

Central Coalfields Limited
Office of the General Manager
P.O.- Dhori Distt – Bokaro.

Ref. No.-GM (D)/ PS/ Env. Statements/2020-21/ 130

Dated: - 30.09.2021

To,
Member Secretary, JSPCB,
HEC, Dhurwa, Ranchi.

Sub: Submission of Environment Statement / Audit Reports - 2020-21.

Dear Sir,

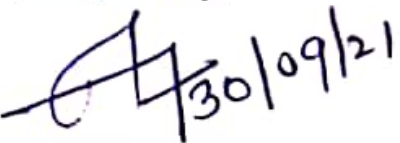
We are enclosing herewith the Environment Statement / Audit Reports for the financial year 2020-21 in respect of following projects of Dhori Area duly signed by respective Project Officers for your kind perusal.

During 2020-21, Dhori OCP production was suspended due to non availability of Land.

- ✓ 1. Amlo OCP
2. Tarmi OCP
3. Selected Dhori Group of Mines (SDGOM)
4. Dhori (Khas) UGP
5. Dhori OCP
6. Tarmi Siding

Encl: As above.

Yours faithfully,


General Manager
Dhori Area.
Ranvir **General Manager**
C.C.L., Dhori Area

Copy to:

1. Regional officer, JSPCB, HIG-1, Housing colony, Dhanbad.
2. Staff Officer (Env), Dhori Area
3. Project Officers- Amlo / Dhori (E)/ Tarmi / Selected Dhori Group of mines (SDGOM) / Dhori (K) UG/Tarmi Siding.

ENVIRONMENT STATEMENT/AUDIT
REPORT

AMLO OPEN CAST PROJECT
CENTRAL COAFILEDS LIMITED
DHORI AREA

FOR
2020-21

SUBMITTED TO
JHARKHAND POLLUTION CONTROL
BOARD

FORM – V (See rule 14)
Environmental Statement for the financial year ending the 31st March 2021.

PART- A.

I	Name and address of the Project.	Amlo Opencast Project., PO: Dhori, Dist: Bokaro State: Jharkhand
ii.	Industry category primary – (STC- Code)	Primary
iii	Production capacity	3.00 MTPA (as per Approved EC) J-11015/35/2007-IA.II(M) DT. 30-09-2010. Production (2020-2021) =1.2MTe
iv	Date of last environment statement submitted.	30/09/2020 (2019-20).

PART- B.

Water and Raw material composition:

Water Consumption (Avg)	
1. Mining	300 cum/Day
2 Domestic	400 cum/day
Total	700 cum/day

2. Raw material consumption:

Name of Raw material	Name of product	Consumption of Raw materials per unit of product output	
		During the previous financial year (2019-20)	During the current Financial year (2020-21)
Explosive (Kg/Te)	COAL and OB	0.189	0.104
Diesel (Lit/Te)		1.15	1.873
Lubricant (Lit/Te)		0.05	0.19

PART- C

**Pollution discharged to Environment / unit of output
(Parameters as specified in the consent issued)**

Pollution	Quantity of pollutants discharged (Cum/day)	Percentage of variation from prescribed standards with reason.
a) Water	110 (Workshop and domestic discharge)	The quality of water is meeting the prescribed standard.
b) Air (SPM, SOx, NOx are main pollutant)	The quantity of air pollutants from mine is difficult to measure. However, concentrations of air	The results of SPM/RPM/SOx & NOx generated are well within the prescribed standard.

	pollutants are measurable and are given in annexure.	
c) Noise	Recorded Noise levels are attached as annexure.	Noise level in around project is under prescribed standard.

PART- D.

Hazardous Waste (As specified under Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016)

Hazardous waste	Total quantity	
	During Previous financial year (2019-2020)	During current financial year (2020-2021)
A) From Mining process	Nil	Nil
B) From Pollution control facilities	Nil	Nil
B) From material handling system	Used oil :35.13 KL Battery returned:53 Nos.	Used Oil: 47.95 KL Battery returned: 42 Nos.

PART – E

SOLID WASTE:

Solid Waste	Total Quantity (M. cum)	
	During the previous financial year (2019-20)	During the current Financial year (2020-21)
a) From process (OB) (Mining)	1.24	2.26
b) From pollution control facilities	Nil	Nil

PART – F

Please specify the Characteristics in terms of concentration and quantity of Hazardous as well as solid waste and indicate, disposal practice adopted for both these categories of wastes.

- **1. HAZARDOUS WASTES :**

- Hazardous wastes are not being produced either from mining operation or from any pollution control facilities. Used oil such as mobile & lubricant are used for the lubrication of HEMM etc.

- **2. SOLID WASTES :**

- During opencast mining over burden produced as solid wastes temporarily as these materials are used for land reclamation. During the year 2019-20, is 1.24 Million cubic meter of overburden was generated. The overburden material is more or less homogeneous comprising mainly shale, sand, silt, clay and gravels.

- **3. DISPOSAL PRACTICE :**

- Presently, the OB material is being filled in de coaled area of quarry. The external O.B dump of previous year is used in back filling and reclamation of land.

PART- G

Impact of pollution control measures on conservation of natural resources and consequently on cost of production.

Following pollution control measures have been adopted by the mine management:

- 1) **Air [Pollution Control Measures:**

- ✓ Regular water sprinkling of water on haul roads and other roads.
- ✓ Dust suppression at all transfer points
- ✓ Vegetation of OB dumps
- ✓ Regular monitoring of all environment parameters.

- 2) **Water Pollution control measures:**

- ✓ The mine water collected in the lagoons acts as sedimentation pond where all suspended particles are settled. The clear water is used for spraying / industrial purpose. The excess water overflows to nallah.
- ✓ Work shop ETP is in operation.
- ✓ Regular monitoring is done to check the parameters.

- 3) **Noise pollution control measures.**

- ✓ All HEMM provided with noise /sound proof cabins.
- ✓ Ear muffs/plugs are provided to workers.

PART- H

Additional investment proposal for Environmental protection including abatement of pollution.

The following are the additional investment proposal for Environmental protection

1. All residential quarters constructed for the project has been provided with septic latrines and effluents are disposed off in soak pits.
2. The Environmental Monitoring of the project will be continued quarterly as per guidelines of MOEF
3. Environmental statement report will be prepared for each financial year ending 31st March.

PART-I

Any other particulars in respect of environment protection and abatement of pollution.

- The Environmental monitoring is carried out quarterly for the project by CMPDI as per the guidelines of the Ministry of Environment & Forest (MOEF).
- The Environmental Statement for the project is prepared every year.
- Ambient air quality, quality of effluent discharged from the mine and noise level all conform to the prescribed limits.
- To control fugitive dust on haul road arrangement of water sprinkling on the haul road has been made.

@@@@@

AW 30.09/2
Project Officer
Amlo OCP
Project Officer
Amlo Project

Photographs of AMLO Project





AMLO OCP plantation on OB dump in 2007



AMLO OCP plantation on OB dump in 2009



AMLO O.B.D PLANTN-2007



AMLO OCP







28 KL MIST SPRINKLER AT AMLO OCP

ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI

TEST REPORT

06/20 Test Report no. 1621	Job No. 0943120075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Jun-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** P.O Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Apr-20 1st FN	08/04/20-09/04/20	16-04-2020	16/04/20-20/04/20	209	130	74	< 25	< 6	West Sunny
Apr-20 2nd FN	16/04/20-17/04/20	04-05-2020	04/05/20-06/05/20	152	83	36	< 25	< 6	West Sunny
May-20 3rd FN	05/05/20-06/05/20	18-05-2020	18/05/20-20/05/20	251	142	67	< 25	< 6	East Sunny
May-20 4th FN	19/05/20-20/05/20	01-06-2020	01/06/20-03/06/20	191	119	42	< 25	< 6	East Sunny
Jun-20 5th FN	02/06/20-03/06/20	16-06-2020	16/06/20-18/06/20	220	126	57	< 25	< 6	East Sunny
Jun-20 6th FN	17/06/20-18/06/20	01-07-2020	01/07/20-03/07/20	159	79	38	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

Analysed By

Checked By

Authorized Signatory

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ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI

TEST REPORT

06/20 Test Report no. 1622	Job No. 0943120075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Jun-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Apr-20 1st FN	08/04/20-09/04/20	16-04-2020	16/04/20-20/04/20	216	110	66	< 25	< 6	West Sunny
Apr-20 2nd FN	16/04/20-17/04/20	04-05-2020	04/05/20-06/05/20	179	96	53	< 25	< 6	West Sunny
May-20 3rd FN	05/05/20-06/05/20	18-05-2020	18/05/20-20/05/20	227	132	86	< 25	< 6	East Sunny
May-20 4th FN	19/05/20-20/05/20	01-06-2020	01/06/20-03/06/20	161	88	56	< 25	< 6	East Sunny
Jun-20 5th FN	02/06/20-03/06/20	16-06-2020	16/06/20-18/06/20	220	95	43	< 25	< 6	East Sunny
Jun-20 6th FN	17/06/20-18/06/20	01-07-2020	01/07/20-03/07/20	116	67	27	< 25	< 6	East Sunny

Note:

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TEST REPORT

06/20 Test Report no. 1623	Job No. 0943120075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Jun-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** Chapri Guest House

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Apr-20 1st FN	08/04/20-09/04/20	16-04-2020	16/04/20-20/04/20	149	65	23	< 25	< 6	West Sunny
Apr-20 2nd FN	16/01/20-17/01/20	04-05-2020	04/05/20-06/05/20	327	116	67	< 25	< 6	West Sunny
May-20 3rd FN	05/05/20-06/05/20	18-05-2020	18/05/20-20/05/20	192	77	38	< 25	< 6	East Sunny
May-20 4th FN	19/05/20-20/05/20	01-06-2020	01/06/20-03/06/20	200	95	69	< 25	< 6	East Sunny
Jun-20 5th FN	02/06/20-03/06/20	16-06-2020	16/06/20-18/06/20	163	80	38	< 25	< 6	East Sunny
Jun-20 6th FN	17/06/20-18/06/20	01-07-2020	01/07/20-03/07/20	113	65	29	< 25	< 6	East Sunny

Note:

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TEST REPORT

06/20 Test Report no. 1624	Job No. 0943120075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Jun-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** Amlo Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Apr-20 1st FN	09/04/20-10/04/20	16-04-2020	16/04/20-20/04/20	177	71	37	< 25	< 6	West Sunny
Apr-20 2nd FN	17/04/20-18/04/20	04-05-2020	04/05/20-06/05/20	362	127	70	< 25	< 6	West Sunny
May-20 3rd FN	06/05/20-07/05/20	18-05-2020	18/05/20-20/05/20	164	84	50	< 25	< 6	East Sunny
May-20 4th FN	20/05/20-21/05/20	01-06-2020	01/06/20-03/06/20	139	72	40	< 25	< 6	East Sunny
Jun-20 5th FN	03/06/20-04/06/20	16-06-2020	16/06/20-18/06/20	131	75	37	< 25	< 6	East Sunny
Jun-20 6th FN	18/06/20-19/06/20	01-07-2020	01/07/20-03/07/20	146	81	33	< 25	< 6	East Sunny

Note:

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TEST REPORT

06/20 Test Report no. 1626	Job No. 0943120075	Year	FY2020-21
Type of Sample:	Effluent Water	Quarter Ending	Jun-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area: Dhori Project: Amlo Stations: Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Apr-20 1st FN	10/04/20	16/04/20	16/04/20-04/05/20	20	<2.00	7.87	24
Apr-20 2nd FN	20/04/20	04/05/20	04/05/20-20/05/20	36	<2.00	7.86	40
May-20 3rd FN	07/05/20	18/05/20	18/05/20-31/05/20	20	<2.00	8.12	24
May-20 4th FN	22/05/20	01/06/20	01/06/20-18/06/20	24	<2.00	8.05	28
Jun-20 5th FN	05/06/20	16/06/20	16/06/20-02/07/20	20	<2.00	7.94	28
Jun-20 6th FN	20/06/20	01/07/20	01/07/20-16/07/20	24	<2.00	8.07	32
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric

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TEST REPORT

09/20 Test Report no. 1621	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Sep-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** P.O Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM2.5)	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jul-20 1st FN	02/07/20-03/07/20	20-07-2020	20/07/20-22/07/20	211	92	50	< 25	< 6	West Sunny
Jul-20 2nd FN	21/07/20-22/07/20	03-08-2020	03/08/20-04/08/20	192	112	67	< 25	< 6	West Sunny
Aug-20 3rd FN	03/08/20-04/08/20	17-08-2020	17/08/20-19/08/20	152	98	41	< 25	< 6	East Rain
Aug-20 4th FN	17/08/20-18/08/20	01-09-2020	01/09/20-03/09/20	139	73	32	< 25	< 6	East Sunny
Sep-20 5th FN	01/09/20-02/09/20	16-09-2020	16/09/20-18/09/20	127	70	37	< 25	< 6	East Rain
Sep-20 6th FN	17/09/20-18/09/20	01-10-2020	01/10/20-05/10/20	171	93	46	< 25	< 6	East Rain

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

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TEST REPORT

09/20 Test Report no. 1622	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Sep-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jul-20 1st FN	02/07/20-03/07/20	20-07-2020	20/07/20-22/07/20	237	145	74	< 25	< 6	West Sunny
Jul-20 2nd FN	21/07/20-22/07/20	03-08-2020	03/08/20-04/08/20	182	104	59	< 25	< 6	West Sunny
Aug-20 3rd FN	03/08/20-04/08/20	17-08-2020	17/08/20-19/08/20	131	78	37	< 25	< 6	East Rain
Aug-20 4th FN	17/08/20-18/08/20	01-09-2020	01/09/20-03/09/20	175	90	42	< 25	< 6	East Sunny
Sep-20 5th FN	01/09/20-02/09/20	16-09-2020	16/09/20-18/09/20	194	104	46	< 25	< 6	East Rain
Sep-20 6th FN	17/09/20-18/09/20	01-10-2020	01/10/20-05/07/20	213	129	66	< 25	< 6	East Rain

Note:

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TEST REPORT

09/20 Test Report no. 1623	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Sep-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** Chapri Guest House

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jul-20 1st FN	03/07/20-04/07/20	20-07-2020	20/07/20-22/07/20	169	91	43	< 25	< 6	West Sunny
Jul-20 2nd FN	21/07/20-22/07/20	03-08-2020	03/08/20-04/08/20	158	74	34	< 25	< 6	West Sunny
Aug-20 3rd FN	03/08/20-04/08/20	17-08-2020	17/08/20-19/08/20	96	70	29	< 25	< 6	East Rain
Aug-20 4th FN	17/08/20-18/08/20	01-09-2020	01/09/20-03/09/20	127	65	28	< 25	< 6	East Sunny
Sep-20 5th FN	01/09/20-02/09/20	16-09-2020	16/09/20-18/09/20	144	75	35	< 25	< 6	East Rain
Sep-20 6th FN	18/09/20-19/09/20	01-10-2020	01/10/20-05/07/20	112	65	29	< 25	< 6	East Rain

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
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ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI

TEST REPORT

09/20 Test Report no. 1624	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Sep-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori

Project: Amlo

Stations: Amlo Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jul-20 1st FN	03/07/20-04/07/20	20-07-2020	20/07/20-22/07/20	144	69	37	< 25	< 6	West Sunny
Jul-20 2nd FN	22/07/20-23/07/20	03-08-2020	03/08/20-04/08/20	173	85	52	< 25	< 6	West Sunny
Aug-20 3rd FN	04/08/20-05/08/20	17-08-2020	17/08/20-19/08/20	118	73	36	< 25	< 6	East Rain
Aug-20 4th FN	18/08/20-19/08/20	01-09-2020	01/09/20-03/09/20	178	89	43	< 25	< 6	East Sunny
Sep-20 5th FN	02/09/20-03/09/20	16-09-2020	16/09/20-18/09/20	199	96	55	< 25	< 6	East Rain
Sep-20 6th FN	18/09/20-19/09/20	01-10-2020	01/10/20-05/07/20	158	83	44	< 25	< 6	East Rain

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

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ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI

TEST REPORT

09/20 Test Report no. 1626	Job No. 094320075	Year	FY2020-21
Type of Sample:	Effluent Water	Quarter Ending	Sep-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area: Dhori Project: Amlo Stations: Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	1	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jul-20 1st FN	09/07/20	20/07/20	20/07/20-04/08/20	28	<2.00	8.23	32
Jul-20 2nd FN	24/07/20	03/08/20	03/08/20-19/08/20	32	<2.00	7.72	42
Aug-20 3rd FN	07/08/20	17/08/20	17/08/20-29/08/20	28	<2.00	7.93	34
Aug-20 4th FN	19/08/20	01/09/20	01/09/20-16/09/20	32	<2.00	7.82	35
Sep-20 5th FN	04/09/20	16/09/20	16/09/20-30/09/20	28	<2.00	7.78	36
Sep-20 6th FN	21/09/20	01/10/20	01/10/20-12/10/20	16	<2.00	7.44	20
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/20 Test Report no. 1624	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Dec-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** P.O Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Oct-20 1st FN	01/10/20-02/10/20	16-10-2020	16/10/20-19/10/20	157	77	34	< 25	< 6	East Rain
Oct-20 2nd FN	17/10/20-18/10/20	02-11-2020	02/11/20-05/11/20	208	92	54	< 25	< 6	West Sunny
Nov-20 3rd FN	02/11/20-03/11/20	17-11-2020	17/11/20-19/11/20	163	82	48	< 25	< 6	West Sunny
Nov-20 4th FN	17/11/20-18/11/20	01-12-2020	01/12/20-03/12/20	175	84	55	< 25	< 6	West Cloud
Dec-20 5th FN	01/12/20-02/12/20	16-12-2020	16/12/20-19/12/20	129	62	27	< 25	< 6	West Sunny
Dec-20 6th FN	17/12/21-18/12/21	01-01-2021	01/01/21-05/01/21	149	74	41	< 25	< 6	West Sunny

Note:

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ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI

TEST REPORT

12/20 Test Report no. 1625	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Dec-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Oct-20 1st FN	01/10/20-02/10/20	16-10-2020	16/10/20-19/10/20	112	61	23	< 25	< 6	East Rain
Oct-20 2nd FN	17/10/20-18/10/20	02-11-2020	02/11/20-05/11/20	235	144	73	< 25	< 6	West Sunny
Nov-20 3rd FN	02/11/20-03/11/20	17-11-2020	17/11/20-19/11/20	159	79	34	< 25	< 6	West Sunny
Nov-20 4th FN	17/11/20-18/11/20	01-12-2020	01/12/20-03/12/20	203	120	70	< 25	< 6	West Cloud
Dec-20 5th FN	01/12/20-02/12/20	16-12-2020	16/12/20-19/12/20	231	113	66	< 25	< 6	West Sunny
Dec-20 6th FN	17/12/21-18/12/21	01-01-2021	01/01/21-05/01/21	363	166	85	< 25	7	West Sunny

Note:

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ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI

TEST REPORT

12/20 Test Report no. 1626	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Dec-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** Chapri Guest House

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Oct-20 1st FN	01/10/20-02/10/20	16-10-2020	16/10/20-19/10/20	135	75	32	< 25	< 6	East Rain
Oct-20 2nd FN	18/10/20-19/10/20	02-11-2020	02/11/20-05/11/20	163	79	39	< 25	< 6	West Sunny
Nov-20 3rd FN	03/11/20-04/11/20	17-11-2020	17/11/20-19/11/20	177	72	41	< 25	< 6	West Sunny
Nov-20 4th FN	18/11/20-19/11/20	01-12-2020	01/12/20-03/12/20	376	137	77	< 25	< 6	West Cloud
Dec-20 5th FN	01/12/20-02/12/20	16-12-2020	16/12/20-19/12/20	191	88	46	< 25	< 6	West Sunny
Dec-20 6th FN	17/12/21-18/12/21	01-01-2021	01/01/21-05/01/21	316	136	61	< 25	< 6	West Sunny

Note:

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ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI

TEST REPORT

12/20 Test Report no. 1627	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Dec-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** Amlo Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM10+ >PM10)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM2.5)	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Oct-20 1st FN	01/10/20-02/10/20	16-10-2020	16/10/20-19/10/20	166	82	40	< 25	< 6	East Rain
Oct-20 2nd FN	18/10/20-19/10/20	02-11-2020	02/11/20-05/11/20	151	68	28	< 25	< 6	West Sunny
Nov-20 3rd FN	03/11/20-04/11/20	17-11-2020	17/11/20-19/11/20	120	61	31	< 25	< 6	West Sunny
Nov-20 4th FN	18/11/20-19/11/20	01-12-2020	01/12/20-03/12/20	131	68	32	< 25	< 6	West Cloud
Dec-20 5th FN	02/12/20-03/12/20	16-12-2020	16/12/20-19/12/20	170	79	31	< 25	< 6	West Sunny
Dec-20 6th FN	18/12/21-19/12/21	01-01-2021	01/01/21-05/01/21	203	96	57	< 25	< 6	West Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
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ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI

TEST REPORT

12/20 Test Report no. 1629	Job No. 094320075	Year	FY2020-21
Type of Sample:	Effluent Water	Quarter Ending	Dec-20
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area: Dhori Project: Amlo Stations: Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-20 1st FN	05/10/20	16/10/20	16/10/20-05/11/20	24	<2.00	7.89	32
Oct-20 2nd FN	19/10/20	02/11/20	02/11/20-13/11/20	28	<2.00	7.56	36.8
Nov-20 3rd FN	06/11/20	17/11/20	17/11/20-01/12/20	28	<2.00	7.93	36.4
Nov-20 4th FN	20/11/20	01/12/20	01/12/20-16/12/20	32	<2.00	7.65	38.2
Dec-20 5th FN	00/01/00	00/01/00	00/01/00-00/01/00	0	0	0	0
Dec-20 6th FN	21/12/20	01/01/21	01/01/21-08/01/21	20	<2.00	7.75	24.2
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method


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TEST REPORT

 TC - 7470	Lab No. T-2187		
	12/20 Test Report No. Metal/04	Job No. 094320075	2020-21
Type of Sample	Ambient Air	Quarter Ending	Dec.'20
Customer	CCL	Date of Receipt of Sample:	16/12/2020
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	17/02-17/02/2021
Sampling Protocol:	USEPA IO-3.2: 1999, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area :	Dhori	Project:	Amlo
Stations:	1. P.O Office 2. Workshop 3. Chapri Guest House 4. Amlo Village		Date of Sampling: 01-02/12/2020 01-02/12/2020 01-02/12/2020 02-03/12/2020

S.No	Test Parameters	Units	Test Result				Method detection Limit	Limit (NAAQS-2011)	Test Method
			1	2	3	4			
Stations:			1	2	3	4			
1	Conc. of As in Air	ng/m ³	2.17	1.92	3.95	5.40	0.1	6.00	USEPA IO-3.2:1999
2	Conc. of Pb in Air	µg/m ³	<0.02	<0.02	<0.02	0.03	0.02	0.5	USEPA IO-3.2:1999
3	Conc. of Ni in Air	ng/m ³	1.54	2.00	1.84	1.81	0.1	20.00	USEPA IO-3.2: 1999

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TEST REPORT

03/21 Test Report no. 1621	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Mar-21
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** P.O Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM ₁₀ +>PM ₁₀)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO _x)	
Jan-21 1st FN	05/01/21-06/01/21	18-01-2021	18/01/21-20/01/21	256	131	65	< 25	< 6	East Rain
Jan-21 2nd FN	19/01/21-20/01/21	01-02-2021	01/02/21-04/01/21	157	78	34	< 25	< 6	West Cloud
Feb-21 3rd FN	02/02/21-03/02/21	16-02-2021	16/02/21-19/02/21	147	65	33	< 25	< 6	West Sunny
Feb-21 4th FN	16/02/21-17/02/21	01-03-2021	01/03/21-04/03/21	216	123	63	< 25	< 6	West Sunny
Mar-21 5th FN	01/03/21-02/03/21	16-03-2021	16/03/21-19/03/21	252	115	82	< 25	< 6	West Sunny
Mar-21 6th FN	17/03/21-18/03/21	01-04-2021	01/04/21-05/04/21	143	70	31	< 25	< 6	West Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
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TEST REPORT

03/21 Test Report no. 1622	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Mar-21
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** Workshop

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO _x)	
Jan-21 1st FN	05/01/21-06/01/21	18-01-2021	18/01/21-20/01/21	318	169	82	< 25	6	East Rain
Jan-21 2nd FN	19/01/21-20/01/21	01-02-2021	01/02/21-04/01/21	340	140	72	< 25	7	West Cloud
Feb-21 3rd FN	02/02/21-03/02/21	16-02-2021	16/02/21-19/02/21	304	159	82	< 25	< 6	West Sunny
Feb-21 4th FN	16/02/21-17/02/21	01-03-2021	01/03/21-04/03/21	265	149	84	< 25	< 6	West Sunny
Mar-21 5th FN	01/03/21-02/03/21	16-03-2021	16/03/21-19/03/21	226	83	47	< 25	< 6	West Sunny
Mar-21 6th FN	17/03/21-18/03/21	01-04-2021	01/04/21-05/04/21	226	105	63	< 25	< 6	West Sunny

Note:

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TEST REPORT

03/21 Test Report no. 1623	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Mar-21
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori **Project:** Amlo **Stations:** Chapri Guest House

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO _x)	
Jan-21 1st FN	05/01/21-06/01/21	18-01-2021	18/01/21-20/01/21	176	63	28	< 25	< 6	East Rain
Jan-21 2nd FN	19/01/21-20/01/21	01-02-2021	01/02/21-04/01/21	185	98	52	< 25	< 6	West Cloud
Feb-21 3rd FN	03/02/21-04/02/21	16-02-2021	16/02/21-19/02/21	511	219	120	< 25	7	West Sunny
Feb-21 4th FN	17/02/21-18/02/21	01-03-2021	01/03/21-04/03/21	157	75	38	< 25	< 6	West Sunny
Mar-21 5th FN	02/03/21-03/03/21	16-03-2021	16/03/21-19/03/21	206	98	53	< 25	< 6	West Sunny
Mar-21 6th FN	17/03/21-18/03/21	01-04-2021	01/04/21-05/04/21	315	110	65	< 25	< 6	West Sunny

Note:

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TEST REPORT

03/21 Test Report no. 1624	Job No. 094320075	Year	FY2020-21
Type of Sample	Ambient Air	Quarter Ending	Mar-21
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : Dhori

Project: Amlo

Stations: Amlo Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO _x)	
Jan-21 1st FN	06/01/21-07/01/21	18-01-2021	18/01/21-20/01/21	166	86	42	< 25	< 6	East Rain
Jan-21 2nd FN	20/01/21-21/01/21	01-02-2021	01/02/21-04/01/21	203	85	44	< 25	< 6	West Cloud
Feb-21 3rd FN	03/02/21-04/02/21	16-02-2021	16/02/21-19/02/21	185	89	52	< 25	< 6	West Sunny
Feb-21 4th FN	17/02/21-18/02/21	01-03-2021	01/03/21-04/03/21	130	66	34	< 25	< 6	West Sunny
Mar-21 5th FN	02/03/21-03/03/21	16-03-2021	16/03/21-19/03/21	235	83	44	< 25	7	West Sunny
Mar-21 6th FN	18/03/21-19/03/21	01-04-2021	01/04/21-05/04/21	240	75	30	< 25	< 6	West Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

Analysed By

Authorized Signatory

Note: 1) This Report refers to the values obtained at the time of testing and results related to the items tested
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ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI

TEST REPORT

03/21 Test Report no. 1626	Job No. 094320075	Year	FY2020-21
Type of Sample:	Effluent Water	Quarter Ending	Mar-21
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area: Dhori Project: Amlo Stations: Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	1.0	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jan-21 1st FN	09/01/21	18/01/21	18/01/21-01/02/21	24	<2.00	8.21	29.8
Jan-21 2nd FN	22/01/21	01/02/21	01/02/21-16/02/21	2	<2.00	7.87	35.2
Feb-21 3rd FN	05/02/21	16/02/21	16/02/21-25/02/21	24	<2.00	7.88	30.8
Feb-21 4th FN	20/02/21	01/03/21	01/03/21-16/03/21	20	<2.00	7.92	24.2
Mar-21 5th FN	04/03/21	16/03/21	16/03/21-31/03/21	24	<2.00	7.69	31.2
Mar-21 6th FN	20/03/21	01/04/21	01/04/21-10/04/21	24	<2.00	7.83	29.4
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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