied. Various initiatives have already been started for the development of the surrounding areas like Infrastructure Development, Support to needy families under various welfare schemes, Free Skill training for girls, Support to educational institutions/govt schools/Aganwari Centers, Tree plantation and support for other various community based need/requirement.
47	An amount of Rs 22 Crores shall be earmarked as one time capital cost for CSR program. Subsequently a recurring expenditure of Rs 4.4 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with the road map for implementation.	Same has been complied .Last spent (For 2015-16) Rs.4.43 Crore on various CSR activities. This year (2016-17) also proposed Rs.4.40 crore for CSR activities.
48	CSR scheme should address Public Hearing issues and shall be undertaken based on need based assessment in and around villages within 5.0 km of the site and in constant consultation with the village Panchayat and District administration. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall also be undertaken. Development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such program. Company shall provide separate budget for community development activities and income generating programs. Vocational training program for possible self-employment and jobs shall be imparted to identify villagers free of cost.	Same has been complied. Presently working in 49 villages falls under the radius of 5 kms and implemented various CSR schemes in the target villages in coordination with village panchayats.  Free skill training in Beautician, Tailoring, and Embroidery is being imparted to girls thorough 11 Training centers.  Local youth are being given preference for jobs in plant as per their skills, qualification and criteria set for the job.
49	It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time.	A CSR committee is already constituted at NPL level who is monitoring the CSR activities. Meetings are being organized with the Panchayats of the target villages to get their feedback/suggestions for ongoing CSR activities.
50	An Environmental cell shall be created at the project site itself and shall be headed by an officer of the company of appropriate seniority and qualification. It shall be ensured that the head of the cell shall directly report to the Head of the organization.	Environmental Cell is already there and HOD, Mr. Rajiv Bhandari, AGM (HSE) directly reports to the Chief Executive (Head of Organization).
51	Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg, Cr, As, Pb) and records maintained and submitted to the Regional Office of this ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water	Regular monitoring of ground water quality including heavy metals is being carried out regularly in and around the Ash Dykes. Piezometer wells are established around the ash pond area and being regularly monitored by Injab Pollution Control Board on quarterly basis.

52	<p>quality is not adversely affected due to the project.</p> <p>Monitoring of the surface quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.</p>	<p>No Ground Water is being abstracted as we are using Canal water for generation of Power. The quality and quantity of the canal water is monitored and records are being maintained.</p> <p>We are already monitoring Heavy metals in Ground Water by taking samples thru Piezometer and submitting the respective reports to Regional office of the ministry at Chandigarh.</p> <p>Complied.</p>
53	<p>The environment statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.</p>	<p>Last Environmental Report was submitted On 29.09.2016 with Regional Office of the Ministry at Chandigarh and PPCB, Patiala.</p>
54	<p>The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.</p>	<p>HSE Policy has been framed and accordingly officers have been designated for achieving the objectives by adherence to the Policy. We are certified for Integrated Management System requirements (ISO 9001, 14001 &amp; OHSAS 18001) by LRQA &amp; Bureau Veritas respectively.</p>





# Eco Laboratories & Consultants Pvt. Ltd.

ENVIRONMENT Due diligence, Monitoring and Analysis Services

ISO-14001:2008 OHSAS-18001:2007 CIN : U74140PB2011PTC034739



## TEST REPORT

Test Report No.: EL150916GS003		EL-15-16 / 5789		PageNo. 1/1
Customer		Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab		
Type of Sample:		Coal		
Work Order No. & Date:		NPL/47000-04271 dated 23.08.16		
Mode of Collection of Sample:		Sampling by Laboratory		
Packing, Markings, Seal & Identity:		Poly Bag Marked '15/S/08'		
Quantity:		1Kg		
Date of Sampling:		15.09.2016		
Sampling Location:		From Coal Pipe		
Date of Receipt of Sample:		15.09.2016		
Period of Analysis		15.09.2016 To 09.11.2016		
Date of Reporting:		09.11.2016		
S.No	Test Parameters	Units	Results	Test Method
1.	Lead ( as Pb )	mg/kg	<0.1	7.5, LATS/16/2002-03 and APHA-22nd Ed 2012-3111B A-Ac Flame AAS Method
2.	Arsenic ( as As )	mg/kg	<0.1	7.5, LATS/16/2002-03 and APHA-22nd Ed 2012-3114C
3.	Total Chromium ( as Cr )	mg/kg	<0.1	7.5, LATS/16/2002-03 and APHA-22nd Ed 2012-3111B A-Ac Flame AAS Method
4.	Mercury ( as Hg )	mg/kg	<0.09	7.5, LATS/16/2002-03 and APHA 22nd Ed 2012 -3112B
Subcontracted*				
5.	Alpha emitters*	Bq/Cm <sup>2</sup>	ND	APHA 22nd. Edn. 7110B Followed by Radiation Counting System
6.	Beta emitters*	Bq/Cm <sup>2</sup>	ND	APHA 22nd. Edn. 7110B Followed by Radiation Counting System
7.	Gama emitters*	Bq/Cm <sup>2</sup>	ND	APHA 22nd. Edn. 7110B Followed by Radiation Counting System

Remarks (if any) ND= Not Detected

Lab Incharge



\*\*End of Report\*\*

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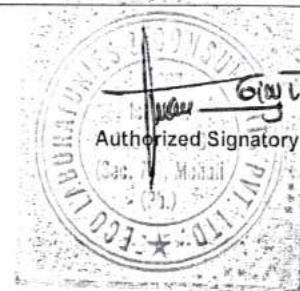


## TEST REPORT

Test Report No.: EL150916GS001		EL-15-16/5788		Page No. 1/1
Customer		Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab		
Type of Sample:		Bottom Ash		
Work Order No. & Date:		NPL/47000-04271 dated 23.08.16		
Mode of Collection of Sample:		Sampling by Laboratory		
Packing, Markings, Seal & Identity:		Poly Bag Marked '15/S/06'		
Quantity:		1Kg		
Date of Sampling:		15.09.2016		
Sampling Location:		Ash Slurry Pump House		
Date of Receipt of Sample:		15.09.2016		
Period of Analysis		15.09.2016 To 09.11.2016		
Date of Reporting:		09.11.2016		
S.No	Test Parameters	Units	Results	Test Method
1.	Lead ( as Pb )	mg/kg	<0.1	7.5, LATS/16/2002-03 and APHA-22nd Ed 2012-3111B A-Ac Flame AAS Method
2.	Arsenic ( as As )	mg/kg	<0.1	7.5, LATS/16/2002-03 and APHA-22nd Ed 2012-3114C
3.	Total Chromium ( as Cr )	mg/kg	<0.1	7.5, LATS/16/2002-03 and APHA-22nd Ed 2012-3111B A-Ac Flame AAS Method
4.	Mercury ( as Hg )	mg/kg	<0.09	7.5, LATS/16/2002-03 and APHA 22nd Ed 2012 -3112B
Subcontracted*				
5.	Alpha emitters*	Bq/Cm <sup>2</sup>	ND	APHA 22nd. Edn. 7110B Followed by Radiation Counting System
6.	Beta emitters*	Bq/Cm <sup>2</sup>	ND	APHA 22nd. Edn. 7110B Followed by Radiation Counting System
7.	Gama emitters*	Bq/Cm <sup>2</sup>	ND	APHA 22nd. Edn. 7110B Followed by Radiation Counting System

Remarks (if any) ND= Not Detected

Lab Incharge



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

PTO





# Eco Laboratories & Consultants Pvt. Ltd.

Environment Due Diligence, Monitoring and Analysis Services

ISO-14001:2008 OHSAS-18001:2007 CIN: U74140PB2011PTC034739



ISO 9001:2008

## TEST REPORT

Test Report No.: EL150916GS002		EL-15-16/5187		PageNo. 1/1
Customer		Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab		
Type of Sample:		Fly Ash		
Work Order No. & Date:		NPL/47000-04271 dated 23.08.16		
Mode of Collection of Sample:		Sampling by Laboratory		
Packing, Markings, Seal & Identity:		Poly Bag Marked '15/S/07'		
Quantity:		1Kg		
Date of Sampling:		15.09.2016		
Sampling Location:		From Ash Silo		
Date of Receipt of Sample:		15.09.2016		
Period of Analysis		15.09.2016 To 09.11.2016		
Date of Reporting:		09.11.2016		
S.No	Test Parameters	Units	Results	Test Method
1.	Lead ( as Pb )	mg/kg	<0.1	7.5, LATS/16/2002-03 and APHA-22nd Ed 2012-3111B A-Ac Flame AAS Method
2.	Arsenic ( as As )	mg/kg	<0.1	7.5, LATS/16/2002-03 and APHA-22nd Ed 2012-3114C
3.	Total Chromium ( as Cr )	mg/kg	<0.1	7.5, LATS/16/2002-03 and APHA-22nd Ed 2012-3111B A-Ac Flame AAS Method
4.	Mercury ( as Hg )	mg/kg	<0.09	7.5, LATS/16/2002-03 and APHA 22nd Ed 2012 -3112B
Subcontracted*				
5.	Alpha emitters*	Bq/Cm <sup>2</sup>	ND	APHA 22nd. Edn. 7110B Followed by Radiation Counting System
6.	Beta emitters*	Bq/Cm <sup>2</sup>	ND	APHA 22nd. Edn. 7110B Followed by Radiation Counting System
7.	Gama emitters*	Bq/Cm <sup>2</sup>	ND	APHA 22nd. Edn. 7110B Followed by Radiation Counting System

Remarks (if any) ND= Not Detected

Lab Incharge



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

PTO



## TEST REPORT

PPCB-Ref. No. Lab/3233392  
Dated-30.09.2011



Test Report No. :EL081216GA004	6087/14/12/16	Page No. 1/2
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101	
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016	
Type of Sample	Ambient Air	
Mode of Collection of Sample	Sampling by laboratory	
Date of Sampling	07/12/2016	
Sampling Location	Near NDCT	
Sampling Protocol	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.	
Date of Receipt of Sample	08/12/2016	
Period of Analysis	08/12/2016 To 10/12/2016	
Date of Reporting	14/12/2016	
Testing Protocol	NAAQS 2009	
Environmental Condition	Normal	

### RESULTS

S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method
1	Particulate Matter (PM 10)	µg/m3	98	100	IS:5182 (P-23) 2004
2	Particulate Matter (PM 2.5)	µg/m3	40.14	60	Lab SOP No. EL/SOP/AAQ/01, Issue No. & Issue Date 03 & 01.01.2016
	Sulphur Dioxide (SO2)	µg/m3	5.83	80	IS:5182 (P-2) 2001
4	Nitrogen Oxides (as NO2)	µg/m3	11.56	80	IS:5182 (P-6) 2006
5	Ammonia (NH3)	µg/m3	<5	400	Lab SOP No. EL/SOP/AAQ/02, Issue No. & Issue Date 03 & 01.01.2016
6	Ozone (O3)	µg/m3	<5	180	IS:5182 (Part-9) 1974 R2003
7	Carbon Monoxide (CO)	mg/m3	<1.5	04	Lab SOP No. EL/SOP/AAQ/03, Issue No. & Issue Date 03 & 01.01.2016
8	Lead (Pb)	µg/m3	<0.04	1.0	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
9	Arsenic (As)	ng/m3	<1	06	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
10	Nickel (Ni)	ng/m3	<10	20	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
11	Benzene (C6H6)	µg/m3	<2	05	IS:5182 (P-11) 2006



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PPCB-Ref. No. Lab/3238892

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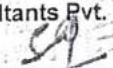
Test Report No. :EL081216GA004					
S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method
12	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	<0.5	01	IS:5182 (P-12) 2004

Remarks (if any)

\*\*End of Report\*\*

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**TEST REPORT**

PPCB-Ref. No. Lab/3233392

Dated-30.09.2011



Test Report No. :EL081216GA005		5088/14/2/16	Page No. 1/2
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101		
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016		
Type of Sample	Ambient Air		
Mode of Collection of Sample	Sampling by laboratory		
Date of Sampling	07/12/2016		
Sampling Location	Near Loco Shed		
Sampling Protocol	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.		
Date of Receipt of Sample	08/12/2016		
Period of Analysis	08/12/2016 To 10/12/2016		
Date of Reporting	14/12/2016		
Testing Protocol	NAAQS 2009		
Environmental Condition	Normal		

**RESULTS**

S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method
1	Particulate Matter (PM 10)	µg/m3	97.36	100	IS:5182 (P-23) 2004
2	Particulate Matter (PM 2.5)	µg/m3	39.78	60	Lab SOP No. EL/SOP/AAQ/01, Issue No. & Issue Date 03 & 01.01.2016
	Sulphur Dioxide (SO2)	µg/m3	10.25	80	IS:5182 (P-2) 2001
4	Nitrogen Oxides (as NO2)	µg/m3	18.56	80	IS:5182 (P-6) 2006
5	Ammonia (NH3)	µg/m3	<5	400	Lab SOP No. EL/SOP/AAQ/02, Issue No. & Issue Date 03 & 01.01.2016
6	Ozone (O3)	µg/m3	<5	180	IS:5182 (Part-9) 1974 R2003
7	Carbon Monoxide (CO)	mg/m3	<1.5	04	Lab SOP No. EL/SOP/AAQ/03, Issue No. & Issue Date 03 & 01.01.2016
8	Lead (Pb)	µg/m3	<0.04	1.0	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
9	Arsenic (As)	ng/m3	<1	06	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
10	Nickel (Ni)	ng/m3	<10	20	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
11	Benzene (C6H6)	µg/m3	<2	05	IS:5182 (P-11) 2006



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PPCB-Ref. No. Lab/3238892

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
Test Report No. :EL081216GA005					6088/14/12/13	Page No. 2/2
S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method	
12	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	<0.5	01	IS:5182 (P-12) 2004	

Remarks (if any)

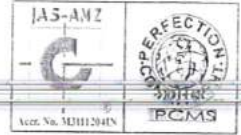
\*\*End of Report\*\*

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### TEST REPORT

PPCB-Ref. No. Lab/3233392  
Dated-30.09.2011

Test Report No. :EL081216GA003		6088/10/12/16	Page No. 1/2
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101		
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016		
Type of Sample	Ambient Air		
Mode of Collection of Sample	Sampling by laboratory		
Date of Sampling	07/12/2016		
Sampling Location	Near Switch Yard		
Sampling Protocol	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.		
Date of Receipt of Sample	08/12/2016		
Period of Analysis	08/12/2016 To 10/12/2016		
Date of Reporting	14/12/2016		
Testing Protocol	NAAQS 2009		
Environmental Condition	Normal		

### RESULTS

S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method
1	Particulate Matter (PM 10)	µg/m3	97.85	100	IS:5182 (P-23) 2004
2	Particulate Matter (PM 2.5)	µg/m3	39.75	60	Lab SOP No. EL/SOP/AAQ/01, Issue No. & Issue Date 03 & 01.01.2016
	Sulphur Dioxide (SO2)	µg/m3	9.78	80	IS:5182 (P-2) 2001
4	Nitrogen Oxides (as NO2)	µg/m3	17.56	80	IS:5182 (P-6) 2006
5	Ammonia (NH3)	µg/m3	<5	400	Lab SOP No. EL/SOP/AAQ/02, Issue No. & Issue Date 03 & 01.01.2016
6	Ozone (O3)	µg/m3	<5	180	IS:5182 (Part-9) 1974 R2003
7	Carbon Monoxide (CO)	mg/m3	<1.5	04	Lab SOP No. EL/SOP/AAQ/03, Issue No. & Issue Date 03 & 01.01.2016
8	Lead (Pb)	µg/m3	<0.04	1.0	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
9	Arsenic (As)	ng/m3	<1	06	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
10	Nickel (Ni)	ng/m3	<10	20	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
11	Benzene (C6H6)	µg/m3	<2	05	IS:5182 (P-11) 2006



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PPCB-Ref. No. Lab/3238892

Dated-30.09.2011

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Test Report No. :EL081216GA003					
S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method
12	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	<0.5	01	IS:5182 (P-12) 2004

Remarks (if any)

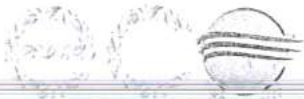
\*\*End of Report\*\*

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## TEST REPORT

Ref. No. Lab/3233392

Dated-30.09.2011

Test Report No. : EL081216GA002		Page No. 1/2
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101	6025/14/12/16
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016	
Type of Sample	Ambient Air	
Mode of Collection of Sample	Sampling by laboratory	
Date of Sampling	07/12/2016	
Sampling Location	Near Storm Water Pump-2	
Sampling Protocol	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.	
Date of Receipt of Sample	08/12/2016	
Period of Analysis	08/12/2016 To 10/12/2016	
Date of Reporting	14/12/2016	
Testing Protocol	NAAQS 2009	
Environmental Condition	Normal	

### RESULTS

S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method
1	Particulate Matter (PM 10)	µg/m <sup>3</sup>	98.56	100	IS:5182 (P-23) 2004
2	Particulate Matter (PM 2.5)	µg/m <sup>3</sup>	43.68	60	Lab SOP No. EL/SOP/AAQ/01, Issue No. & Issue Date 03 & 01.01.2016
3	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	10.85	80	IS:5182 (P-2) 2001
4	Nitrogen Oxides (as NO <sub>2</sub> )	µg/m <sup>3</sup>	21.74	80	IS:5182 (P-6) 2006
5	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	<5	400	Lab SOP No. EL/SOP/AAQ/02, Issue No. & Issue Date 03 & 01.01.2016
6	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	<5	180	IS:5182 (Part-9) 1974 R2003
7	Carbon Monoxide (CO)	mg/m <sup>3</sup>	<1.5	04	Lab SOP No. EL/SOP/AAQ/03, Issue No. & Issue Date 03 & 01.01.2016
8	Lead (Pb)	µg/m <sup>3</sup>	<0.04	1.0	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
9	Arsenic (As)	ng/m <sup>3</sup>	<1	06	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
10	Nickel (Ni)	ng/m <sup>3</sup>	<10	20	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
11	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<2	05	IS:5182 (P-11) 2006



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PCB-Ref. No. Lab/3238892

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Dated-30.09.2011

Test Report No. :EL081216GA002				6085	14/12/16	Page No. 2/2
S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method	
12	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	<0.5	01	IS:5182 (P-12) 2004	

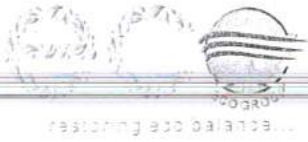
Remarks (if any)

\*\*End of Report\*\*

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## TEST REPORT

PPCB-Ref. No. Lab/3233392

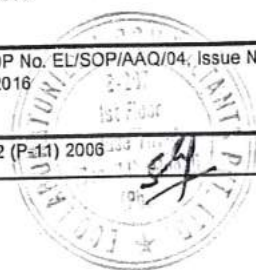
Dated-30.09.2011



Test Report No. : EL091216GA004		6092/14/12/16	Page No. 1/2
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101		
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016		
Type of Sample	Ambient Air		
Mode of Collection of Sample	Sampling by laboratory		
Date of Sampling	08/12/2016		
Sampling Location	Vill. Salempur Rajpura		
Sampling Protocol	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.		
Date of Receipt of Sample	09/12/2016		
Period of Analysis	09/12/2016 To 12/12/2016		
Date of Reporting	14/12/2016		
Testing Protocol	NAAQS 2009		
Environmental Condition	Normal		

### RESULTS

S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method
1	Particulate Matter (PM 10)	µg/m <sup>3</sup>	96.78	100	IS:5182 (P-23) 2004
2	Particulate Matter (PM 2.5)	µg/m <sup>3</sup>	39.6	60	Lab SOP No. EL/SOP/AAQ/01, Issue No. & Issue Date 03 & 01.01.2016
3	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	6.05	80	IS:5182 (P-2) 2001
4	Nitrogen Oxides (as NO <sub>2</sub> )	µg/m <sup>3</sup>	12.96	80	IS:5182 (P-6) 2006
5	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	<5	400	Lab SOP No. EL/SOP/AAQ/02, Issue No. & Issue Date 03 & 01.01.2016
6	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	<5	180	IS:5182 (Part-9) 1974 R2003
7	Carbon Monoxide (CO)	mg/m <sup>3</sup>	<1.5	04	Lab SOP No. EL/SOP/AAQ/03, Issue No. & Issue Date 03 & 01.01.2016
8	Lead (Pb)	µg/m <sup>3</sup>	<0.04	1.0	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
9	Arsenic (As)	ng/m <sup>3</sup>	<1	06	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
10	Nickel (Ni)	ng/m <sup>3</sup>	<10	20	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
11	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<2	05	IS:5182 (P-11) 2006



PTO



PCB-Ref. No. Lab/3233332

Dated-30.09.2011

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Test Report No. :EL091216GA004				6092/14/2/16	Page No. 2/2
S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method
12	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	<0.5	01	IS:5182 (P-12) 2004

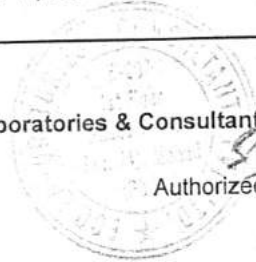
Remarks (if any)

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

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**TEST REPORT**

PPCB-Ref. No. 155/3233392

Dated-30/09/2011



Test Report No. : EL091216GA005	6093   14/12/16	Page No. 1/2
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101	
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016	
Type of Sample	Ambient Air	
Mode of Collection of Sample	Sampling by laboratory	
Date of Sampling	08/12/2016	
Sampling Location	On the roof top (Vill. Dadumajra Rajpura)	
Sampling Protocol	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.	
Date of Receipt of Sample	09/12/2016	
Period of Analysis	09/12/2016 To 12/12/2016	
Date of Reporting	14/12/2016	
Testing Protocol	NAAQS 2009	
Environmental Condition	Normal	

**RESULTS**

S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method
1	Particulate Matter (PM 10)	µg/m3	95.89	100	IS:5182 (P-23) 2004
2	Particulate Matter (PM 2.5)	µg/m3	39.11	60	Lab SOP No. EL/SOP/AAQ/01, Issue No. & Issue Date 03 & 01.01.2016
3	Sulphur Dioxide (SO2)	µg/m3	6.16	80	IS:5182 (P-2) 2001
4	Nitrogen Oxides (as NO2)	µg/m3	13.48	80	IS:5182 (P-6) 2006
5	Ammonia (NH3)	µg/m3	<5	400	Lab SOP No. EL/SOP/AAQ/02, Issue No. & Issue Date 03 & 01.01.2016
6	Ozone (O3)	µg/m3	<5	180	IS:5182 (Part-9) 1974 R2003
7	Carbon Monoxide (CO)	mg/m3	<1.5	04	Lab SOP No. EL/SOP/AAQ/03, Issue No. & Issue Date 03 & 01.01.2016
8	Lead (Pb)	µg/m3	<0.04	1.0	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
9	Arsenic (As)	ng/m3	<1	06	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
10	Nickel (Ni)	ng/m3	<10	20	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
11	Benzene (C6H6)	µg/m3	<2	05	IS:5182 (P-11) 2006



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PPCB-Ref. No. Lab/3238592

Dated-30.09.2011



Test Report No. :EL091216GA005					6092/19/12/13	Page No. 2/2
S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method	
12	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	<0.5	01	IS:5182 (P-12) 2004	

Remarks (if any)

\*\*End of Report\*\*

For Eco Laboratories & Consultants Pvt. Ltd.

  
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## TEST REPORT

PPCB-Ref. No. Lab/3233332  
Dated-30.09.2011



Test Report No. :EL091216GA003	5091/14/12/15	Page No. 1/2
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101	
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016	
Type of Sample	Ambient Air	
Mode of Collection of Sample	Sampling by laboratory	
Date of Sampling	08/12/2016	
Sampling Location	On the roof top (Vill. Dabhali Rajpura)	
Sampling Protocol	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.	
Date of Receipt of Sample	09/12/2016	
Period of Analysis	09/12/2016 To 12/12/2016	
Date of Reporting	14/12/2016	
Testing Protocol	NAAQS 2009	
Environmental Condition	Normal	

### RESULTS

S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method
1	Particulate Matter (PM 10)	µg/m <sup>3</sup>	95.75	100	IS:5182 (P-23) 2004
2	Particulate Matter (PM 2.5)	µg/m <sup>3</sup>	38.75	60	Lab SOP No. EL/SOP/AAQ/01, Issue No. & Issue Date 03 & 01.01.2016
3	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	5.78	80	IS:5182 (P-2) 2001
4	Nitrogen Oxides (as NO <sub>2</sub> )	µg/m <sup>3</sup>	11.96	80	IS:5182 (P-6) 2006
5	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	<5	400	Lab SOP No. EL/SOP/AAQ/02, Issue No. & Issue Date 03 & 01.01.2016
6	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	<5	180	IS:5182 (Part-9) 1974 R2003
7	Carbon Monoxide (CO)	mg/m <sup>3</sup>	<1.5	04	Lab SOP No. EL/SOP/AAQ/03, Issue No. & Issue Date 03 & 01.01.2016
8	Lead (Pb)	µg/m <sup>3</sup>	<0.04	1.0	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
9	Arsenic (As)	ng/m <sup>3</sup>	<1	06	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
10	Nickel (Ni)	ng/m <sup>3</sup>	<10	20	Lab SOP No. EL/SOP/AAQ/04, Issue No. & Issue Date 03 & 01.01.2016
11	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<2	05	IS:5182 (P-11) 2006



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PPCB-Ref. No. Lab/8268892

Dated-30.09.2011



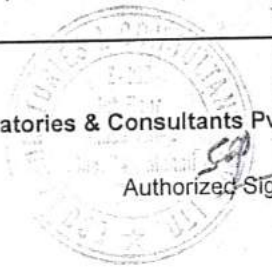
Test Report No. : EL091216GA003					6091/14/12/16	Page No. 2/2
S.No.	Test Parameter	Units	Results	NAAQS 2009	Test Method	
12	Benzo Pyrene (BaP), Particulate Phase Only	ng/m3	<0.5	01	IS:5182 (P-12) 2004	

Remarks (if any)

\*\*End of Report\*\*

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## TEST REPORT

PPCB-Ref. No. Lab/3233392  
 Dated-30.09.2011

6084/14/12/15

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Test Report No. : EL081216GA001	
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Dist Patiala , Rajpura-140101
Work Order No. & Date	NPL147000-04271 Dt.: 23/08/2016
Type of Sample	Stack Emission
Mode of Collection of Sample	Sampling by laboratory
Date of Sampling	08/12/2016
Sampling Location	Boiler (Unit-2)
Sampling Protocol	IS: 11255 (P-1) 1985 R-2003 and Customer's Requirements
Date of Receipt of Sample	08/12/2016
Period of Analysis	08/12/2016 To 10/12/2016
Date of Reporting	14/12/2016
Testing Protocol	EPA: GSR 176 (E), April 2, 1996
Environmental Conditions	Clear Sky

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Source of emission	Stack attached to Boiler
Identification/Make	MHI
Capacity	2322 TPH
Type of Fuel Used	Coal
Fuel Quantity/hour	340 Ton/hr for 700MW
APCD Details (If provided)	Electrostatic Precipitators
Stack Identification	Single
Stack Description (Shape & Material)	Circular & Metal
Dimension of Stack (m/inch))	Dia=7.5m
Sampling Port hole/Platform	Sampling done by standing on platform
Height of Stack from ground level (m)	275m
Height of Stack from nearest roof top (m)	--
Stack Temperature (°C)	125
Stack Velocity (m/s)	18.19
Sampling Time	17 Minutes



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Test Report No. :EL081216GA001

6084/16/12/16

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### RESULTS

S.No.	Test Parameter	Unit	Result	Limits	Method
1	Particulate Matter (PM) at 12% CO <sub>2</sub>	mg/Nm <sup>3</sup>	43.19	50	IS: 11255 (P-1) 1985
2	Sulphur Dioxide (SO <sub>2</sub> )	ppm	450	-	Lab SOP No. EL/SOP/SE/12, Issue No. & Issue Date 03 & 01.01.2016
3	Nitrogen Oxides (NO <sub>x</sub> )	ppm	235	-	Lab SOP No. EL/SOP/SE/12, Issue No. & Issue Date 03 & 01.01.2016
4	Carbon Monoxide (CO)	mg/Nm <sup>3</sup>	5.38	-	Lab SOP No. EL/SOP/SE/12, Issue No. & Issue Date 03 & 01.01.2016
5	Mercury as (Hg)	mg/Nm <sup>3</sup>	<0.05	-	USEPA Method-29

Remarks (if any)

\*\*End of Report\*\*

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## TEST REPORT

PPCB-Ref. No. Lab/3233392

Dated-30.09.2011



Test Report No. : EL091216GA001		6089/14/12/16	Page No. 1/2
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101		
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016		
Type of Sample	Stack Emission		
Mode of Collection of Sample	Sampling by laboratory		
Date of Sampling	09/12/2016		
Sampling Location	Process Stack (Bunker-2)		
Sampling Protocol	IS: 11255 (P-1) 1985 R-2003 and Customer's Requirements		
Date of Receipt of Sample	09/12/2016		
Period of Analysis	09/12/2016 To 12/12/2016		
Date of Reporting	14/12/2016		
Testing Protocol	----		
Environmental Conditions	Clear Sky		

Source of emission	Stack attached to Process (Bunker-2)
Identification/Make	--
Capacity	--
Type of Fuel Used	Electricity
Fuel Quantity/hour	--
*PCD Details (If provided)	Bag House Filter
Stack Identification	Single
Stack Description (Shape & Material)	Circular & Metal
Dimension of Stack (m/inch))	Dia=10 inch
Sampling Port hole/Platform	Sampling done by standing on platform
Height of Stack from ground level (m)	80m
Height of Stack from nearest roof top (m)	--
Stack Temperature (°C)	40
Stack Velocity (m/s)	13.96
Sampling Time	18 Minutes



PTO





PPCB-Ref. No. Lab/3233392  
Dated-30.09.2011

Not Valid for Consent Purpose

Test Report No. :EL091216GA001

6089/14/12/16

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### RESULTS

S.No.	Test Parameter	Unit	Result	Method
1	Particulate Matter (PM)	mg/Nm <sup>3</sup>	35.12	IS: 11255 (P-1) 1985

Remarks (if any)

\*\*End of Report\*\*

For Eco Laboratories & Consultants Pvt. Ltd.

  
Lab Incharge





## TEST REPORT

PPCB-Ref. No. Lab/3233392

Dated-30.09.2011



Test Report No. :EL091216GA002		6090/14/12/16	Page No. 1/2
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101		
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016		
Type of Sample	Stack Emission		
Mode of Collection of Sample	Sampling by laboratory		
Date of Sampling	09/12/2016		
Sampling Location	Process Stack (Crusher)		
Sampling Protocol	IS: 11255 (P-1) 1985 R-2003 and Customer's Requirements		
Date of Receipt of Sample	09/12/2016		
Period of Analysis	09/12/2016 To 12/12/2016		
Date of Reporting	14/12/2016		
Testing Protocol	----		
Environmental Conditions	Clear Sky		

Source of emission	Stack attached to Process (Crusher)
Identification/Make	Process Stack (Crusher)
Capacity	--
Type of Fuel Used	Electricity
Fuel Quantity/hour	--
APCD Details (If provided)	Bag House Filter
Stack Identification	Single
Stack Description (Shape & Material)	Circular & Metal
Dimension of Stack (m/inch))	Dia=1800mm
Sampling Port hole/Platform	Sampling done by standing on platform
Height of Stack from ground level (m)	30m
Height of Stack from nearest roof top (m)	--
Stack Temperature (°C)	38
Stack Velocity (m/s)	11.03
Sampling Time	22 Minutes



PTO



PPCB-Ref. No. Lab/3233392  
Dated-30.09.2011

Not Valid for other purposes

Test Report No. : EL091216GA002 6090/14/12/16 Page No. 2/2

**RESULTS**

S.No.	Test Parameter	Unit	Result	Method
1	Particulate Matter (PM)	mg/Nm <sup>3</sup>	39.48	IS: 11255 (P-1) 1985

Remarks (if any)

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

**For Eco Laboratories & Consultants Pvt. Ltd.**

  
Lab Incharge

  
Authorized Signatory



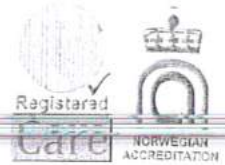


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ISO-14001:2004 OHSAS-18001:2007 CIN : U74140PB2011PTC034739

A Government Approved/Accredited Test House



PPCB-Ref. No. Lab/3233892

## TEST REPORT

Dated-30.09.2011

Test Report No. :EL160916GA001		5706/20/09/16	Page No. 1/2
Customer	Nabha Power Limited PO Box 28 Nr Village-Nalash Dist Patiala , Rajpura-140101		
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016		
Type of Sample	Stack Emission		
Mode of Collection of Sample	Sampling by laboratory		
Date of Sampling	16/09/2016		
Sampling Location	Process Stack (Crusher)		
Sampling Protocol	IS: 11255 (P-1) 1985 R-2003 and Customer's Requirements		
Date of Receipt of Sample	16/09/2016		
Period of Analysis	16/09/2016 To 17/09/2016		
Date of Reporting	20/09/2016		
Testing Protocol	-----		
Environmental Conditions	Clear Sky		

*Not valid for Consent Purpose*

Source of emission	Stack attached to Process(Crusher)
Identification/Make	--
Capacity	--
Type of Fuel Used	Electricity
Fuel Quantity/hour	--
APCD Details (If provided)	Bag House Filter
Stack Identification	Single
Stack Description (Shape & Material)	Circular and Metal
Dimension of Stack (m/inch))	1800mm
Sampling Port hole/Platform	Sampling done by standing on platform
Height of Stack from ground level (m)	30m
Height of Stack from nearest roof top (m)	--
Stack Temperature (°C)	36
Stack Velocity (m/s)	10.73
Sampling Time	22 Minutes

*Juan Gray*

PTO



CB-Ref. No. Lab/3233392

Dated-30.09.2011

Not Valid for Consent Purpose

Test Report No. :EL160916GA001

5706/20/09/16

Page No. 2/2

### RESULTS

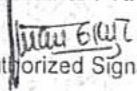
S.No.	Test Parameter	Unit	Result	Method
1	Particulate Matter (PM)	mg/Nm <sup>3</sup>	36.59	IS: 11255 (P-1) 1985

Remarks (if any)

\*\*End of Report\*\*

For Eco Laboratories & Consultants Pvt. Ltd.

  
Lab Incharge

  
Authorized Signatory





# Eco Laboratories & Consultants Pvt. Ltd.

Environment Due-diligence, Monitoring and Analysis Services

ISO-14001:2008 OHSAS-18001:2007 CIN : U74140PB2011PTC034739



PPCB-Ref. No. Lab/3233892



Dated-30.09.2011

## TEST REPORT

Test Report No. :EL081216GW014		6098A/14/12/16	Page No. 1/1
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt. Patiala , Rajpura-140101		
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016		
Type of Sample	Water		
Mode of Collection of Sample	Sampling by laboratory		
Date of Sampling	08/12/2016		
Sampling Location	From Outlet Point (Ground Water No.1)		
Sampling Protocol	IS: 3025-(P-1)-1987-R-1998 Amdt-1		
Packing, Markings, Seal & Quantity	Plastic Bottle & Sterilized Glass Bottle Marked 'T/08/01' 2 Litre +250ml		
Date of Receipt of Sample	08/12/2016		
Period of Analysis	08/12/2016 To 14/12/2016		
Date of Reporting	14/12/2016		
Testing Protocol	--		
Sample Observation	Liquid with suspended impurities		

### RESULTS

S.No.	Test Parameter	Units	Results	Specifications		Test Method
				Specifications	Limits (Max)	
1	Hardness as CaCO3	mg/L	192	200	600	APHA-22nd Ed 2012-2340C
2	Total Dissolved Solids	mg/L	488	500	2000	APHA-22nd Ed 2012- 2540C Dried at 180°C
3	Total Suspended Solids	mg/L	8	-	-	APHA-22nd Ed 2012- 2540 D Dried at 103-105°C
4	pH	-	7.51	6.5 - 8.5	No relaxation	APHA-22nd Ed 2012 -4500B
5	Biochemical Oxygen Demand (BOD)	mg/L	3.5	-	-	IS: 3025 (Part-44)-1993 RA 1999, Ad.1 BOD 3-days at 27 °C
6	Chemical Oxygen Demand (COD)	mg/L	32.3	-	-	APHA-22nd Ed 2012- 5220B, Open Reflux Method
7	Arsenic as As	mg/L	<0.005	0.01	0.05	APHA-22nd Ed 2012-3114C, Hydride Generation
8	Lead as Pb	mg/L	<0.01	0.01	No relaxation	APHA-22nd Ed 2012-3111B, A-Ac Flame AAS Method
9	Mercury as Hg	mg/L	<0.0005	0.001	No relaxation	APHA -22st Ed. 2005 3112B
10	Chromium as Cr	mg/L	<0.05	0.05	No relaxation	APHA-22nd Ed 2012-3111B, A-Ac Flame AAS Method

Remarks (if any)

\*\*End of Report\*\*

Lab Incharge

For Eco Laboratories & Consultants Pvt. Ltd.



PTO

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Environment Due-diligence, Monitoring and Analysis Services

ISO-14001:2008 OHSAS-18001:2007 CIN : U74140PB2011PTC034739



ISO 9001:2008

Ref. No. Lab/3233392  
Dated-30.09.2011

## TEST REPORT

Test Report No. :EL081216GW015		6097A   14/12/16	Page No. 1/1
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101		
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016		
Type of Sample	Water		
Mode of Collection of Sample	Sampling by laboratory		
Date of Sampling	08/12/2016		
Sampling Location	From Outlet Point (Ground Water No.2)		
Sampling Protocol	IS: 3025-(P-1)-1987-R-1998 Amdt-1		
Packing, Markings, Seal & Quantity	Plastic Bottle & Sterilized Glass Bottle Marked 'T/8/02' 2 Litre +250ml		
Date of Receipt of Sample	08/12/2016		
Period of Analysis	08/12/2016 To 14/12/2016		
Date of Reporting	14/12/2016		
Testing Protocol	--		
Sample Observation	Brownish liquid with settleable & suspended impurities		

### RESULTS

S.No.	Test Parameter	Units	Results	Requirements		Test Method
				Acceptable Limit	Permissible limit in absence of alternate source	
1	Hardness as CaCO <sub>3</sub>	mg/L	69.3	200	600	APHA-22nd Ed 2012-2340C
2	Total Dissolved Solids	mg/L	400	500	2000	APHA-22nd Ed 2012- 2540C Dried at 180°C
3	Total Suspended Solids	mg/L	235	-	-	APHA-22nd Ed 2012- 2540 D Dried at 103-105°C
4	pH	-	7.65	6.5 - 8.5	No relaxation	APHA-22nd Ed 2012 -4500B
5	Biochemical Oxygen Demand (BOD)	mg/L	<2	-	-	IS: 3025 (Part-44)-1993 RA 1999, Ad.1 BOD 3-days at 27 °C
6	Chemical Oxygen Demand (COD)	mg/L	8.1	-	-	APHA-22nd Ed 2012- 5220B, Open Reflux Method
7	Arsenic as As	mg/L	<0.005	0.01	0.05	APHA-22nd Ed 2012-3114C, Hydride Generation
8	Lead as Pb	mg/L	<0.01	0.01	No relaxation	APHA-22nd Ed 2012-3111B, A-Ac Flame AAS Method
9	Mercury as Hg	mg/L	<0.0005	0.001	No relaxation	APHA -22st Ed. 2005 3112B
10	Chromium	mg/L	<0.05	0.05	No relaxation	APHA-22nd Ed 2012-3111B, A-Ac Flame AAS Method

Remarks (if any)

\*\*End of Report\*\*

Lab Incharge

For Eco Laboratories & Consultants Pvt. Ltd.



PTO

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Environment Due Diligence, Monitoring and Analysis Services

ISO-14001:2008 OHSAS-18001:2007 CIN : U74140PB2011PTC034739



PPCB-Ref. No. Lab/3233892  
Dated-30.09.2011

## TEST REPORT

Test Report No. : EL081216GW016		6095A / 14/12/16	Page No. 1/1
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101		
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016		
Type of Sample	Water		
Mode of Collection of Sample	Sampling by laboratory		
Date of Sampling	08/12/2016		
Sampling Location	From Outlet Point (Ground Water No.3)		
Sampling Protocol	IS: 3025-(P-1)-1987-R-1998 Amdt-1		
Packing, Markings, Seal & Quantity	Plastic Bottle & Sterilized Glass Bottle Marked 'T/08/03' 2 Litre + 250ml		
Date of Receipt of Sample	08/12/2016		
Period of Analysis	08/12/2016 To 14/12/2016		
Date of Reporting	14/12/2016		
Testing Protocol	--		
Sample Observation	Liquid with suspended impurities		

### RESULTS

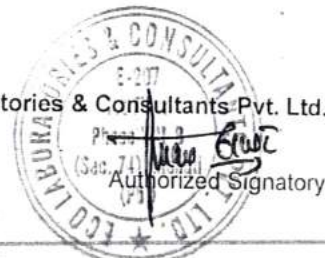
S.No.	Test Parameter	Units	Results	Requirements		Test Method
				Acceptable Limit	Permissible limit in absence of alternate source	
1	Hardness as CaCO <sub>3</sub>	mg/L	182	200	600	APHA-22nd Ed 2012-2340C
2	Total Dissolved Solids	mg/L	480	500	2000	APHA-22nd Ed 2012- 2540C Dried at 180°C
3	Total Suspended Solids	mg/L	9	-	-	APHA-22nd Ed 2012- 2540 D Dried at 103-105°C
4	pH	-	7.68	6.5 - 8.5	No relaxation	APHA-22nd Ed 2012 -4500B
5	Biochemical Oxygen Demand (BOD)	mg/L	<2	-	-	IS: 3025 (Part-44)-1993 RA 1999, Ad.1 BOD 3-days at 27 °C
6	Chemical Oxygen Demand (COD)	mg/L	12.1	-	-	APHA-22nd Ed 2012- 5220B, Open Reflux Method
7	Arsenic as As	mg/L	<0.005	0.01	0.05	APHA-22nd Ed 2012-3114C, Hydride Generation
8	Lead as Pb	mg/L	<0.01	0.01	No relaxation	APHA-22nd Ed 2012-3111B, A-Ac Flame AAS Method
9	Mercury as Hg	mg/L	<0.0005	0.001	No relaxation	APHA -22st Ed. 2005 3112B
10	Chromium	mg/L	<0.05	0.05	No relaxation	APHA-22nd Ed 2012-3111B, A-Ac Flame AAS Method

Remarks (if any)

\*\*End of Report\*\*

Lab Incharge

For Eco Laboratories & Consultants Pvt. Ltd.



PTO

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ISO-14001:2008 OHSAS-18001:2007 CIN : U74140PB2011PTC034739



PPCB-Ref. No. Lab/3238892  
Dated-30.09.2011

## TEST REPORT

Test Report No. : EL081216GW017	6096A   14   12   16	Page No. 1/1
Customer	Nabha Power Limited PO Box 28 Near Village-Nalash Distt Patiala , Rajpura-140101	
Work Order No. & Date	NPL/47000-04271 Dt.: 23/08/2016	
Type of Sample	Water	
Mode of Collection of Sample	Sampling by laboratory	
Date of Sampling	08/12/2016	
Sampling Location	From Outlet Point (Ground Water No.4)	
Sampling Protocol	IS: 3025-(P-1)-1987-R-1998 Amdt-1	
Packing, Markings, Seal & Quantity	Plastic Bottle & Sterilized Glass Bottle Marked 'T/08/04' 2 Litre + 250ml	
Date of Receipt of Sample	08/12/2016	
Period of Analysis	08/12/2016 To 14/12/2016	
Date of Reporting	14/12/2016	
Testing Protocol	--	
Sample Observation	Brownish liquid with settleable & suspended impurities	

### RESULTS

S.No.	Test Parameter	Units	Results	Requirements		Test Method
				Acceptable Limit	Permissible limit in absence of alternate source	
1	Hardness as CaCO3	mg/L	81.2	200	600	APHA-22nd Ed 2012-2340C
2	Total Dissolved Solids	mg/L	420	500	2000	APHA-22nd Ed 2012- 2540C Dried at 180°C
3	Total Suspended Solids	mg/L	215	-	-	APHA-22nd Ed 2012- 2540 D Dried at 103-105°C
4	pH	-	7.64	6.5 - 8.5	No relaxation	APHA-22nd Ed 2012 -4500B
5	Biochemical Oxygen Demand (BOD)	mg/L	<2	-	-	IS: 3025 (Part-44)-1993 RA 1999, Ad.1 BOD 3-days at 27 °C
6	Chemical Oxygen Demand (COD)	mg/L	12.1	-	-	APHA-22nd Ed 2012- 5220B, Open Reflux Method
7	Arsenic as As	mg/L	<0.005	0.01	0.05	APHA-22nd Ed 2012-3114C, Hydride Generation
8	Lead as Pb	mg/L	<0.01	0.01	No relaxation	APHA-22nd Ed 2012-3111B, A-Ac Flame AAS Method
9	Mercury as Hg	mg/L	<0.0005	0.001	No relaxation	APHA -22st Ed. 2005 3112B
10	Chromium	mg/L	<0.05	0.05	No relaxation	APHA-22nd Ed 2012-3111B, A-Ac Flame AAS Method

Remarks (if any)

\*\*End of Report\*\*

Lab Incharge

For Eco Laboratories & Consultants Pvt. Ltd.



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