



NABHA POWER LIMITED

O/c

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Phone: 0172 4646846 • Fax: 0172 4646802

E-mail: satish.bhardwaj@larsentoubro.com

Ref: NPL/SB/MOEF/3411

Dated: January 19, 2015

To,

Mr. Surendra Kumar
Director (S),
Government of India,
Ministry of Environment & Forests
Northern Regional Office,
Chandigarh-160030, Punjab

Sub: Six Monthly compliance Status of Environment Clearance conditions

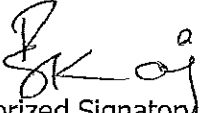
Dear Sir,

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


Authorized Signatory
19/1/15

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

Received


20/1/15
(SURENDRA KUMAR)
DIRECTOR (S)
MO of Env. & Forests
Northern Regional Office
Sector 26-D, Chandigarh-160019

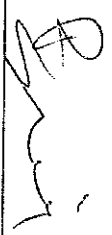
Wholly Owned Subsidiary of L&T Power Development Limited

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

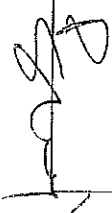
Regd. Office: PO Box no 28 Near Village Nalash, Rupura - 140#01 Punjab

COMPLIANCE STATUS OF MOEF CONDITIONS @ 1400 MW (As on 01.01.2015)

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 th May,2009, Ref No. :No.21(7)/2008/D(Coord) & 22 nd 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 is 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 ³ .	The ESP's attached to Boiler 1 & 2 are functional and have efficiencies more than 99.9%. The SPM emissions are < 50 mg/Nm ³ .
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, MOEF & 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 reports are attached as Annexure-I



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 conforming 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 capacity 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 in 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/SKM/MOEF/1423 dated: 28 th June, 2012 have been implemented to check/minimize spontaneous fire in coal yard.
15.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of project.	Adequate arrangements was made for construction labour 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 & PCB on six monthly basis.



18.	A green belt of adequate width and density shall be developed around plant periphery covering about 1/3 rd of project area preferably with local species.	1.50 Lakh trees already planted and the balance 1.0 Lakh @2500/ha shall be planted by April, 2015
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 ₂ , NO _x , 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 reports are attached as Annexure-II
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 http://envfor.nic.in .	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 alongwith 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 : http://www.Intnabhapower.com
32.	Critical pollutants levels including NO _x , RPSM ₁₀ and 2.5, SO ₂ 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	Our Service Building and Administration building got ready in the month of January, 15 and other structures like Canteen & Occupational Health center is still under construction. We are planning to implement the solar harnessing scheme in phase wise manner and the scheme in totality will be implemented by June, 15. Progress report in this regard shall be submitted to the regional office of Ministry on Bi-Monthly Basis.
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 / PPCB on periodic basis. Latest reports are attached as Annexure-III
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 EC granted to us was getting expired in the month of October, 2013 so we applied extension for the same on 22.07.2013. The 5 yr extension was made 05.02.2014 with validity up to 2018. When we applied for EC extension our Plant was already Commissioned and therefore the said condition is not applicable on us. We got the Consent to Operate for 700 MW on 09.10.2013 and for 1400 MW on 17.04.2014. We will be writing a separate request letter to regional office of the ministry at Chandigarh for deletion of the condition

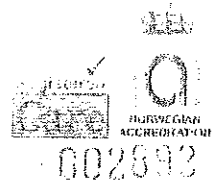
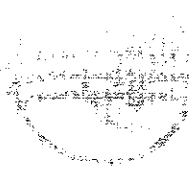
39	Hydro geological study of the area shall be reviewed annually and report submitted to the ministry. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant.	No Ground Water abstraction is being done. We are only using Canal water for generation of Power. The condition for doing Hydro Geological Studies should not be applicable on us and in this regard we shall be writing a separate request letter for deletion of the said condition.
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 close coordination with the State Pollution Control Board	Agreed
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 %.	1.50 Lakh trees already planted and the balance 1.0 Lakh @2500/ha shall be planted by April, 2015
44	Three tier green belt shall be developed all around ash pond over and above the green belt around the plant boundary.	Green Belt in the Plant area has been completed.
45	A common Green Endowment Fund shall be created and the interest earned out of it shall be used for the development and management of Green cover of the area.	One phase of Plantation under 3 Tier program is completed and the balance work around the Ash Pond will be completed by June, 15 as now the weather conditions are not suitable for plantation. Agreed and will be 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.	Being complied
47	An amount of Rs 22 Crores shall be earmarked as one time capital cost for	Agreed and will be complied



	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.	
	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.	Being Complied
48	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.	Agreed and will be complied
49	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. Satish Bhardwaj, DGM (HSE) directly reports to the Chief Executive (Head of Organization).
50	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 quality is not adversely affected due to the project.	Regular monitoring of ground water quality including heavy metals is being carried out regularly in and around the Ash Dykes. Piezometric wells are established around the ash pond area. Records are maintained and the same are submitted to Regional office of the Ministry at Chandigarh. Latest reports are attached as Annexure-IV
51	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.	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. We are already monitoring Heavy metals in Ground Water by taking sample thru Piezometer and submitting the respective reports to Regional office of the ministry at Chandigarh.
52	The environment statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned	Complied.
53		

	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.	Last Environmental Report was submitted On 29,09,2014 with Regional Office of the Ministry at Chandigarh and PPCB, Patiala.
54	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.	HSE Policy have been framed and accordingly officers have been designated for achieving the objectives by adherence to the Policy. The Integrated Management Certification work ISO 9001, 14001 & OHSAS 18001 is in progress and the target date for getting the certification is June, 2015.

Green



Lab No. Lab/3230057
 Dated: 30.09.2011

TEST REPORT

EL-13-14/1830	27/12/14	Lab No.	EL191214GS05	Page-1/1
Customer:	Nabhn Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab			
Type of Sample:	Bottom Ash			
Work Order No. & Date:	NPI/47000-00878 dated 01.03.14			
Mode of Collection of Sample:	Sampling by Laboratory			
Packing, Markings, Seal & Identity:	Poly Bag Marked 'Bottom Ash'			
Quantity:	500gm			
Date of Sampling:	19.12.14			
Sampling Team:	Laboratory Representative: Mr. Uday Veer & Team Customer Representative: Mr. Vikas Kashyap			
Date of Receipt of Sample:	19.12.14			
Date of Reporting:	27.12.14			
Testing Protocol:	EPA 1986.General Standards			
Remarks & Observation:	Grey coloured slurry with free standing liquid.			

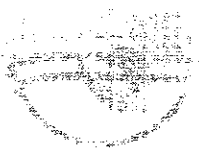
S.No	Test Parameters	Units	Results	Test Method
1.	Lead (as Pb)	mg/kg	0.202	APHA-22 nd Ed 2012-3111B A-Ac Flame AAS Method
2.	Arsenic (as As)	mg/kg	0.04	APHA-22 nd Ed 2012-3114C Hydride Generation
3.	Total Chromium (as Cr)	mg/kg	0.06	APHA-22 nd Ed 2012-3111B A-Ac Flame AAS Method
4.	Mercury (as Hg)	mg/kg	0.106	APHA -22 nd Ed. 2012 3112B

Vijay Bhat
 Technical Manager III/IV

[Signature]
 Technical Manager I/II

[Signature]

PTO



19/12/14
 11/05/2015

TEST REPORT

Customer Ref: <u>EL-13-14/18/11</u>	Date: <u>11/05/2015</u>	Lab No.:	<u>EL191214GS06</u>	Page: <u>1/1</u>
Customer:	<u>Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab</u>			
Type of Sample:	<u>Fly Ash</u>			
Work Order No. & Date:	<u>NPL/47000-00878 dated 01.03.14</u>			
Mode of Collection of Sample:	<u>Sampling by Laboratory</u>			
Packing, Markings, Seal & Identity:	<u>Poly Bag Marked 'Fly Ash'</u>			
Quantity:	<u>500gm</u>			
Date of Sampling:	<u>19.12.14</u>			
Sampling Team:	<u>Laboratory Representative: Mr. Uday Veer & Team Customer Representative: Mr. Vikas Kashyap</u>			
Date of Receipt of Sample:	<u>19.12.14</u>			
Date of Reporting:	<u>27.12.14</u>			
Testing Protocol:	<u>EPA 1986, General Standards</u>			
Remarks & Observation:	<u>Grey Colour fine powdered ash.</u>			
S.No	Test Parameters	Units	Results	Test Method
1.	Lead (as Pb)	mg/kg	0.996	APHA-22 nd Ed 2012-3111B A-Ac Flame AAS Method
2.	Arsenic (as As)	mg/kg	0.04	APHA-22 nd Ed 2012-3114C Hydride Generation
3.	Total Chromium (as Cr)	mg/kg	0.56	APHA-22 nd Ed 2012-3111B A-Ac Flame AAS Method
4.	Mercury (as Hg)	mg/kg	0.044	APHA -22 nd Ed. 2012 3112B

Uday Veer
 Technical Manager III/IV

Vikas Kashyap
 Technical Manager I/II

Brij

PTO



Eco Laboratories & Consultants Pvt. Ltd

Environment Due-diligence, Monitoring and Analysis Services

ISO-14001:2004 OHSAS-18001:2007 CIN: U74140PB2011PT0034739

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TEST REPORT

ppcb Ref. No. Lab/2008802
Date: 27/12/14

EL-14-15/18022		05/01/15		Lab No.	EL191214GA12	Page-1/1
Customer:		Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab				
Type of Sample:		Ambient Air				
Work Order No. & Date:		NPL/47000-00878 dated 01.03.14				
Mode of Collection of Sample:		Sampling by Laboratory				
Sampling Location:		Near Switch Yard				
Date of Sampling:		19.12.14				
Sampling Protocol:		IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.				
Sampling Team:		Laboratory Representative: Mr. Udayveer & Team Customer Representative: Mr. Vikas Kashyap				
Date of Receipt of Sample:		20.12.14				
Date of Reporting:		27.12.14				
Testing Protocol:		National Ambient Air Quality Standards (NAAQS) 2009				
Remarks & Observation:		Clear Sky, 24hr/8hr/1hr Sampling				
S.No	Test Parameters	Units	Results	Standards (NAAQS)	Test Method	
1.	Particulate Matter (PM _{2.5})	µg/m ³	33.75	60	Lab SOP EL-A1-PM2.5 Issue01 Dated 1.6.14 based on Manufacturer's Manual and CPCB Guidelines	
2.	Particulate Matter (PM ₁₀)	µg/m ³	95.01	100	IS: 5182 (P-23) 2001	
3.	Sulphur Dioxide (SO ₂)	µg/m ³	11.58	80	IS: 5182 (P-2) 2001	
4.	Nitrogen Oxides (NO ₂)	µg/m ³	23.65	80	IS:5182 (P-6) 2006	
5.	Carbon Monoxide (CO)	mg/m ³	BDL	04	Lab SOP EL-A2-CO Issue01 Dated 1.6.14 Electrochemical Method- Manufacturer's Manual (DL=1.5 mg/m ³)	
6.	Mercury as Hg	ng/m ³	BDL	-	APHA 22 nd Ed. 2012 3/12 D (DL=10 ng/m ³)	

Note: BDL = Below Detection Limit; DL = Detection Limit.

Technical Manager III/II

Technical Manager I/II

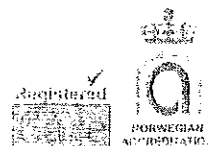
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ecoparyavaran Laboratories & Consultants Pvt. Ltd.

Environment Due-diligence, Monitoring and Analysis Services
ISO 14001:2004 OHSAS 18001:2007 CIN : U74140PB2011PTCO.M735

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TEST REPORT

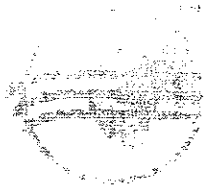
EL-14-15/5/17		01/03/14		Lab No.	EL191214GA11	Page-1/1
Customer:		Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab				
Type of Sample:		Ambient Air				
Work Order No. & Date:		NPL/47000-00878 dated 01.03.14				
Mode of Collection of Sample:		Sampling by Laboratory				
Sampling Location:		Near NDCT				
Date of Sampling:		19.12.14				
Sampling Protocol:		IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.				
Sampling Team:		Laboratory Representative: Mr. Udayveer & Team Customer Representative: Mr. Vikas Kashyap				
Date of Receipt of Sample:		20.12.14				
Date of Reporting:		27.12.14				
Testing Protocol:		National Ambient Air Quality Standards (NAAQS) 2009				
Remarks & Observation:		Clear Sky, 24hr/8hr/1hr Sampling				
S.No	Test Parameters	Units	Results	Standards (NAAQS)	Test Method	
1.	Particulate Matter (PM _{2.5})	µg/m ³	36.25	60	Lab SOP EL-A1-PM2.5 Issue01 Dated 1.6.14 based on Manufacturer's Manual and CPCB Guidelines	
2.	Particulate Matter (PM ₁₀)	µg/m ³	98.16	100	IS: 5182 (P-23) 2004	
3.	Sulphur Dioxide (SO ₂)	µg/m ³	13.75	80	IS: 5182 (P-2) 2001	
4.	Nitrogen Oxides (NO ₂)	µg/m ³	27.94	80	IS:5182 (P-6) 2006	
5.	Carbon Monoxide (CO)	mg/m ³	BDL.	04	Lab SOP EL-A2-CO Issue01 Dated 1.6.14 Electrochemical Method- Manufacturer's Manual (DL=1.5 mg/m ³)	
6.	Mercury as Hg	ng/m ³	BDL.	-	APHA 22 nd Ed. 2012 3/12 D (DL=10 ng/m ³)	

Note: BDL= Below Detection Limit; DL= Detection Limit.

Technical Manager III/IV

Technical Manager I/II

PTO

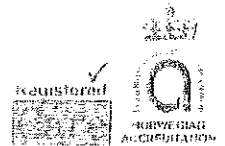


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002879

TEST REPORT

PPLD No. Lab(323887)
19.12.2014

Customer:	Nabha Power Ltd. P.O Box No. 28. Near Vill. Nalash Distt. Patiala, Rajpura, Punjab
Type of Sample:	Ambient Air
Work Order No. & Date:	NPL/47000-00878 dated 01.03.14
Mode of Collection of Sample:	Sampling by Laboratory
Sampling Location:	Near Loco Shed
Date of Sampling:	19.12.14
Sampling Protocol:	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.
Sampling Team:	Laboratory Representative: Mr. Udayveer & Team Customer Representative: Mr. Vikas Kashyap
Date of Receipt of Sample:	20.12.14
Date of Reporting:	27.12.14
Testing Protocol:	National Ambient Air Quality Standards (NAAQS) 2009
Remarks & Observation:	Clear Sky, 24hr/8hr/1hr Sampling

Page-1/1

S.No	Test Parameters	Units	Results	Standards (NAAQS)	Test Method
1.	Particulate Matter (PM _{2.5})	µg/m ³	32.5	60	Lab SOP EL-A1-PM2.5 Issue01 Dated 1.6.14 based on Manufacturer's Manual and CPCB Guidelines
2.	Particulate Matter (PM ₁₀)	µg/m ³	96.0	100	IS: 5182 (P-23) 2004
3.	Sulphur Dioxide (SO ₂)	µg/m ³	12.65	80	IS: 5182 (P-2) 2001
4.	Nitrogen Oxides (NO ₂)	µg/m ³	24.30	80	IS:5182 (P-6) 2006
5.	Carbon Monoxide (CO)	mg/m ³	BDL	04	Lab SOP EL-A2-CO Issue01 Dated 1.6.14 Electrochemical Method- Manufacturer's Manual (DL=1.5 mg/m ³)
6.	Mercury as Hg	ng/m ³	BDL	-	APHA 22 nd Ed. 2012 3/12 D (DL==10 ng/m ³)

Note: BDL = Below Detection Limit; DL = Detection Limit.

Technical Manager III

Technical Manager I/II

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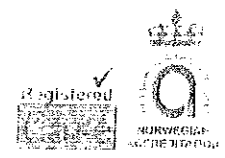


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002879

TEST REPORT

ppcb Ref No. LA/19/14/132
Date: 20/12/14

EL-14-15/19/14	11/05/15	Lab No.	EL191214GA09	Page 1/1
Customer:	Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab			
Type of Sample:	Ambient Air			
Work Order No. & Date:	NPL/47000-00878 dated 01.03.14			
Mode of Collection of Sample:	Sampling by Laboratory			
Sampling Location:	Near Strom Water Pump 2			
Date of Sampling:	19.12.14			
Sampling Protocol:	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.			
Sampling Team:	Laboratory Representative: Mr. Udayveer & Team Customer Representative: Mr. Vikas Kashyap			
Date of Receipt of Sample:	20.12.14			
Date of Reporting:	27.12.14			
Testing Protocol:	National Ambient Air Quality Standards (NAAQS) 2009			
Remarks & Observation:	Clear Sky, 24hr/8hr/1hr Sampling			

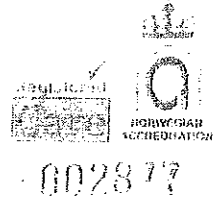
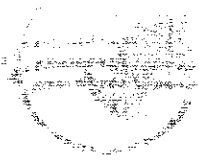
S.No	Test Parameters	Units	Results	Standards (NAAQS)	Test Method
1.	Particulate Matter (PM _{2.5})	µg/m ³	30.83	60	Lab SOP EL-A1-PM2.5 Issue01 Dated 1.6.14 based on Manufacturer's Manual and CPCB Guidelines
2.	Particulate Matter (PM ₁₀)	µg/m ³	92.75	100	IS: 5182 (P-23) 2004
3.	Sulphur Dioxide (SO ₂)	µg/m ³	10.42	80	IS: 5182 (P-2) 2001
4.	Nitrogen Oxides (NO _x)	µg/m ³	20.95	80	IS:5182 (P-6) 2006
5.	Carbon Monoxide (CO)	mg/m ³	BDL	04	Lab SOP EL-A2-CO Issue01 Dated 1.6.14 Electrochemical Method- Manufacturer's Manual (DL=1.5 mg/m ³)
6.	Mercury as Hg	ng/m ³	BDL	-	APHA 22 nd Ed. 2012 3/12 D (DL=10 ng/m ³)

Note: BDL- Below Detection Limit; DL= Detection Limit.

Technical Manager III/IV

Technical Manager I/II

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TEST REPORT

PPSB Ref. No. Lab/1738992
 Date: 30.03.2011

EL-14-15/023	01/03/01/15	Lab No.	EL191214GA13	Page-1/1	
Customer:	Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab				
Type of Sample:	Ambient Air				
Work Order No. & Date:	NPI/47000-00878 dated 01.03.14				
Mode of Collection of Sample:	Sampling by Laboratory				
Sampling Location:	On the roof top (Vill. Dadumajra, Rajpura)				
Date of Sampling:	19.12.14				
Sampling Protocol:	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.				
Sampling Team:	Laboratory Representative: Mr. Udayveer & Team Customer Representative: Mr. Vikas Kashyap				
Date of Receipt of Sample:	20.12.14				
Date of Reporting:	27.12.14				
Testing Protocol:	National Ambient Air Quality Standards (NAAQS) 2009				
Remarks & Observation:	Clear Sky, 24hr/8hr/1hr Sampling				
S.No	Test Parameters	Units	Results	Standards (NAAQS)	Test Method
1.	Particulate Matter (PM _{2.5})	µg/m ³	29.17	60	Lab SOP EL-A1-PM2.5 Issue01 Dated 1.6.14 based on Manufacturer's Manual and CPCB Guidelines
2.	Particulate Matter (PM ₁₀)	µg/m ³	89.17	100	IS: 5182 (P-23) 2004
3.	Sulphur Dioxide (SO ₂)	µg/m ³	8.18	80	IS: 5182 (P-2) 2001
4.	Nitrogen Oxides (NO ₂)	µg/m ³	16.57	80	IS:5182 (P-6) 2006
5.	Carbon Monoxide (CO)	mg/m ³	BDL	04	Lab SOP EL-A2-CO Issue01 Dated 1.6.14 Electrochemical Method- Manufacturer's Manual (DL=1.5 mg/m ³)
6.	Mercury as Hg	ng/m ³	BDL	-	APHA 22 nd Ed. 2012 3/12 D (DL=10 ng/m ³)

Note: BDL= Below Detection Limit; DL= Detection Limit.

Technical Manager III/V

Technical Manager I/II

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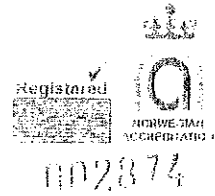


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ISO-14001:2004 OHSAS-18001:2007 CIN: U74140PB2011PTC034739

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TEST REPORT

PCCB Ref. No. Lab/1228392
Dated-30.09.2011

EL-14-15/18/g	(J-03/01/14)	Lab No.	EL191214GA08	Page-1/1
Customer:	Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab			
Type of Sample:	Ambient Air			
Work Order No. & Date:	NPL/47000-00878 dated 01.03.14			
Mode of Collection of Sample:	Sampling by Laboratory			
Sampling Location:	On the roof top (Vill. Dabhali, Rajpura)			
Date of Sampling:	19.12.14			
Sampling Protocol:	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.			
Sampling Team:	Laboratory Representative: Mr. Udayveer & Team Customer Representative: Mr. Vikas Kashyap			
Date of Receipt of Sample:	20.12.14			
Date of Reporting:	27.12.14			
Testing Protocol:	National Ambient Air Quality Standards (NAAQS) 2009			
Remarks & Observation:	Clear Sky, 24hr/8hr/1hr Sampling			

S.No	Test Parameters	Units	Results	Standards (NAAQS)	Test Method
1.	Particulate Matter (PM _{2.5})	µg/m ³	31.25	60	Lab SOP EL-A1-PM2.5 Issue01 Dated 1.6.14 based on Manufacturer's Manual and CPCB Guidelines
2.	Particulate Matter (PM ₁₀)	µg/m ³	88.06	100	IS: 5182 (P-23) 2004
3.	Sulphur Dioxide (SO ₂)	µg/m ³	7.44	80	IS: 5182 (P-2) 2001
4.	Nitrogen Oxides (NO ₂)	µg/m ³	14.51	80	IS:5182 (P-6) 2006
5.	Carbon Monoxide (CO)	mg/m ³	BDL	04	Lab SOP EL-A2-CO Issue01 Dated 1.6.14 Electrochemical Method- Manufacturer's Manual (DL=1.5 mg/m ³)
6.	Mercury as Hg	ng/m ³	BDL	-	APHA 22 nd Ed. 2012 3/12 D (DL=10 ng/m ³)

Note: BDL = Below Detection Limit; DL= Detection Limit.


Technical Manager III

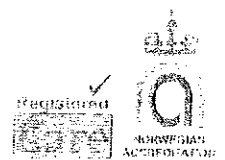



Technical Manager I/II

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TEST REPORT

EL-14-15/2014	01/03/14	Lab No.	EL191214GA07	Page-1/1	
Customer:	Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab				
Type of Sample:	Ambient Air				
Work Order No. & Date:	NPT/47000-00878 dated 01.03.14				
Mode of Collection of Sample:	Sampling by Laboratory				
Sampling Location:	Village Salempur Rajpura				
Date of Sampling:	19.12.14				
Sampling Protocol:	IS: 5182 (P-14) 2000, CPCB Guidelines and Customer's Requirements.				
Sampling Team:	Laboratory Representative: Mr. Uday veer & Team Customer Representative: Mr. Vikas Kashyap				
Date of Receipt of Sample:	20.12.14				
Date of Reporting:	27.12.14				
Testing Protocol:	National Ambient Air Quality Standards (NAAQS) 2009				
Remarks & Observation:	Clear Sky, 24hr/8hr/1hr Sampling				
S No	Test Parameters	Units	Results	Standards (NAAQS)	Test Method
1.	Particulate Matter (PM _{2.5})	µg/m ³	27.92	60	Lab SOP EL-A1-PM2.5 Issue01 Dated 1.6.14 based on Manufacturer's Manual and CPCB Guidelines
2.	Particulate Matter (PM ₁₀)	µg/m ³	86.17	100	IS: 5182 (P-23) 2004
3.	Sulphur Dioxide (SO ₂)	µg/m ³	6.70	80	IS: 5182 (P-2) 2001
4.	Nitrogen Oxides (NO ₂)	µg/m ³	13.26	80	IS:5182 (P-6) 2006
5.	Carbon Monoxide (CO)	mg/m ³	BDL	04	Lab SOP EL-A2-CO Issue01 Dated 1.6.14 Electrochemical Method- Manufacturer's Manual (DL=1.5 mg/m ³)
6.	Mercury as Hg	ng/m ³	BDL	-	APHA 22 nd Ed. 2012 3/12 D (DL=10 ng/m ³)

Note: BDL = Below Detection Limit; DL= Detection Limit.


 Technical Manager III


 Technical Manager III



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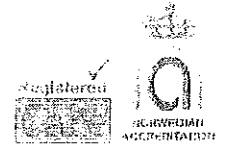


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TEST REPORT

EL-14-15/014	09/12/14	Lab No.	EL091214GA01	Page-1/2	
Customer:	Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab				
Type of Sample:	Stack Emissions				
Work Order No. & Date	P.O No. NPL/47000-00878 dated 01.03.14				
Mode of Collection of Sample:	Sampling by Laboratory				
Sampling Location:	Stack attached to Boiler(I)				
Date of Sampling:	09.12.14				
Sampling Protocol:	IS: 11255 (P-1) 1985 R-2003 and Customer's Requirements				
Sampling Team:	Laboratory Representative: Mr. Nitin & Team Customer Representative: Mr. Vikas Kashyap				
Date of Receipt of Sample:	09.12.14				
Date of Reporting:	12.12.14				
Remarks & Observation:	Data sheet providing sampling details is enclosed along.				
S.No	Test Parameter	Unit	Results	Limit	Test Method
1	Particulate Matter (PM) at 12% CO ₂	mg/Nm ³	21.34	800	IS: 11255 (P-1) 1985
2	Sulphur Dioxide (SO ₂)	mg/Nm ³	196.6	400	IS 11255 (P-2) 1985
3	Nitrogen Oxides (NOx)	mg/Nm ³	119.67	--	IS 11255 (P- 7) 2005
4	CO	%	7.8	--	IS:13270 -1992 Orsat
5	Mercury (as Hg)	mg/Nm ³	BDL	--	USEPA Method- 29 (DL=0.05 mg/Nm ³)

Note: BDL= Below Detection Limit; DL= Detection Limit.

Nitin
Technical Manager I/II

Vikas
Technical Manager I/II

Bui

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Data Sheet - Sampling Details

Lab No.: EL0912U4GAD1

Page-2/2

1.	Date of Sampling		09.12.14						
2.	Source								
	Type Boiler; Generator; Furnace	Identification /Make	Capacity		Fuel Used				
			Rated KVA; TPD; TPH; Kg/hr	On the Sampling Day	Type (LSD; HSD,FO; Coal; Wood; Rice Husk; Bagasse)	Quantity/Day			
2.1	Boiler (H)	2.2 MHI	2.3.1 2322 TPH	2.3.2 --	2.4.1 Coal	2.4.2 4827 metric tonne (Approx.)			
3.	Air Pollution Control Device APCD:								
3.1	An APCD is provided:					Provided			
3.2	Type of Device: (1) Settling Chamber; (2) Inertial/Impact Separators (3) Cyclone (4) Scrubbers (5) Filters (6) Electrostatic Precipitators					Electrostatic Precipitators			
3.3	Status of APCD at the time of Sampling: Tick					Operational			
4.	Stack								
	Identification Single Multiple- Common	Shape Circular/ Rectangular	Material Metal/ RCC/ Brick	Dimension in m /inch Diameter Rectangular L W		Sampling Port Hoist/ Platform	Height From GL. From Nearest Roof Top		
	Single	Circular	Metal	7.5 m	-	-	Ok	275m (Approx.)	--

Manoj
Technical Manager III/IV

[Signature]
Technical Manager I/II

[Signature]



TEST REPORT

PPCB Ref No. Lab/3233807
 Dated: 30.09.2014

EL-14-15/807	01/01/15	Lab No.	EL191214GA14	Page-1/2
Customer:	Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab			
Type of Sample:	Stack Emissions			
Work Order No. & Date	P.O No. NPL/47000-00878 dated 01.03.14			
Mode of Collection of Sample:	Sampling by Laboratory			
Sampling Location:	Stack attached to Boiler(II)			
Date of Sampling:	19.12.14			
Sampling Protocol:	IS: 11255 (P-1) 1985 R-2003 and Customer's Requirements			
Sampling Team:	Laboratory Representative: Mr. Udayveer & Team Customer Representative: Mr. Vikas Kashyap			
Date of Receipt of Sample:	19.12.14			
Date of Reporting:	27.12.14			
Remarks & Observation:	Data sheet providing sampling details is enclosed along.			
S.No	Test Parameter	Unit	Results	Test Method
1	Particulate Matter (PM) at 12% CO ₂	mg/Nm ³	17.26	IS: 11255 (P-1) 1985 R-2003
2	Sulphur Dioxide (SO ₂)	mg/Nm ³	220.12	Lab SOP EL-A6 -FG Issue01 Dated 1.6.14 based on Manufacturer Manual and USEPA ALT004 Method 3A and 6C
3	Nitrogen Oxides (NO _x)	mg/Nm ³	140.8	Lab SOP EL-A6 -FG Issue01 Dated 1.6.14 based on Manufacturer Manual and USEPA ALT004 Method 3A and 6C
4	CO	%	13.8	Lab SOP EL-A6-FG FOR Flue gas analyzer (Electrochemical method)
5	Mercury (as Hg)	mg/Nm ³	BDL	USEPA Method- 29 (DL=0.05 mg/Nm ³)

Note: BDL = Below Detection Limit; DL = Detection Limit.

Technical Manager III/IV

Technical Manager I/II

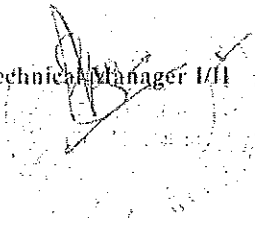
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Lab No. 201214/1/1

Date of sampling		19/12/14						
2. Source								
Exp. Boiler/Generator/Transformer	Identification/Make	Capacity		Fuel Used				
		Rated KVA, TPD; TPH; Kg/hr	On the Sampling Day	Type (LSD; HSD; FO; Coal; Wood; Rice Husk; Bagasse)	Quantity/ Hour			
2.1	2.2	2.3.1	2.3.2	2.4.1	2.4.2			
Boiler (II)	MHI	2322 TPH	--	Coal	4500 TPM (Approx)			
3. Air Pollution Control Device APCD:								
3.1	An APCD is provided:				Provided			
3.2	Type of Device: (1) Settling Chamber; (2) Inertial/Impact Separators (3) Cyclone (4) Scrubbers (5) Filters (6) Electrostatic Precipitators				Electrostatic Precipitators			
3.3	Status of APCD at the time of Sampling: Tick				Operational			
4. Stack								
Identification Single/ Multiple/ Common	Shape Circular/ Rectangular	Material Metal/ RCC/ Brick	Dimension in m/ inch			Sampling Port Hoke/ Platform	Height	
			Diameter	Rectangular L W			From GI.	From Nearest Roof Top
Single	Circular	Metal	7.5 m	--	--	Ok	275m (Approx.)	--


 Technical Manager III/IV


 Technical Manager I/II



Standards for Boiler Plant by CPCB

Steam Generation Capacity (tp) (tph)	Pollutant	Emission Limit (mg/Nm ³)
Less than 2	PM (particulate Matter)	1200 ^a
2 to less than 10	PM	800 ^a
10 to less than 15	PM	600 ^a
15 and above	PM	150 ^a

To meet the respective standard, cyclone/ multi-cyclone is recommended as control equipment with the boiler
 To meet the standard, bag filter (HSP) is recommended as control equipment with the boiler

Source EPA Notification (SRI) 6 (E) April 2, 1996

Stack Emission Standards for Boiler Plants By PPCB

Steam Generating Capacity (tph)	Required Particulate Matter	
	A Area upto 5 Km from the periphery of Class I and Class II Town mg/Nm ³	B Other Than "A" mg/Nm ³
Less than 2 ton/hr	800	1200
2 ton to 10 ton/hr	500	1000
Above 10 ton to 15 ton/hr	350	500
Above 15 ton/hr	150	150

All emission normalized to 12 % carbon dioxide

1. (b) Standards for Stack Height For Boiler Plants By PPCB

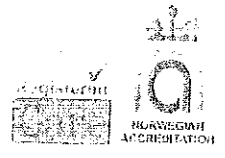
S.No	Steam Generating Capacity	Stack Height
1	More than 2 ton/hr	9 meters or 2.5 times the height of neighbouring building which ever is more.
2	More than 2 ton/hr to 5 ton/hr	12 meters
3	More than 5 ton/hr to 10 ton/hr	15 meters
4	More than 10 ton/hr to 15 ton/hr	18 meters
5	More than 15 ton/hr to 20 ton/hr	21 meters
6	More than 20 ton/hr to 25 ton/hr	24 meters
7	More than 25 ton/hr to 30 ton/hr	27 meters
8	More than 30 ton/hr	30 meters or using the formula $H=14(Q)^{0.3}$, where Q= SO ₂ Emission in Kg/hr

Source: Comprehensive guidelines on pollution clearance on industrial plants, June 1998/ Guidelines for entrepreneurs for compliance of environmental laws June 2005

B. Singh



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NPL 3101/12/ENV/17/14/17
 Dated: 30.09.2014

TEST REPORT

003139

Customer:	Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab
Type of Sample:	Ground Water
Work Order No. & Date:	P.O No. NPL/47000-00878 dated 01.03.14
Packing, Markings, Seal:	Plastic Bottle Marked 'GW-1'
Quantity:	2 litre
Mode of Collection of Sample:	Sampling by Laboratory
Sampling Location:	From Piezometer Well No. 1
Date of Sampling:	19.12.14
Sampling Protocol:	IS: 3025-(P-1)-1987-R-1998 Amdt-1
Sampling Team:	Lab Representative: Mr. Udayveer & Team Customer Representative: Mr. Vikas Kashyap
Date of Receipt of Sample:	19.12.14
Date of Reporting:	27.12.14
Testing Protocol:	IS: 10500-2012

S.No	Test Parameters	Units	Results	Requirements		Test Method
				Desirable Limits	In Absence of Alternate Source	
1.	Colour	--	< 15	Max 5	Max 15	APHA-22nd Ed 2012-2120 B Visual Comparison (Pt Cobalt) Method
2.	Total Dissolved solids	mg/l	650	Max 500	Max 2000	APHA-22nd Ed 2012- 2540C
3.	Solids (Suspended)	mg/l	36	--	--	APHA-22nd Ed 2012- 2540 D
4.	Mercury (as Hg)	mg/l	BDL	Max 0.001	No relaxation	APHA -22nd Ed 2012 3112B(DL=0.0009 mg/l)
5.	pH value	--	7.77	6.5 to 8.5	No relaxation	APHA-22nd Ed 2012 -4500 B
6.	Total Arsenic (as As)	mg/l	BDL	Max 0.01	Max 0.05	APHA-22nd Ed 2012-3114C Hydride Generation (DL=0.009 mg/l)
7.	Lead (as Pb)	mg/l	0.02	Max 0.01	No relaxation	APHA-22nd Ed 2012-3111C Ext A-Ac Flame AAS Method
8.	Total Chromium (as Cr)	mg/l	BDL	Max 0.05	No relaxation	APHA-22nd Ed 2012-3111B Ext A-Ac Flame AAS Method (DL=0.01 mg/l)

Note: BDL= Below Detection Limit; DL= Detection Limit.

[Signature]
 Technical Manager III/IV

[Signature]
 Technical Manager I/II

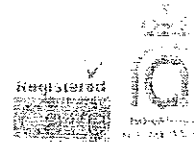
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TEST REPORT

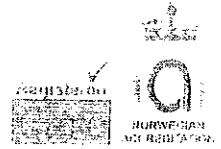
EL-14-15/2014		Lab No.		EL191214GW02		Page-1/1
Customer:	Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab					
Type of Sample:	Ground Water					
Work Order No. & Date:	P.O No. NPL/47000-00878 dated 01.03.14					
Packing, Markings, Seal:	Plastic Bottle Marked 'GW-2'					
Quantity:	2 litre					
Mode of Collection of Sample:	Sampling by Laboratory					
Sampling Location:	From Piezometer Well No. 2					
Date of Sampling:	19.12.14					
Sampling Protocol:	IS: 3025-(P-1)-1987-R-1998 Amdt-1					
Sampling Team:	Lab Representative: Mr. Udayveer & Team Customer Representative: Mr. Vikas Kashyap					
Date of Receipt of Sample:	19.12.14					
Date of Reporting:	27.12.14					
Testing Protocol:	IS: 10500-2012					
Remarks & Observation:	Turbid liquid with high suspended & settleable impurities & slight reddish tinge					
S.No	Test Parameters	Units	Results	Requirements		Test Method
				Desirable Limits	In Absence of Alternate Source	
1.	Colour	--	< 15	Max 5	Max 15	APHA-22nd Ed 2012-2120 B Visual Comparison (Pt Cobalt) Method
2.	Total Dissolved solids	mg/l	490	Max 500	Max 2000	APHA-22 nd Ed 2012- 2540C
3.	Solids (Suspended)	mg/l	38	--	--	APHA-22nd Ed 2012- 2540 D
4.	Mercury (as Hg)	mg/l	BDL	Max 0.001	No relaxation	APHA -22nd Ed 2012 3112B(DL=0.0009 mg/l)
5.	pH value	--	7.54	6.5 to 8.5	No relaxation	APHA-22 nd Ed 2012 -4500 B
6.	Total Arsenic (as As)	mg/l	BDL	Max 0.01	Max 0.05	APHA-22 nd Ed 2012-3114C Hydride Generation (DL=0.009 mg/l)
7.	Lead (as Pb)	mg/l	BDL	Max 0.01	No relaxation	APHA-22 nd Ed 2012-3111C Ext A-Ac Flame AAS Method (DL=0.009 mg/l)
8.	Total Chromium (as Cr)	mg/l	BDL	Max 0.05	No relaxation	APHA-22 nd Ed 2012-3111B Ext A-Ac Flame AAS Method (DL=0.01 mg/l)

Note: BDL = Below Detection Limit; DL = Detection Limit.

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TEST REPORT

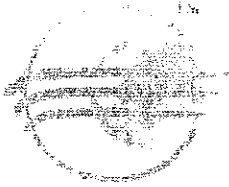
EL-14-15/2014	off-c/1401	Lab No.	EL191214GW03	Page-1/1		
Customer	Nabha Power Ltd. P.O Box No. 28, Near Vill. Nalash Distt. Patiala, Rajpura, Punjab					
Type of Sample:	Ground Water					
Work Order No. & Date:	P.O No. NPL/47000-00878 dated 01.03.14					
Packing, Markings, Seal:	Plastic Bottle Marked 'GW-3'					
Quantity:	2 litre					
Mode of Collection of Sample:	Sampling by Laboratory					
Sampling Location:	From Piezometer Well No. 3					
Date of Sampling:	19.12.14					
Sampling Protocol:	IS: 3025-(P-1)-1987-R-1998 Amdt-1					
Sampling Team:	Lab Representative: Mr. Uday Veer & Team Customer Representative: Mr. Vikas					
Date of Receipt of Sample:	19.12.14					
Date of Reporting:	27.12.14					
Testing Protocol:	IS: 10500:2012					
Remarks & Observation:	Turbid liquid with suspended & settleable impurities & slight reddish tinge.					
S.No	Test Parameters	Units	Results	Requirements		Test Method
				Desirable Limits	In Absence of Alternate Source	
1.	Colour	--	< 15	Max 5	Max 15	APHA-22nd Ed 2012-2120 B Visual Comparison (Pt Cobalt) Method
2.	Total Dissolved solids	mg/l	480	Max 500	Max 2000	APHA-22nd Ed 2012- 2540C
3.	Solids (Suspended)	mg/l	40	--	--	APHA-22nd Ed 2012- 2540 D
4.	Mercury (as Hg)	mg/l	BDL	Max 0.001	No relaxation	APHA -22nd Ed. 2012 3112B(DL=0.0009 mg/l)
5.	pH value	--	7.34	6.5 to 8.5	No relaxation	APHA-22nd Ed 2012 -4500 B
6.	Total Arsenic (as As)	mg/l	BDL	Max 0.01	Max 0.05	APHA-22nd Ed 2012-3114C Hydride Generation (DL=0.009 mg/l)
7.	Lead (as Pb)	mg/l	BDL	Max 0.01	No relaxation	APHA-22nd Ed 2012-3111C Ext A-Ac Flame AAS Method (DL=0.009 mg/l)
8.	Total Chromium (as Cr)	mg/l	BDL	Max 0.05	No relaxation	APHA-22nd Ed 2012-3111B Ext A-Ac Flame AAS Method (DL=0.01 mg/l)

Note: BDL= Below Detection Limit; DL= Detection Limit.

Technical Manager III/IV

Technical Manager I/II

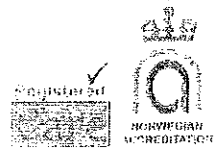
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Eco Laboratories & Consultants Pvt. Ltd.

Environment Due-diligence, Monitoring and Analysis Services

ISO-14001:2004 OHSAS-18001:2007 CIN: U74140PB2011PTC031739



Registered No: Lab/14837
01.03.2014

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TEST REPORT

EL-14-15/14837	Lab No.	EL191214GW01	Page-1/2			
Customer:	Nabha Power Ltd. P.O Box No. 28, Near Vill Malash Distt. Patiala, Rajpura, Punjab					
Type of Sample:	Ground Water					
Work Order No. & Date:	P.O No. NPL/47000-00878 dated 01.03.14					
Packing, Markings, Seal:	Plastic Bottle Marked 'GW-4'					
Quantity:	2 litre					
Mode of Collection of Sample:	Sampling by Laboratory					
Sampling Location:	From Piezometer Well No. 4					
Date of Sampling:	19.12.14					
Sampling Protocol:	IS: 3025-(P-1)-1987-R-1998 Amdt-1					
Sampling Team:	Lab Representative: Mr Uday Veer & Team Customer Representative: Mr. Vikas					
Date of Receipt of Sample:	19.12.14					
Date of Reporting:	27.12.14					
Testing Protocol:	IS: 10500-2012					
Remarks & Observation:	Slightly turbid liquid with suspended & settleable impurities.					
S.No	Test Parameters	Units	Results	Requirements		Test Method
				Desirable Limits	In Absence of Alternate Source	
1.	Colour	--	< 10	Max 5	Max 15	APHA-22nd Ed 2012-2120 B Visual Comparison (Pt Cobalt) Method
2.	Total Dissolved solids	mg/l	470	Max 500	Max 2000	APHA-22 nd Ed 2012- 2540C
3.	Solids (Suspended)	mg/l	35	--	--	APHA-22nd Ed 2012- 2540 D
4.	Mercury (as Hg)	mg/l	BDL	Max 0.001	No relaxation	APHA -22 nd Ed. 2012 3112B(DL=0.0009 mg/l)
5.	pH value	--	7.34	6.5 to 8.5	No relaxation	APHA-22 nd Ed 2012 -4500 B
6.	Total Arsenic (as As)	mg/l	BDL	Max 0.01	Max 0.05	APHA-22 nd Ed 2012-3114C Hydride Generation (DL=0.009 mg/l)
7.	Lead (as Pb)	mg/l	BDL	Max 0.01	No relaxation	APHA-22 nd Ed 2012-3111C Ext A-Ac Flame AAS Method (DL=0.009 mg/l)
8.	Total Chromium (as Cr)	mg/l	BDL	Max 0.05	No relaxation	APHA-22 nd Ed 2012-3111B Ext A-Ac Flame AAS Method (DL=0.01 mg/l)

Note: BDL= Below Detection Limit; DL= Detection Limit.

Technical Manager III/IV

Technical Manager III/IV

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