

COMPLIANCE REPORT

(MoEF & CC File No J11011/154/2016-IAII (I) dated 29/08/2017)

For the period

April 2019 – September 2019

Submitted

to

MoEF&CC, Regional Office (ECZ), Ranchi

Ammonia Urea Fertilizer Plant

(2200MTPD Ammonia & 3850MTPD Urea)

SINDRI

November 2019



हिन्दुस्तान उर्वरक एवं रसायन लिमिटेड
HINDUSTAN URVARAK & RASAYAN LTD.
(A joint Venture of NTPC, CIL, IOCL, FCIL & HFCL)



Hindustan Urvarak & Rasayan Limited

(A Joint Venture of NTPC, CIL, IOCL, FCIL & HFCL)
Office of The Project Head, Sindri Project, HURL
Old FCIL Office Complex, PO- Sindri,
Dhanbad Jharkhand-828122, Tel:-0326-2245454
GST Reg. No.: - 20AADCH9368N1Z6

Ref. No.: HURL/SND/19-20/1396

Date: 30/11/2019

Sri Rajeev Ranjan,
Scientist D
Ministry of Environment, Forest and Climate Change,
Regional Office (ECZ), Bungalow No. A-2, Shyamali Colony,
Ranchi – 834002.

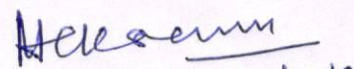
Subject: Ammonia (2200 MTPD) Urea (3850 MTPD) Fertilizer Project at Sindri in District Dhanbad, Jharkhand of M/s Hindustan Urvarak & Rasayan Limited (HURL)-Compliance Report for April 2019-September 2019.

Ref: (i) MoEF&CC, Environmental Clearance Letter No. J11011/154/2016-IAII (I) dated 29.08.2017.

Dear Sir,

With reference to the subject as mentioned above, please find attached herewith the compliance report for the period April 2019- September 2019.

Yours faithfully


(M C Karan) 30/11/2019

Additional General Manager & Unit Head
Hindustan Urvarak & Rasayan Ltd. (HURL)
Old FCIL Office Complex, Sindri
PO-Sindri, Dist.- Dhanbad-828122
Telephone – 0326-2245454

COMPLIANCE OF EC CONDITIONS FOR THE PERIOD April 2019 – September 2019

Sl. No.	COMPLIANCE CONDITIONS	Status
A	SPECIFIC CONDITIONS	
i)	Emissions-limits for the pollutants from the Diesel Generator Sets and the stack height shall be in conformity with the extant statutory regulations and/or the CPCB guidelines in this regard.	The uninterrupted electricity supplied by JBVNL in the old FCIL plant premises is being used for ongoing construction purpose in the proposed Ammonia- Urea Fertilizer Project at Sindri. The emission norms shall be met by using New Generation DG sets during operating phase of the plant.
ii)	To control source emissions, scrubber and/or other suitable pollution control device shall be installed to meet the prescribed Particulate Matter emission norms of 50 mg/Nm ³ , and also the NAAQS.	This has been addressed in the Feasibility Report of the Project and shall be complied with in the plant during operation.
iii)	Fresh water requirement shall not exceed 5.36 cum/ton of Urea production. Fresh water for plant operation shall be sourced from Damodar River only after the required permission from the concerned authority. During construction phase, ground water may be used after prior permission in this regard from the concerned regulatory authority.	The water supply through existing FCIL's pump house from Damodar River to project site is being used for the construction activities. At present, about 20KL/day water is required for dust suppression during site preparation activities. No ground water withdrawal is envisaged during construction phase. 6.6 MGD water allocation letter received from DVRRRC. Fresh water requirement shall not exceed 5.36 cum/ton of Urea production and the same have been included in the feasibility Report of the Project.
iv)	As already committed by the project proponent, no waste/treated water shall be discharged outside to ensure ZLD. The effluent discharge, if any, shall meet the standards for 'Nitrogenous Fertilizer Industry' prescribed under the Environment (Protection) Rules, 1986.	The Project is based on ZLD concept and there will be no discharge outside the project boundary.
v)	The project proponent shall develop Greenbelt in an area of 33% i.e. nearly 132 acres out of 400 acres of plant area of the project. The greenbelt of 30 m width around periphery shall be provided.	A budget to be allocated for development of green belt in 33% area around periphery is under active consideration of the management (It is included in the project cost, actual cost will be furnish after finalization of engineering details). The conditions for provision of Green Belt will be complied with and will be in place by the time of Commissioning of the Plant.

		Attached in Annexure-III.
vi)	5000 trees per year in 5 year shall be planted in nearby villages with the consultation of the villagers. Survival rate of plants shall be reported to RO, MoEF&CC in 6 monthly compliance reports.	Plantation of trees in nearby villages will be taken up as reiterated by undertaking of Project Proponent submitted with Compliance Report April 2018.
vii)	All the commitments made during Public Hearing/Public Consultation meeting held on 24 th April, 2017 shall be satisfactorily implemented and adequate budget provision should be made accordingly.	All the commitments made during Public Hearing/Public Consultation meeting held on 24 th April, 2017 shall be satisfactorily implemented and adequate budget provision will be made by the project proponent, it is included in the project cost, actual cost will be furnished after finalization of engineering details.
viii)	At least 2.5% of the total cost of the project shall be earmarked towards the Enterprise Social Commitment (ESC) based on local needs and action plan with financial and physical breakup/details shall be prepared and submitted to the Ministry's Regional Office at Ranchi. Implementation of such program shall be ensured accordingly in a time bound manner.	ESC programme will be carried out and adequate budget will be provided by the Project. Detail action plan along with budget will be provided once the plant becomes operational.
ix)	A regular environment manager having post graduate qualification in environmental sciences/environmental engineering to be appointed for looking after the environmental management activities of the proposed plant.	The EC conditions relating to establishment of Environmental Cell have been complied with the following arrangements for Environment Cell have been implemented: At the Project Level Nodal Environmental Officer: Mr. O. P. Kushwaha, Manager, Reporting to Project Head: Mr. M C Karan.
x)	Continuous online (24 X 7) monitoring system for emissions and effluent generation shall be installed for flow/discharge measurement and the pollutants concentration within the plant. Data shall be uploaded on company's website and provided to the respective RO of MoEF & CC, CPCB and SPCB.	This will be implemented during operation phase.
xi)	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material	This has been addressed in the Feasibility Report and RRA conducted for the Project and recommendation shall be complied with in the

	handling. Fire fighting system shall be as per the norms.	plant during operation.
xii)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	All the construction workers are ensured to be equipped with PPEs such as helmets, hand gloves, boots etc. before entering into construction site. Regular health check-up/monitoring of the construction labourers in being done by LSTK contractor and records are been maintained for the same. The same shall also be complied within the plant during operation phase.
xiii)	Storage of hazardous raw material shall not exceed more than 7 days.	The raw material required for construction activities are being stored in the designated place isolated from the construction area. The storage of raw materials has been addressed in the Feasibility Report and EIA report of the Project and shall be complied with in the plant during operation.
xiv)	Urea dust shall be controlled by prescribed standard technique.	This has been addressed in the Feasibility Report and EMP of the Project and shall be complied with in the plant during operation.
xv)	In Urea Plant, particulate emissions shall not exceed 50mg/Nm ³ . Monitoring of Prilling Tower shall be carried out as per CPCB guidelines.	This has been addressed in the Feasibility Report and EMP of the Project and shall be complied with in the plant during operation.
xvi)	The levels of PM10 (Urea dust), SO ₂ , NO _x , Ammonia, Ozone and HC shall be monitored in the ambient air and displayed at a convenient location near the main gate of the company and at important public places. The company shall upload the results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MoEF&CC, the respective Zonal office of MoEF&CC and SPCB.	Environmental Monitoring w.r.t. Air, Water and Noise during construction phase is being carried out by the CPCB recognised Laboratory in consultation with JSPCB since April 2018. (Six Monthly <i>Monitoring Report for the period April, 2019-September, 2019 is attached as Annexure- I</i>) The results will be uploaded on HURL's website and updated periodically. Simultaneously, it will also be sent to the Regional office of MoEF&CC, the respective Zonal office of MoEF&CC and JSPCB.
xvii)	In-plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive	This has been addressed in the Feasibility Report and EMP of the Project and shall be complied with in the plant during operation.

	emissions shall be controlled by providing closed storage, closed handling & conveyance of chemicals/materials, multi cyclone separator and water sprinkling system. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored. The emissions shall conform to the limits stipulated by the SPCB.	The water sprinkling is being done on regular basis for fugitive dust suppression in and around construction site. Air Quality is being monitored in work zone environment as per monitoring plan for assessment of pollution level during construction phase. The plan has been prepared in consultation with JSPCB and HURL officials.
xviii)	The company shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous Waste (Management, Handling and Trans-Boundary Movement) Rules, 2016 and amended as on date for management of Hazardous wastes. Measures shall be taken for fire-fighting facilities in case of emergency.	This has been addressed in the Feasibility Report and EMP of the Project and shall be complied with in the plant during operation.
xix)	Provision shall be made for the housing for the construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile-sewage treatment plant, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structure to be removed after the completion of the project. All the construction wastes shall be managed so that there is no impact on the surrounding environment.	M/s Technip is LSTK contractor responsible for this activity. M/s HURL has earmarked old buildings of HFCL in the neighbouring area for housing of labourers during construction phase. Medical healthcare at construction site is being provided through an ambulance and experienced Doctor & first aider in it. Sanitation facility at site comprised of toilets in the Old FCIL Buildings as well as mobile toilets. Drinking water requirement is being met through bottled water supplied by local vendors however; there is adequate supply of potable water by existing drinking water network of FCIL. Biodegradable construction wastes such as leaves/branches of trees/bushes at site cut during site preparation are being collected and dumped in area earmarked for construction of composting pits. Excavated soils have been collected in the form of heaps away from construction site to dispose suitably in the low lying area within FCIL premises.
B	GENERAL CONDITIONS	
i)	The Project authorities shall strictly	HURL shall strictly comply with the conditions

	adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.	laid by JSPCB, Jharkhand State Government and any other statutory authority during construction and operation phase of the plant.
ii)	No further expansion or modifications in the plant shall not be carried out without prior approval of the MoEF&CC. In case of deviations or alterations in the project proposal from those submitted to MoEF&CC for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	This condition will be complied with during project implementation phase.
iii)	The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as. Where maximum ground level concentrations are anticipated.	The locations of ambient air quality monitoring have been decided in consultation with the Jharkhand State Pollution Control Board (JSPCB) and HURL officials for monitoring of Air Quality during construction phase. 6 Nos. of AAQMS have been installed in the project area out of which two stations are selected in up-wind, South-East and two stations are selected in down-wind, North-West directions.
iv)	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated is November, 2009 shall be followed.	All efforts are being made to contain the fugitive dust emission within the standard limits at construction site. This will also be complied with during operation phase.
v)	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	All efforts are being made to contain the noise levels within the standard limits at construction site during day time i.e. single shift. All construction equipments deployed at site are ensured to have acoustic hoods and silencers/enclosures on sources of noise generation. The construction workers at site are equipped with ear muffs. This condition will also be complied with during operation phase of the plant.
vi)	The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.	This condition will be complied with as given in <i>Annexure II</i> .
vii)	Training shall be imparted to all	This condition will be complied with during

	employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	operation phase of the plant.
viii)	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing be implemented.	This condition will be complied with.
ix)	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.	Once the plant becomes operational CSR activities will be undertaken by involving local villages and administration as per rule and government guidelines.
x)	The company shall undertake all eco-developmental measures including community welfare measures for overall improvement of the environment.	Once the plant becomes operational CSR activities will be undertaken by involving local villages and administration as per rule and government guidelines.
xi)	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	This has been addressed in the Feasibility Report of the Project and shall be complied with in the plant during operation.
xii)	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management, pollution control measures shall not be diverted for any other purpose.	This has been addressed in the Feasibility Report of the Project and shall be complied with in the plant during operation.
xiii)	A copy of the clearance letter shall be sent by the project proponent to	The copy of Environment Clearance letter issued by MoEF&CC have been uploaded to

	concerned Panchayat, ZilaParisad / Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions, representations, if any, were received while processing the proposal.	company website hurl.net.in and also advertised in the local editions of English and Hindi dailies.
xiv)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by email) to the respective Regional Office of MoEF&CC, the respective Zonal Office of Environmental Clearance and six monthly compliance status reports shall be posted on the website of the company.	Environmental monitoring work has commenced from April 2018 by M/s PDIL and the results of monitoring data from April, 2019 to September, 2019 have been provided in the six monthly compliance report, November 2019 (<i>Annexure-I</i>)
xv)	The environmental statement for each financial year ending 31 st March in Form-Vas is mandated shall be submitted 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 MoEF&CC by email.	The Environment Statement will be submitted each financial year ending 31 st March in Form-V
xvi)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://moef.nic.in . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.	Environment Clearance granted by Ministry vide MoEF&CC letter no J11011/154/2016-IAII(I) DATED 29/08/2017 has already been updated on Company website hurl.net.in . The same was also advertised on 16/09/2017 on page 16 in Hindustan (Hindi) and page 13 in Hindustan Times (English) published from Ranchi, Jharkhand and submitted along with the Compliance Report April 2018.

xvii)	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Date of Financial Closure: 26.04.2018 Date of final approval of the project:14.06.2017 Date of Start of the project: 01.04.2018
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Heeran
30/11/2019

(M C Karan)

Additional General Manager & Project Head
Hindustan Urvarak&Rasayan Ltd. (HURL)
Old FCIL Office Complex, Sindri
PO-Sindri, Dist. - Dhanbad-828122
Telefax – 0326-2245454

This Compliance Report is the fulfillments of the condition of the Environmental Clearance (EC) vide File No. EC [IA/JH/IND2/54024/2016, J-11011/154/2016-IA II(I)] for the period of April 2019 to September 2019. This report has been prepared by Projects and Development India Limited (PDIL) by collecting respective samples in consultation with the State Pollution Control Board (SPCB) officials and Hindustan Urvarak and Rasayan Limited (HURL) officials. During the above mentioned period the analysis of the environmental parameters has been conducted by the CPCB accredited Laboratory at PDIL Sindri under the strict supervision of the Government Analyst namely Ms. Gyanlata Deshmukh and Mr. Akosh Chhoker.

The proposed project is located at Sindri with the capacity of 2200MTPD Ammonia and 3850MTPD Urea in the District Dhanbad in the state of Jharkhand. The area falls in the agricultural belt of the Jharkhand.

The compliance report fulfills the 19 Nos. of Specific Conditions and 17 Nos. of Standard Conditions led by Ministry of Environment, Forests and Climate Change. Rainwater Harvesting and Ground Water charging has been proposed as per Standard Guidelines:

Guidelines on Artificial Recharge of Water, Central Water Ground Board, Ministry of Water Resources, Gol (2000)

Manual on Artificial Recharge of Ground Water, Central Water Ground Board, Ministry of Water Resources, Gol (2007)

Rain Water Harvesting and Conservation: Manual, Consultancy Services Organization, CPWD, Gol (2002)

The green belt proposed by MoEF&CC is under review for selection of suitable plant species in consultation with local experts of the area.

The Environmental Monitoring report of 6 months w.r.t Air, Water and Noise have been presented separately with the average values. The environmental conditions and the compliance have been found normal as per the Standards. The Air Quality results have been presented through a self explanatory table with the NAAQ Standards w.r.t the parameter PM_{10} , $PM_{2.5}$, NO_x , SO_2 . No abnormal value has been recorded during the study period. Three sets each of Ground Water Samples and Surface Water Samples have been collected, analyzed in a self explanatory table and compared with Drinking Water Standards IS10500:2012. The analysis consists of five No. of physical parameters, thirteen No. of chemical parameters, nine No. of Heavy metals and three No. of miscellaneous parameters. No abnormal value has been recorded except for value of TDS & Hardness recorded beyond desirable limits at one location near old ammonia cooling tower of FCIL. Noise Quality has also been measured at six different locations in the periphery of the project area. The results have been presented through self explanatory table consisting of the Standard NAAQS w.r.t. noise.

The above report with respect to Air, Water and Noise represents the average values of different sampling stations collected at different time during the study period of April 2019 to September 2019.

गौनलता
22/11/19
ज्ञानलता देसमुख
विभागाध्यक्ष
प्रदूषण नियंत्रण
प्रोत्सेक एवं अंतर्राष्ट्रीय संशोधन लिमिटेड
(भारत सरकार का उपकरण)

compliance of EC conditions for the period April 2019 - September 2019 for Proposed Ammonia-Urea (2200MTPD & 3850 MTPD) plants of HURL at Sindri

ANNEXURE- I

HURL, SINDRI, AIR QUALITY DATA: APRIL 2019- SEPTEMBER 2019

MONTH	Parameters	Admn. Building HURL Gate (SA1)	Railway Phatak (inside the Plant) (SA2)	Domgarh Gate (inside the Plant) (SA3)	Settling Tank (SA4)	PDIL Guest House(SA5)	Sindri Basti Village(SA6)	NAAQ Standard
APRIL 2019	PM10	125	118.1	121.3	97.4	113.5	94.5	100
	PM 2.5	70.3	67.2	67.4	57.3	65.4	55.5	60
	SO2	19.7	17	20.1	16.6	17.8	15.4	80
	NOx	38.6	33.8	36.4	27.9	32.3	27	80
	CO	2.09	1.63	1.74	1.46	1.62	1.33	02
	NH3	BDL	BDL	BDL	BDL	BDL	BDL	400
	NMHC	3.46	2.98	4.01	2.73	2.75	2.36	-
	MHC	5.51	4.62	5.00	3.43	3.72	3.38	-
MAY 2019	VOC	5.66	5.22	5.44	4.62	4.64	4.38	-
	PM10	135	123.9	123	101.1	122	96.5	100
	PM 2.5	73.9	68.4	65.6	57.6	66.6	54.9	60
	SO2	20.4	19.4	21.2	16.2	22.7	18.4	80
	NOx	39.9	35.2	35.4	27.2	34.6	28.4	80
	CO	2.34	1.78	1.78	1.48	1.81	1.53	02
	NH3	BDL	BDL	BDL	BDL	BDL	BDL	400
	NMHC	3.53	3.52	4.41	2.74	2.85	2.38	-
JUNE 2019	MHC	5.64	4.76	5.26	3.49	3.98	3.71	-
	VOC	5.76	5.45	5.60	4.46	4.84	4.71	-
	PM10	110.4	107.5	116.6	101.8	116.4	97.0	100
	PM 2.5	62.8	60.3	62.8	57.0	61.0	55.5	60
	SO2	18.3	19.1	21.2	16.0	21.0	19.7	80
	NOx	32.6	35.6	34.5	25.7	30.8	28.1	80
	CO	2.33	1.71	1.63	1.46	1.55	1.37	02
	NH3	BDL	BDL	BDL	BDL	BDL	BDL	400
JULY 2019	NMHC	3.35	3.51	4.30	2.40	2.65	2.42	-
	MHC	5.51	4.56	5.25	3.22	3.51	3.33	-
	VOC	5.29	5.35	5.28	4.32	4.45	4.28	-
	PM10	112.3	110.4	114.3	101.1	111.2	96.4	100
	PM 2.5	55.1	62.1	61.0	58.4	60.5	56.5	60
	SO2	18.2	17.8	19.8	16.0	20.0	18.3	80
	NOx	27.5	32.5	32.7	22.3	30.2	26.8	80
	CO	1.26	2.03	1.99	1.29	1.48	1.44	02
AUGUST 2019	NH3	BDL	BDL	BDL	BDL	BDL	BDL	400
	NMHC	2.33	3.42	4.34	2.45	2.45	2.52	-
	MHC	3.32	4.34	5.35	3.18	3.41	3.29	-
	VOC	4.19	5.22	5.32	4.27	4.43	4.31	-
	PM10	108.9	114	116.9	94.0	108.5	91.9	100
	PM 2.5	60.3	63.6	63.6	55.8	60.5	53.3	60
	SO2	21.3	19.4	22.0	16.9	20.4	18.3	80
	NOx	33.9	32.5	35.0	25.0	30.5	26.7	80
AUGUST 2019	CO	2.51	2.39	2.50	1.68	1.56	1.35	02
	NH3	BDL	BDL	BDL	BDL	BDL	BDL	400
	NMHC	3.29	3.66	4.11	2.30	2.45	2.29	-
	MHC	5.26	4.69	5.37	3.35	3.37	3.41	-
AUGUST 2019	VOC	5.26	5.28	5.42	4.31	4.45	4.39	-

जागरूकता
 स्वास्थ्य सेवा
 विभाग
 स्वास्थ्य अधिकारी
 संजय लाल मेहता (विभागीय अधिकारी)
 भारत सरकार का उपकरण

compliance of EC conditions for the period April 2019 - September 2019 for
Proposed Ammonia-Urea (2200MTPD & 3850 MTPD) plants of HURL at Sindri

SEPTEMBER 2019	PM10	106.5	110.2	113.6	93.3	109.2	90.2	100
	PM 2.5	58.3	60.2	59.9	54.0	55.7	52.1	60
	SO2	20.1	18.2	19.0	15.2	18.8	16.7	80
	NOx	30.1	31.0	33.1	23.1	29.1	25.2	80
	CO	2.49	2.33	2.44	2.10	2.11	1.22	02
	NH3	BDL	BDL	BDL	BDL	BDL	BDL	400
	NMHC	3.33	3.69	4.13	2.42	2.55	2.20	-
	MHC	5.43	4.70	5.44	3.87	3.54	3.59	-
	VOC	5.22	5.38	5.49	4.50	4.54	4.76	-
AVG. APRIL 2019 TO SEPTEMBER 2019	PM10	116.4	114.0	117.6	98.1	113.5	94.4	100
	PM 2.5	63.5	63.6	63.4	56.7	61.6	54.6	60
	SO2	19.7	18.5	20.6	16.2	20.1	17.8	80
	NOx	33.8	33.4	34.5	25.2	31.3	27.0	80
	CO	2.17	1.98	2.01	1.58	1.69	1.37	02
	NH3	BDL	BDL	BDL	BDL	BDL	BDL	400
	NMHC	3.22	3.46	4.22	2.51	2.62	2.36	-
	MHC	5.11	4.61	5.28	3.42	3.59	3.45	-
	VOC	5.23	5.32	5.43	4.41	4.56	4.47	-

NOTE: BDL = Below Detection Limit,
(ppm) = NMHC, MHC,

($\mu\text{g}/\text{m}^3$) = PM₁₀, PM_{2.5}, SO₂, NO_x, NH₃,
(mg/m³) = CO, VOC

ज्ञान(धन)
कामलता देवमुख
 विमानतटग्रहण
 संचालन एवं निरीक्षण
 मोदीस्ट्रॉन्ग एण्ड कंपनी लिमिटेड
 (भारत सरकार का सहकर्म)

**HURL, SINDRI, GROUND WATER QUALITY DATA:
AVG. (APRIL 2019 TO SEPTEMBER 2019)**

(Results are expressed in mg/l, unless otherwise stated)

Sl. No	Parameters	Analysis Results			Requirement (Acceptable) / Permissible Limits (IS:10500:2012)
		Near Instrumentation Coke Oven & Amm. Storage (Hand Pump) (GW1)	Near Domgarh Mandir (Hand Pump) (GW2)	Rohraband (Hand Pump) (GW3)	
PHYSICAL					
1	pH	7.7	7.7	7.6	6.5-8.5
2	Temperature (°C)	27	29	28	-
3	Colour, HU	<9.6	<9.6	<9.6	5/15
4	Odour	Unobj.	Unobj.	Unobj.	Unobj.
5	Taste	Agreeable	Agreeable	Agreeable	Agreeable
6	Turbidity (NTU)	<9	<9	<9	1/5
7	Total Suspended Solid	NT	NT	NT	-
8	Total Dissolved Solids	892	760	507	500/2000
CHEMICAL					
1	P- Alkalinity as CaCO ₃	NIL	NIL	NIL	-
2	Total Alkalinity as CaCO ₃	505	266	266	200/600
3	Chloride as Cl	64	66	69	250/1000
4	Sulphate as SO ₄	54	55	50	200/400
5	Nitrate as NO ₃	6.0	6.0	5.9	45/NR
6	Fluoride as F	1.7	1.5	1.4	1.0/1.5
7	Total Hardness as CaCO ₃	684	448	387	200/600
8	Ca. Hardness as CaCO ₃	480	246	233	75/200
9	Mg. Hardness as CaCO ₃	204	196	155	30/100**
10	Sodium as Na	27	17	18	-
11	Potassium as K	16	19	18	-
12	Silica as SiO ₂	13	15	13	-
13	Iron as Fe	0.24	0.32	0.29	0.3/NR
HEAVY METALS					
1	Manganese as Mn	<0.06	<0.06	<0.06	0.1/0.3
2	Total Chromium as Cr	<0.02	<0.02	<0.02	0.05/NR
3	Lead as Pb	<0.01	<0.01	<0.01	0.01/NR
4	Zinc as Zn	0.66	0.56	0.51	5.0/15
5	Cadmium as Cd	<0.003	<0.003	<0.003	0.003/NR
6	Copper as Cu	<0.01	<0.01	<0.01	0.05/1.5
7	Nickel as Ni	<0.01	<0.01	<0.01	0.02/NR
8	Arsenic as As	<0.01	<0.01	<0.01	0.01/0.05
9	Selenium as Se	<0.01	<0.01	<0.01	0.01/NR
OTHERS					
1	Mineral oil,	<0.01	<0.01	<0.01	0.5/NR
2	Ph.Compound as C ₆ H ₅ OH	<0.001	<0.01	<0.01	0.001/0.002
3	Coliform (MPN/100ml)	<54	<54	<54	-

21/09/19
 ज्ञानलता देवामुख
 निगराजपुर
 पर्यावरण विभाग
 एन.एच. 14, सिंद्री, जिला
 सिंद्री, जिला

compliance of EC conditions for the period April 2019 - September 2019 for
Proposed Ammonia-Urea (2200MTPD & 3850 MTPD) plants of HURL at Sindri

HURL, SINDRI, SURFACE WATER QUALITY DATA-2019
AVG. (APRIL 2019 TO SEPTEMBER 2019)

(Results are expressed in mg/l, unless otherwise stated)

Sl. No.	Parameters	Nimtand Village (Pond) SW1	Seven Lake (Pond) SW2	Damodar River SW3	Requirement (Acceptable) / Permissible Limits (IS:10500:2012)
PHYSICAL					
1	Temperature (°C)	31	30	29	-
2	Colour, HU	26	27	25	5/15
3	Turbidity (NTU)	52	63	51	1/5
4	pH	7.9	7.8	6.9	6.5-8.5
5	Total Dissolved Solids	280	283	260	500/2000
6	Suspended Solids	51	53	55	-
CHEMICAL					
1	Total Alkalinity as CaCO ₃	134	136	120	200/600
2	Chloride as Cl	34	32	30	250/1000
3	Sulphate as SO ₄	28	29	31	200/400
4	Nitrate as NO ₃	6.4	6.6	7.1	45/NR
5	Fluoride as F	0.75	0.73	0.80	1.0/1.5
6	Total Hardness as CaCO ₃	251	241	241	200/600
7	Calcium Hardness as CaCO ₃	143	155	148	75/200
8	Magnesium Hardness as CaCO ₃	108	86	93	30/100
9	Dissolve Oxygen	7.1	7.3	7.4	-
10	COD	50	52	57	-
11	BOD _(3 days at 27° C)	11.5	12.5	13.2	-
12	Sodium as Na	25	29	28	-
13	Potassium as K	19	17	19	-
HEAVY METALS					
1	Iron as Fe	0.29	0.23	0.28	0.3/NR
2	Manganese as Mn	<0.06	<0.06	<0.06	0.1/0.3
3	Total Chromium as Cr	<0.01	<0.01	<0.01	0.05/NR
4	Lead as Pb	<0.01	<0.01	<0.01	0.01/NR
5	Zinc as Zn	0.27	0.26	0.24	5.0/15
6	Cadmium as Cd	<0.003	<0.003	<0.003	0.003/NR
7	Copper as Cu	<0.01	<0.01	<0.01	0.05/1.5
8	Nickel as Ni	<0.01	<0.01	<0.01	0.02/NR
9	Arsenic as As	<0.01	<0.01	<0.01	0.01/0.05
10	Selenium as Se	<0.01	<0.01	<0.01	0.01/NR
OTHERS					
1	Oil & grease	<0.01	<0.01	<0.01	0.5/NR
2	Phenolic Compound	<0.01	<0.01	<0.01	0.001/0.002
3	Coliform Organisms (MPN/100ml)	1278	1149	234	-

जागरूकता से सतर्क
सिमांकित
पर्यावरण प्रदूषण
नियंत्रण एवं संरक्षण विभाग
सिमांकित क्षेत्रों में सतर्कता

ANNEXURE- I

HURL, SINDRI, NOISE QUALITY DATA FROM APRIL 2019- SEPTEMBER 2019

RAINWATER HARVESTING

The rain water collected from the roof of the permanent buildings shall be harvested for ground water recharge as a compensation to meet the requirement due to loss of permeable area promoting ground water recharge, maintenance of existing hydro-dynamic pattern of the area and to conserve the salinity of ground water in the area. The excess rainwater shall be sent to the trap through storm water drain and attempts shall be made not to mix any process waste with the storm water. The trap shall have two compartments, one consisting of sized boulders and the other, sized hard coke. The excess water from sized hard coke shall be collected in another tank before discharge in to natural drainage system. The drainage system of project area shall be aligned as per the existing natural drainage pattern of the area.

Rain water harvesting and recharging system shall be installed as per the relevant the central ground water board guidelines applicable for the area. The rain water harvesting/aquifer recharging system have been proposed as water conservation measure. The systems shall be installed at such location of the project area close to the Administrative building so as to facilitate collection of most of the rain water from the roofs of the building in the project area. Similarly, same system of rain water harvesting shall be implemented in the township.

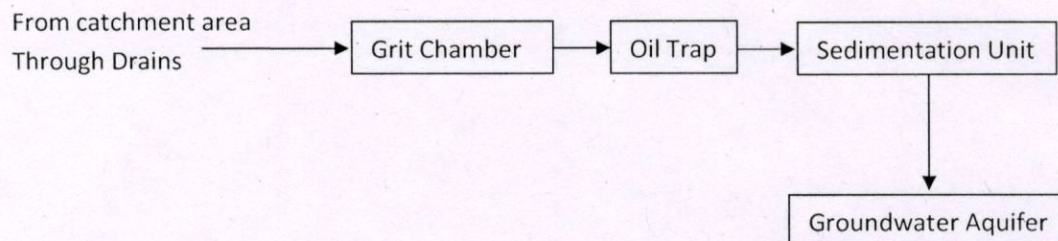
The bores shall be provided within 3 m deep enclosures, which will comprise layers of boulders, gravel and coarse sand so as to separate suspended matter from the rainwater. Three nos. of ground water recharging systems have been proposed to be developed in the township area and three nos. in the factory area. Rainwater harvesting system will consist of the following units:

1. Rainwater Collection System
2. Rainwater Filtration System
3. Rainwater Recharging Pond including an active well of depth 20m and dia 100-150mm.

The system will be cleaned during dry season and will be made ready to collect water for harvesting from its command area during monsoon. Provision shall also be made in the rainwater harvesting system for Chlorination/disinfection especially during the first phase of monsoon. The system shall be designed as per the guidelines for rainwater harvesting prepared by Central Ground Water Board (Ministry of Water Resources).

The scheme of rain water harvesting and aquifer recharging is presented below:

Block Diagram for Proposed Rain Water Harvesting / Aquifer Recharging System



The rainwater harvesting system for the fertilizer plant will follow the guidelines laid out by different Departments/Ministries as far as possible.

- a) Guidelines on Artificial Recharge of Water, Central Water Ground Board, Ministry of Water Resources, Gol (2000);
- b) Manual on Artificial Recharge of Ground Water, Central Water Ground Board, Ministry of Water Resources, Gol (2007);
- c) Rain Water Harvesting and Conservation: Manual, Consultancy Services Organization, CPWD, Gol (2002);

The sizing of the rain water collection drain and sub-units including the harvesting pond shall be calculated depending upon the maximum rain intensity within 50 years and roof area of the building after finalization of the building design.

GREEN BELT DEVELOPMENT & PLANTATION OF TREES

The project proponent shall develop greenbelt in an area of 33% i.e., nearly 132 acres out of 400 acres plant area of the project. The greenbelt of 30m width around periphery shall be provided (Plate A)

5000 trees per year in 5 year shall be planted in nearby village with the consultation of the villagers. Survival rate of plants shall be reported to RO, MoEF&CC in 6 monthly compliance reports.

Purpose

Trees and plants are an essential component of healthy environment. In addition to maintaining the oxygen-carbon dioxide balance in the atmosphere through photosynthesis, trees and plants control air and noise pollution, control soil erosion, provide food and shelter to domestic and wild animals including birds and insects, and improve the aesthetic value of the environment. The utility of the green belt predominantly lies in its capacity to attenuate the fugitive emission and spillage. Thus, the objectives of the proposed green belt program are as follows:

- a) To control air pollution due to fugitive emissions and spillage.
- b) To attenuate noise generated by various machines.
- c) To attenuate the effect of accidental release of toxic gases.
- d) To reduce the effect to fire and explosion.
- e) To improve the general appearance and aesthetics of the area.
- f) To provide food and habitat for wildlife.
- g) To control soil erosion.
- h) To obscure the proposed facilities from general view.

Areas to be afforested

Sindri Fertilizer plant shall be established in vacant land in the battery limit of FCI of 1194 acres of land. Green-belt development program shall be undertaken in 33% of the plant area including 30 m wide green belt around the battery limit of the plant. There exists a thick green belt around the existing abandoned fertilizer plant. The existing township is well planned with a proper forestation. While preparing the layout plan for locating the different facilities, extreme care has been exercised to preserve the existing plantation to the extent possible. Trees, lawns and gardens shall be developed within the premises to cover all the vacant areas. Extreme care shall be taken to utilize all available areas for forestation.

Scheme and Species for Green Belt

The general approach for selection of species for green belt development is their potential for attenuation of fugitive emissions and noise, diversity of vegetation, introduction of species attracting birds and animals, and to create a natural habitat. It is proposed to develop trees of different heights so as to provide cover from ground level up to the canopy of tall tree species. Further, trees with big foliage and those known to prosper well in the area will be developed. Preference will be given to fruit bearing trees so as to provide food and shelter to birds and insects.

The plan for development of green belt is as given below:

- a) The distance between two plants should not be less than 3.0 m so that a 30 m width green belt will have ten rows of plantations. Thus a 30 m width green belt will have a plant boundary of 1.0 km will have 3330 plants.
- b) A pit of 45 cm x 45 cm x 45 cm must be dug for plantation of saplings which are at least 6 months old.
- c) Saplings must be planted at the onset of monsoon.

Different species in the green belt suggested to have dense stratified 3 to 5 layer canopy so as to form a visible barrier and wind breaker

- a) On the outer ring of the green belt facing fugitive emissions from the open surface and roads close plantation of 2 to 3 rows of evergreen *Alstoniascholaris* intermixed with *FicusCunea* and Babul.
- b) Behind the outer layer, fast growing evergreen plants having good fugitive emission removing capacity like evergreen *MahualIndica* and *Derris Indica*, Sagwan, Gambhar and Putranjiya.
- c) Middle layer may be planted with Silver Oak which is tall, hardy and evergreen.
- d) In the next layer some typical hard and fast growing plants like *Leucaena*, *Acacia auriculiformis*, *Cassia fistula*, *C. Siamea*, *Inga ducis* may also be considered.
- e) In the inner periphery Bouganvella may be planted as it has high capacity for absorbing toxic gases.
- f) Some plants having good timber value like *Dalbergia sissoo*, *Albizialebbek*, *Azadiracta indica*, *Tectona grandis* along with fruit trees like Ber, Guava, Jamun, Jack fruit and Bel may also be planted to attract birds.
- g) For fencing purpose plants from *Asclepiadaceae* and *Apocynaceae* families like *AlstoniaCalotropis* which are resistant to grazing may be considered.
- h) The entire green belt may be interspersed with climbers.

Efforts would be made by M/s HURL in collaboration with State Forest Department to explore mutual areas of interest in the area of identifying trees/plants to maintain/enhance the current biodiversity index.

Government of India
Ministry of Environment, Forests and Climate Change (MoEF&CC)
Regional Office – Ranchi

MONITORING REPORT

PART I

DATA SHEET

File No

1		Project Type	Fertilizer
2		Name of the project	Ammonia-Urea Fertilizer Project Hindustan Urvarak & Rasayan Limited, Sindri
3		Clearance letters/Om No. and dated	J11011/154/30166-IAII (I)
4		Locations	Sindri
	a	Taluk(S) District	Jharia Dhanbad
	b	State(S)	Jharkhand
	c	Latitudes/Longitudes	Location Longitude Latitude Elevation (m) NE Boundary 86°29'37.8"E 23°40'17.44"N 164.90 Northern Boundary 86°29'17.30"E 23°39'48.73"N 165.20 m NW Boundary 86°29'2.84"E 23°39'45.45"N 165.20 m Centre of FCIL Plant 86°29'25.52"E 23°39'22.45"N 155.45 m Eastern Boundary 86°29'0.78"E 23°39'22.08"N 160.02 m Western Boundary 86°29'0.78"E 23°39'47.34"N 161.54 m Southern Boundary 86°29'38.05"E 23°38'59.17"N 153.01 m <i>Source: GPS</i>
5		Address for correspondence	
	a	Address of concerned Project Chief Engineer (with Pin Code & Telephone/Telex/fax nos)	The Addl. General Manager Hindustan Urvarak & Rasayan Limited (HURL) Old FCIL Office Complex, Sindri PO-Sindri, Dist.-Dhanbad – 828122 Telephone – 0326-2245454
	b	Address of Executive Project Engineer (with Pin Code/fax numbers)	The Manager (P&S) Hindustan Urvarak & Rasayan Limited (HURL) Old FCIL Office Complex, Sindri PO-Sindri, Dist.-Dhanbad – 828122 Telephone – 0326-2245454

6	Salient Features	
	a Salient features of the project	<p>The Ammonia and Urea plants shall be one of the latest mega capacity plants (2200 MTPD for Ammonia and 3850 MTPD for Urea). The technology suppliers shall consider the latest technological features with an objective to have lowest energy consumption & high reliability of plant having state of the art technology with latest technological features. Ammonia and Urea plants planned shutdown shall be once in two years. One blast proof central control room for location of control & monitoring of operation of all Ammonia/Urea/Offsite & utility plants shall be provided by LSTK Contractor.</p> <p>The ETP facility shall treat all effluents, continuous, intermittent or emergency discharges from ammonia/urea plants. All liquid treated effluent from various sections of the plants shall be collected in final effluent pond made of RCC. The treated effluent shall be pre-treated with chemicals to make it suitable for feeding to RO plant. The RO plant shall be two stage RO systems. The treated water from RO shall be recycled back to filtered water tank in WTP. The final reject waste water from RO units shall be further treated in thermal evaporation unit using low pressure steam to achieve zero liquid discharge from ETP plant.</p> <p>All Liquid & gaseous effluents generated from various plants & facilities shall be treated before final discharge to meet the requirements of Central/State pollution control board.</p>
	b Of the environmental management plans.	<p>An Environmental Management Plan (EMP) has been prepared keeping in view all possible strategies oriented towards the impact minimization. The EMP for the proposed project is divided into three phases i.e. Planning, Construction and Operational phase.</p> <p>During the planning stage, Energy efficient machines with 5 star rating shall be utilised along with LED street lights and use of solar energy. Ultra low NOx burners shall be integrated into the system to reduce NOx</p>

			<p>emissions. All piping and instrumentation diagrams and plant layout shall be reviewed as a part of HAZOP/HAZAN studies to assess the risks involved. Noise suppression measures such as enclosures and buffers will be used to limit noise levels in areas frequented by personnel to below 85 dB(A).</p> <p>The overall impact of the pollution on the environment during construction phase is localised in nature and is for a short period at all sites. In order to develop effective mitigation plan, all the construction activities shall be undertaken, controlled and managed by LST/Non-LSTK contractor under the guidance of PMC. It is mandatory for these contractors to develop site/project specific HSE Policy, HSE Plan, HSE management system.</p> <p>The environmental management plan during the operational phase of the plant shall be directed towards the following:</p> <ul style="list-style-type: none"> • Ensuring the operation of various process units as per specified operating guidelines/operating manuals. • Strict adherence to maintenance schedule for various machinery/equipment. • Good Housekeeping practices. • Post project environmental monitoring.
7		Breakup of the project area	
	a	Project area	400 acres
8		Breakup of project affected population with enumeration of those losing house/dwelling units only, agriculture land only, both dwelling units and agriculture land and landless labours/artisans	No Project Affected Persons are involved as there is no displacement of population. The project is coming up in old plant complex of FCIL, Sindri.
	a	SC, ST/Adivasis	NA
	b	Others	NA
9		Financial Details	
	a	Project cost as originally planned and subsequent revised estimates	Rs. 6317 crore (Feb' 2017)

		and the years of price reference		
	b	Allocation made for environmental management plans with item wise and year wise breakup	Rs. 119.00 crore	
	c	Benefit cost ratio/internal rate of return and the years of assessment	Debt Service Coverage Ratio*	1.68
			Internal rate of Return*	11.85
			*As per Project Feasibility Report	
	d	Whether © includes the cost of environmental management as shown in (b) above	Yes	
	e	Total expenditure on the Project so far	Rs. 449.00 crore	
	f	Actual expenditure incurred on the environmental management plans so far	Rs. 90 lakh	
10		Forest land requirement	No Forest Land is involved	
	a	The status of approval for a diversion of forest land for non-forestry use	NA	
	b	The status of compensatory afforestation, if any	NA	
	c	The status of clear felling	NA	
	d	Comments on the viability and sustainability of compensatory afforestation in the light of actual field experience so far	NA	
11		The status of clear felling in no-forest area (such as submergence area of reservoir, approach road) if any with quantitative information	NA	
12		Status of Construction	Construction work is in progress by Land Development Agency ' M/s Dee Vee Projects Ltd., Project construction by LSTK agency M/s Technip FMC with consortium LTHE, other offsite work is being carried out by M/s Sanjay Kumar, M/s MISPL, M/s WAPCOS, M/s NICE,'	
	a	Date of commencement	1 st April 2018	
	b	Date of completion (actual and / or planned)	36 months from 1 st April 2018	

13		Reasons for the delay if the project is yet to start	NA
14		Date of site visit	
	a	The dates on which the project was monitored by the Regional Office on previous occasions, if any	Not inspected by RO, MoEF&CC
	b	Date of site visit for this monitoring report	PDIL's environmental monitoring team visits the monitoring locations as per schedule of monitoring and construction site is regularly visited by designated Nodal Officer.

H. C. Karan
30/11/2019

(M C Karan)

Additional General Manager & Project Head
Hindustan Urvarak&Rasayan Ltd. (HURL)
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