

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,

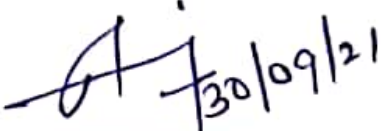
We are enclosing herewith the Environment Statement / Audit Reports for the financial year 2020-21 in respect of following projects of Dhori Area duly signed by respective Project Officers for your kind perusal.

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.

 **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

Selected Dhori Group of Mines
(SDGOM)
CENTRAL COAFIELDS 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.	Selected Dhorri Group of Mines (SDGOM) PO: Turiyo Dist: Bokaro State; Jharkhand
ii.	Industry category primary – (STC- Code)	Primary
iii	Production capacity	11 MTPA (As per approved EC) F.No.23-80/2018-IA.III(M) 27.04.2020 OF MOEF, NEW DELHI Production (2020-21) = 1.59 MTe
iv	Date of last environment statement submitted.	30/09/2020 (2019-20).

PART- B.

Water and Raw material composition:

Water Consumption	
1. Mining	1971 cum/Day
2 Domestic	870 cum/day
Total	2841 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	0.176	0.146
Diesel (Lit/Te)		0.95	1.52
Lubricant (Lit/Te)		0.03	0.046

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	487 (Workshop and domestic discharge after treatment)	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 pollutants are measurable and are given in annexure.	The results of SPM/RPM/SOx & NOx generated are well within the prescribed standard.
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 : 37.036 KL Battery returned: 32 Nos.	Used Oil: 23.97 KL Battery returned: 24 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)	1.50	2.02
b) From pollution control facility	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 is 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 1.50 million cubic meter of overburden was generated. The overburden material is more or less homogeneous comprising mainly shale, sand, silt, clay and gravel.
- **3. DISPOSAL PRACTICE :**
- Presently, the OB material is being filled in de-coaled area of quarry.

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:**
 - i) Regular water sprinkling of water on haul roads and other roads.
 - ii) Dust suppression at all transfer points
 - iii) Vegetation of OB dumps
 - iv) Regular monitoring of all environment parameters.
- 2) **Water Pollution control measures:**
 - i) 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.
 - ii) Work shop ETP is in operation.
 - iii) Regular monitoring is done to check the parameters.
- 3) **Noise pollution control measures.**
 - i) All HEMM provided with noise /sound proof cabins.
 - ii) Ear muffs/plugs are provided to workers.

PART- II

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 of 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.

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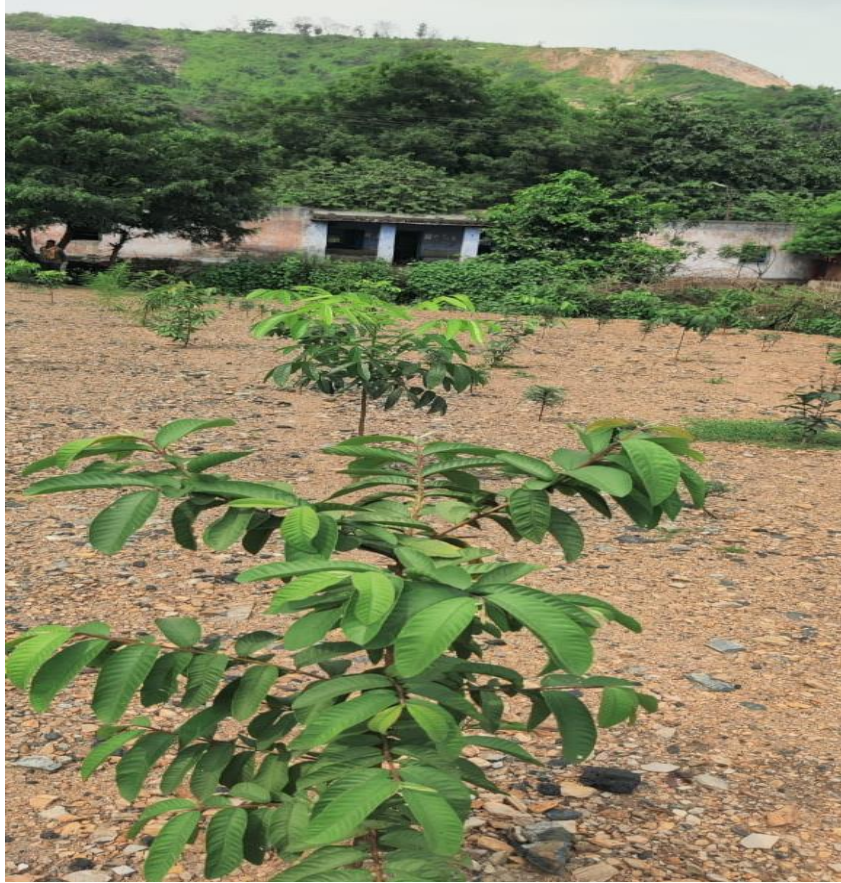

30/09/2021

Project Officer
SDGOM

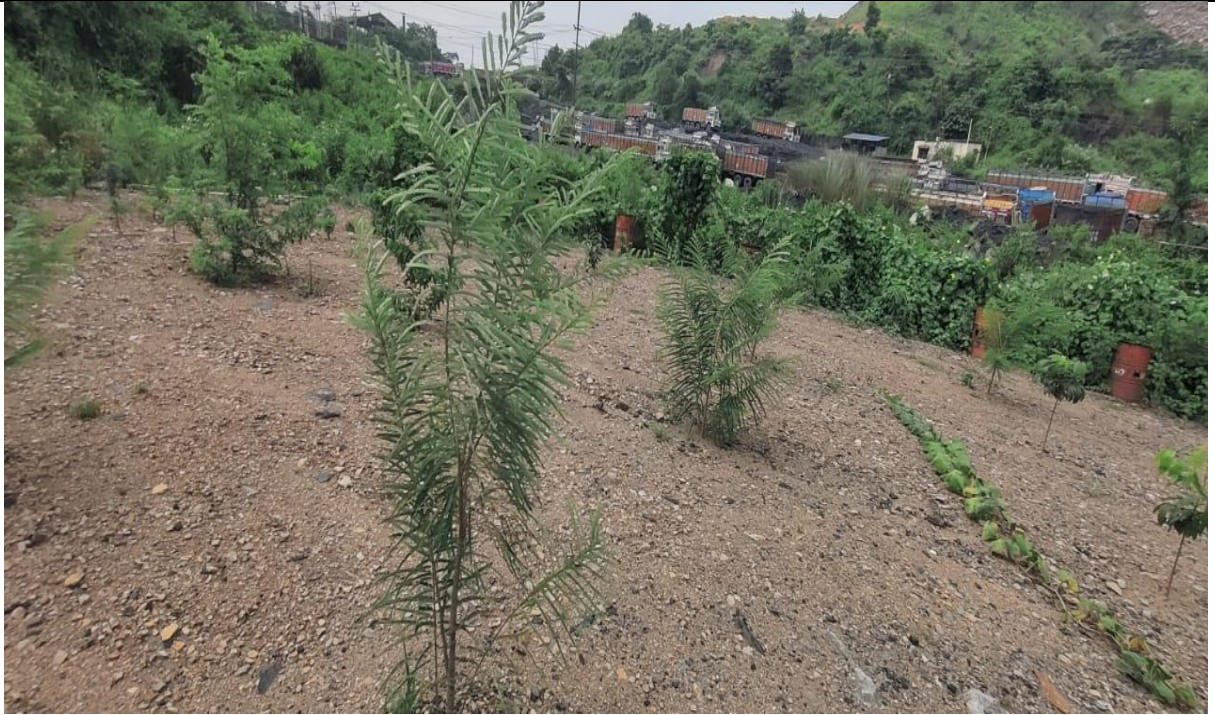

30/09/21
N.O. (Env & Forest)

• **SDGOM PHOTOGRAPHS**





Plantation Near Workshop of SDGOM





Spreading of grass seed balls at OB dumps in Selected Dhori open cast Mine



Wetting of Coal before feeding to crusher to suppress dust.



Tarpaulin Cover-Avoid overloading & spillage of valuable coal.



28 KL MIST SPRINKLER AT SDOCM

ENVIRONMENT LABORATORY , CMPDI (HQ) , RANCHI

TEST REPORT

06/20 Test Report no. 1608	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:** Selected Dhori **Stations:** Colony

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	07/04/20-08/04/20	16-04-2020	16/04/20-20/04/20	178	79	46	< 25	< 6	West Sunny
Apr-20 2nd FN	17/04/20-18/04/20	04-05-2020	04/05/20-06/05/20	164	76	33	< 25	< 6	West Sunny
May-20 3rd FN	06/05/20-07/05/20	18-05-2020	18/05/20-20/05/20	146	79	37	< 25	< 6	East Cloud
May-20 4th FN	20/05/20-21/05/20	01-06-2020	01/06/20-03/06/20	253	90	53	< 25	< 6	East Sunny
Jun-20 5th FN	03/06/20-04/06/20	16-06-2020	16/06/20-18/06/20	155	86	53	< 25	< 6	East Sunny
Jun-20 6th FN	18/06/20-19/06/20	01-07-2020	01/07/20-03/07/20	124	68	22	< 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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TEST REPORT

06/20 Test Report no. 1609	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:** Selected Dhori **Stations:** Tunio 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	07/04/20-08/04/20	16-04-2020	16/04/20-20/04/20	182	95	53	< 25	< 6	West Sunny
Apr-20 2nd FN	17/04/20-18/04/20	04-05-2020	04/05/20-06/05/20	132	67	30	< 25	< 6	West Sunny
May-20 3rd FN	06/05/20-07/05/20	18-05-2020	18/05/20-20/05/20	170	82	44	< 25	< 6	East Cloud
May-20 4th FN	20/05/20-21/05/20	01-06-2020	01/06/20-03/06/20	145	89	32	< 25	< 6	East Sunny
Jun-20 5th FN	03/06/20-04/06/20	16-06-2020	16/06/20-18/06/20	190	94	43	< 25	< 6	East Sunny
Jun-20 6th FN	18/06/20-19/06/20	01-07-2020	01/07/20-03/07/20	142	75	36	< 25	< 6	East Sunny

Note:

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TEST REPORT

06/20 Test Report no. 1610	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:** Selected Dhori **Stations:** Gunjadh Magazine

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	227	85	48	< 25	< 6	West Sunny
Apr-20 2nd FN	18/04/20-19/04/20	04-05-2020	04/05/20-06/05/20	192	92	45	< 25	< 6	West Sunny
May-20 3rd FN	07/05/20-08/05/20	18-05-2020	18/05/20-20/05/20	144	77	31	< 25	< 6	East Cloud
May-20 4th FN	21/05/20-22/05/20	01-06-2020	01/06/20-03/06/20	160	76	43	< 25	< 6	East Sunny
Jun-20 5th FN	04/06/20-05/06/20	16-06-2020	16/06/20-18/06/20	186	68	33	< 25	< 6	East Sunny
Jun-20 6th FN	19/06/20-20/06/20	01-07-2020	01/07/20-03/07/20	159	90	55	< 25	< 6	East Sunny

Note:

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TEST REPORT

06/20 Test Report no. 1612	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:** Selected Dhori **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	32	<2.00	7.75	36
Apr-20 2nd FN	20/04/20	04/05/20	04/05/20-20/05/20	32	<2.00	7.69	28
May-20 3rd FN	07/05/20	18/05/20	18/05/20-31/05/20	40	<2.00	8.01	44
May-20 4th FN	22/05/20	01/06/20	01/06/20-18/06/20	28	<2.00	8.06	36
Jun-20 5th FN	05/06/20	16/06/20	16/06/20-02/07/20	20	<2.00	7.83	24
Jun-20 6th FN	20/06/20	01/07/20	01/07/20-16/07/20	28	<2.00	7.98	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. 1608	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:** Selected Dhori **Stations:** Colony

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	08/07/20-09/07/20	20-07-2020	20/07/20-22/07/20	194	66	34	< 25	< 6	West Sunny
Jul-20 2nd FN	22/07/20-23/07/20	03-08-2020	03/08/20-04/08/20	136	77	41	< 25	< 6	West Sunny
Aug-20 3rd FN	04/08/20-05/08/20	17-08-2020	17/08/20-19/08/20	120	80	31	< 25	< 6	East Cloud
Aug-20 4th FN	18/08/20-19/08/20	01-09-2020	01/09/20-03/09/20	130	61	24	< 25	< 6	East Sunny
Sep-20 5th FN	02/09/20-03/09/20	16-09-2020	16/09/20-18/09/20	139	64	33	< 25	< 6	East Rain
Sep-20 6th FN	18/09/20-19/09/20	01-10-2020	01/10/20-05/07/20	133	56	23	< 25	< 6	East Rain

Note:

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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. 1609	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:** Selected Dhori **Stations:** Tunio 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	08/07/20-09/07/20	20-07-2020	20/07/20-22/07/20	179	73	43	< 25	< 6	West Sunny
Jul-20 2nd FN	22/07/20-23/07/20	03-08-2020	03/08/20-04/08/20	115	67	28	< 25	< 6	West Sunny
Aug-20 3rd FN	04/08/20-05/08/20	17-08-2020	17/08/20-19/08/20	94	62	29	< 25	< 6	East Cloud
Aug-20 4th FN	18/08/20-19/08/20	01-09-2020	01/09/20-03/09/20	114	70	35	< 25	< 6	East Sunny
Sep-20 5th FN	02/09/20-03/09/20	16-09-2020	16/09/20-18/09/20	151	86	34	< 25	< 6	East Rain
Sep-20 6th FN	18/09/20-19/09/20	01-10-2020	01/10/20-05/07/20	151	75	34	< 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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TEST REPORT

09/20 Test Report no. 1610	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:** Selected Dhori **Stations:** Gunjadh Magazine

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	08/07/20-09/07/20	20-07-2020	20/07/20-22/07/20	112	62	28	< 25	< 6	West Sunny
Jul-20 2nd FN	23/07/20-24/07/20	03-08-2020	03/08/20-04/08/20	145	70	30	< 25	< 6	West Sunny
Aug-20 3rd FN	05/08/20-06/08/20	17-08-2020	17/08/20-19/08/20	86	57	25	< 25	< 6	East Rain
Aug-20 4th FN	19/08/20-20/08/20	01-09-2020	01/09/20-03/09/20	125	63	26	< 25	< 6	East Sunny
Sep-20 5th FN	03/09/20-04/09/20	16-09-2020	16/09/20-18/09/20	112	63	26	< 25	< 6	East Rain
Sep-20 6th FN	19/09/20-20/09/20	01-10-2020	01/10/20-05/10/20	129	51	26	< 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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TEST REPORT

09/20 Test Report no. 1612	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:** Selected Dhori **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	08/07/20	20/07/20	20/07/20-04/08/20	28	<2.00	8.16	32
Jul-20 2nd FN	24/07/20	03/08/20	03/08/20-19/08/20	24	<2.00	7.82	32
Aug-20 3rd FN	07/08/20	17/08/20	17/08/20-29/08/20	24	<2.00	7.59	32
Aug-20 4th FN	19/08/20	01/09/20	01/09/20-16/09/20	20	<2.00	7.74	28
Sep-20 5th FN	04/09/20	16/09/20	16/09/20-30/09/20	16	<2.00	7.68	20
Sep-20 6th FN	21/09/20	01/10/20	01/10/20-12/10/20	20	<2.00	7.32	26
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

09/20 Test Report no. 1614	Job No. 094320075	Year	FY2020-21
Type of Sample:	Drinking Water	Quarter Ending	Sep-20
Customer	CCL	Date of Receipt:	20-07-2020
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	20.07.20-20.09.20
Testing/Sampling Protocol:	IS:10500 Drinking Water Standards, 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:** Selected Dhori
Stations: 1 Project Office, Borewell Water **Date of Sampling:**

Sl.No	Parameter	Sampling Stations			Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3			
1	Boron (as B), mg/l, Max	<0.20			0.20	0.5	APHA, 23rd Edition Carmine Method; 2017
2	Cadmium (as Cd), mg/l, Max	<0.0004			0.0004	0.003	APHA, 23rd Edition AAS-GTA Method, 2017
3	Calcium (as Ca), mg/l, Max	22.4			1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	12			2.00	250	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02			0.02	0.05	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Fluoride (as F) mg/l, Max	0.64			0.02	1.0	APHA, 23rd Edition, SPADNS Method, 2017
7	Free Residual Chlorine, mg/l, Min	<0.02			0.02	0.2	APHA, 23rd Edition, DPD Method, 2017
8	Iron (as Fe), mg/l, Max	<0.04			0.04	0.3	IS 3025 /53: 2003, R : 2009 AAS (Air-Ac-Flame)
9	Lead (as Pb), mg/l, Max	<0.001			0.001	0.01	APHA, 23rd Edition AAS-GTA Method, 2017
10	Manganese (as Mn), mg/l, Max	<0.01			0.01	0.1	IS-3025/59:2006, AAS (Air-Ac-Flame) Method
11	Nickel (as Ni), mg/l, Max	<0.003			0.003	0.02	APHA, 23rd Edition, 3120 B, ICP Method: 2017
12	Nitrate (as NO ₃), mg/l, Max	4.10			0.5	45	APHA, 23rd Edition, UV-Spectrophotometric, 2017
13	Odour	Agreeable			Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	7.32			1.0	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric Method
15	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001			0.001	0.001	APHA, 23rd Edition, 4-Amino Autipyrine Method, 2017
16	Selenium (as Se), mg/l, Max	<0.0005			0.0005	0.01	IS 3025/56:2003 AAS-VGA Method
17	Sulphate (as SO ₄) mg/l, Max	34			2.00	200	APHA, 23rd Edition. Turbidity Method, 2017
18	Total Alkalinity (CaCO ₃), mg/l, Max	68			4.00	200	IS-3025/23:1986,R: 2009, Titration Method
19	Total Arsenic (as As), mg/l, Max	<0.002			0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA: 1998
20	Total Chromium (as Cr), mg/l, Max	0.011			0.002	0.05	APHA, 23rd Edition, 3120 B, ICP Method: 2017
21	Total Dissolved Solids, mg/l, Max	168			25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric Method
22	Total Hardness (CaCO ₃), mg/l, Max	104			4.00	200	IS-3025/21:1983, R-2009, EDTA Method
23	Turbidity, NTU, Max	9			1.0	1	IS-3025/10:1984 R-1996, Nephelometric Method
24	Zinc (as Zn), mg/l, Max	0.009			0.005	5.0	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/20 Test Report no. 1609	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:** Selected Dhori **Stations:** Colony

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	03/10/20-04/10/20	16-10-2020	16/10/20-19/10/20	143	62	29	< 25	< 6	East Rain
Oct-20 2nd FN	18/10/20-19/10/20	02-11-2020	02/11/20-05/11/20	203	81	52	< 25	< 6	West Sunny
Nov-20 3rd FN	03/11/20-04/11/20	17-11-2020	17/11/20-19/11/20	150	71	32	< 25	< 6	West Sunny
Nov-20 4th FN	18/11/20-19/11/20	01-12-2020	01/12/20-03/12/20	203	92	45	< 25	< 6	West Cloud
Dec-20 5th FN	02/12/20-03/12/20	16-12-2020	16/12/20-19/12/20	206	108	58	< 25	< 6	West Sunny
Dec-20 6th FN	18/12/21-19/12/21	01-01-2021	01/01/21-05/01/21	134	76	36	< 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.
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

12/20 Test Report no. 1610	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:** Selected Dhori **Stations:** Tunio 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)	
Oct-20 1st FN	03/10/20-04/10/20	16-10-2020	16/10/20-19/10/20	176	78	41	< 25	< 6	East Rain
Oct-20 2nd FN	18/10/20-19/10/20	02-11-2020	02/11/20-05/11/20	169	90	41	< 25	< 6	West Sunny
Nov-20 3rd FN	03/11/20-04/11/20	17-11-2020	17/11/20-19/11/20	154	83	49	< 25	< 6	West Sunny
Nov-20 4th FN	18/11/20-19/11/20	01-12-2020	01/12/20-03/12/20	285	106	61	< 25	< 6	West Cloud
Dec-20 5th FN	02/12/20-03/12/20	16-12-2020	16/12/20-19/12/20	149	75	35	< 25	< 6	West Sunny
Dec-20 6th FN	18/12/21-19/12/21	01-01-2021	01/01/21-05/01/21	161	87	47	< 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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TEST REPORT

12/20 Test Report no. 1611	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:** Selected Dhori **Stations:** Gunjadih Magazine

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	04/10/20-05/10/20	16-10-2020	16/10/20-19/10/20	195	66	53	< 25	< 6	East Rain
Oct-20 2nd FN	19/10/20-20/10/20	02-11-2020	02/11/20-05/11/20	147	77	36	< 25	< 6	West Sunny
Nov-20 3rd FN	04/11/20-05/11/20	17-11-2020	17/11/20-19/11/20	133	76	29	< 25	< 6	West Sunny
Nov-20 4th FN	19/11/20-20/11/20	01-12-2020	01/12/20-03/12/20	182	99	44	< 25	< 6	West Cloud
Dec-20 5th FN	03/12/20-04/12/20	16-12-2020	16/12/20-19/12/20	159	81	39	< 25	< 6	West Sunny
Dec-20 6th FN	19/12/21-20/12/21	01-01-2021	01/01/21-05/01/21	131	69	33	< 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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TEST REPORT

12/20 Test Report no. 1613	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:** Selected Dhori **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	06/10/20	16/10/20	16/10/20-05/11/20	28	<2.00	8.11	34
Oct-20 2nd FN	19/10/20	02/11/20	02/11/20-13/11/20	24	<2.00	8.06	30.4
Nov-20 3rd FN	06/11/20	17/11/20	17/11/20-01/12/20	24	<2.00	7.61	30.4
Nov-20 4th FN	20/11/20	01/12/20	01/12/20-16/12/20	28	<2.00	7.73	35.6
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	24	<2.00	7.49	28.4
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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TEST REPORT

12/20 Test Report No. 1614	Job No. 094320075	Year	2020-21
Type of Sample:	Effluent Water	Quarter Ending	Dec.'20
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	16/12/20
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16/12/20-11/01/21
Testing 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:** Selected Dhori
Stations: 1. Lagoon Discharge **Date of Sampling:** 04/12/2020
 2.

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l, Max	1.58			0.02	50.0	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l, Max	<0.02			0.002	0.2	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l, Max	<2.00			2.00	30.0	IS 3025 /44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l, Max	<0.0004			0.0004	2.0	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l, Max	20			4.00	250.0	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l, Max	<0.02			0.02	3.0	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate, mg/l, Max	0.47			0.30	5.0	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F) mg/l, Max	1.42			0.02	2.0	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l, Max	<0.02			0.02	5.0	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium, mg/l, Max	<0.01			0.01	0.1	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l, Max	<0.04			0.04	3.0	IS 3025 /53: 2003, R : 2009 , AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l, Max	<0.001			0.001	0.1	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l, Max	<0.01			0.01	2.0	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l, Max	<0.003			0.003	3.0	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen, mg/l, Max	0.93			0.50	10.0	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l, Max	<2.00			2.00	10.0	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	8.21			1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max	<0.001			0.001	1.0	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l, Max	<0.0005			0.0005	0.05	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as SO ₃), mg/l, Max	<0.005			0.005	2.0	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (°C)	24.2			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l, Max	<0.002			<0.002	2.0	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l, Max	2.8			1.00	100.0	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l, Max	<0.02			0.02	1.0	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l, Max	23.8			10.00	100.0	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l, Max	<0.005			0.005	5.0	IS 3025 /49: 1994, R: 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/20 Test Report no. 1615	Job No. 094320075	Year	FY2020-21
Type of Sample:	Surface Water	Quarter Ending	Dec-20
Customer	CCL	Date of Receipt:	16-10-2020
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.20-10.01.21
Testing/Sampling Protocol:	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:	Selected Dhori
Stations:			Date of Sampling:
	1. Tisri Nala (2) before confluence with Damodar		06-10-2020
	2. Damodar after conf. with Tisri Nala		06-10-2020

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2	2.4			2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	8	8			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	6	5.6			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	1.27	0.59			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<0.04			0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001	<0.001			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃), mg/l, Max	3.10	4.60			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.24	7.96			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄) mg/l, Max	16	17			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	198	182			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	24.8	28.4			10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	<0.005	0.01			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/20 Test Report no. 1616	Job No. 094320075	Year	FY2020-21
Type of Sample:	Drinking Water	Quarter Ending	Dec-20
Customer	CCL	Date of Receipt:	16-10-2020
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.10.20-10.01.21
Testing/Sampling Protocol:	IS:10500 Drinking Water Standards, 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:	Selected Dhori
Stations:	1 Project Office, Borewell Water		Date of Sampling:
			06-10-2020

Sl.No	Parameter	Sampling Stations			Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3			
1	Boron (as B), mg/l, Max	<0.20			0.20	0.5	APHA, 23rd Edition Carmine Method; 2017
2	Cadmium (as Cd), mg/l, Max	<0.0004			0.0004	0.003	APHA, 23rd Edition AAS-GTA Method, 2017
3	Calcium (as Ca), mg/l, Max	8			1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	8			2.00	250	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02			0.02	0.05	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Fluoride (as F) mg/l, Max	0.6			0.02	1.0	APHA, 23rd Edition, SPADNS Method, 2017
7	Free Residual Chlorine, mg/l, Min	<0.02			0.02	0.2	APHA, 23rd Edition, DPD Method, 2017
8	Iron (as Fe), mg/l, Max	<0.04			0.04	0.3	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
9	Lead (as Pb), mg/l, Max	<0.001			0.001	0.01	APHA, 23rd Edition AAS-GTA Method, 2017
10	Manganese (as Mn), mg/l, Max	<0.01			0.01	0.1	IS-3025/59:2006, AAS (Air-Ac-Flame) Method
11	Nickel (as Ni), mg/l, Max	<0.003			0.003	0.02	APHA, 23rd Edition, 3120 B, ICP Method: 2017
12	Nitrate (as NO ₃), mg/l, Max	4.70			0.5	45	APHA, 23rd Edition, UV-Spectrophotometric, 2017
13	Odour	Agreeable			Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	7.93			1.0	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric Method
15	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001			0.001	0.001	APHA, 23rd Edition, 4-Amino Antipyrine, 2017
16	Selenium (as Se), mg/l, Max	<0.0005			0.0005	0.01	IS 3025/56:2003 AAS-VGA Method
17	Sulphate (as SO ₄) mg/l, Max	22			2.00	200	APHA, 23rd Edition. Turbidity Method, 2017
18	Total Alkalinity (CaCO ₃), mg/l, Max	56			4.00	200	IS-3025/23:1986, R: 2009, Titration Method
19	Total Arsenic (as As), mg/l, Max	<0.002			0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA: 1998
20	Total Chromium (as Cr), mg/l, Max	<0.002			0.002	0.05	APHA, 23rd Edition, 3120 B, ICP Method: 2017
21	Total Dissolved Solids, mg/l, Max	164			25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric Method
22	Total Hardness (CaCO ₃), mg/l, Max	104			4.00	200	IS-3025/21:1983, R-2009, EDTA Method
23	Turbidity, NTU, Max	1			1.0	1	IS-3025/10:1984 R-1996, Nephelometric Method
24	Zinc (as Zn), mg/l, Max	0.0247			0.005	5.0	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)


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TEST REPORT

 TC - 7470	Lab No. T-2187		Job No. 094320075	2020-21
	12/20	Test Report No. Metal/02		
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:	Selected Dhori
Stations:	1. Colony 2. Tunio Village 3. Gunjadih Magazine 4.		Date of Sampling: 02-03/12/2020 02-03/12/2020 03-04/12/2020

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	5.96	5.91	3.50		0.1	6.00	USEPA IO-3.2:1999
2	Conc. of Pb in Air	µg/m ³	0.04	0.04	0.02		0.02	0.5	USEPA IO-3.2:1999
3	Conc. of Ni in Air	ng/m ³	4.15	4.47	0.92		0.1	20.00	USEPA IO-3.2: 1999

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TEST REPORT

03/21 Test Report no. 1608	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:** Selected Dhori **Stations:** Colony

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	234	97	57	< 25	< 6	East Rain
Jan-21 2nd FN	20/01/21-21/01/21	01-02-2021	01/02/21-04/01/21	195	98	57	< 25	< 6	West Cloud
Feb-21 3rd FN	03/02/21-04/02/21	16-02-2021	16/02/21-19/02/21	138	76	38	< 25	< 6	West Sunny
Feb-21 4th FN	18/02/21-19/02/21	01-03-2021	01/03/21-04/03/21	301	132	74	< 25	< 6	West Sunny
Mar-21 5th FN	03/03/21-04/03/21	16-03-2021	16/03/21-19/03/21	140	69	30	< 25	< 6	West Sunny
Mar-21 6th FN	18/03/21-19/03/21	01-04-2021	01/04/21-05/04/21	152	65	32	< 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.

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TEST REPORT

03/21 Test Report no. 1609	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:** Selected Dhori **Stations:** Tunio 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	154	74	43	< 25	< 6	East Rain
Jan-21 2nd FN	20/01/21-21/01/21	01-02-2021	01/02/21-04/01/21	130	66	21	< 25	< 6	West Cloud
Feb-21 3rd FN	03/02/21-04/02/21	16-02-2021	16/02/21-19/02/21	129	60	28	< 25	< 6	West Sunny
Feb-21 4th FN	18/02/21-19/02/21	01-03-2021	01/03/21-04/03/21	130	74	48	< 25	< 6	West Sunny
Mar-21 5th FN	03/03/21-04/03/21	16-03-2021	16/03/21-19/03/21	204	80	41	< 25	< 6	West Sunny
Mar-21 6th FN	19/03/21-20/03/21	01-04-2021	01/04/21-05/04/21	234	92	53	< 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.

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TEST REPORT

03/21 Test Report no. 1610	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:** Selected Dhori **Stations:** Gunjadih Magazine

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	07/01/21-08/01/21	18-01-2021	18/01/21-20/01/21	176	84	51	< 25	< 6	East Rain
Jan-21 2nd FN	21/01/21-22/01/21	01-02-2021	01/02/21-04/01/21	171	85	48	< 25	< 6	West Cloud
Feb-21 3rd FN	04/02/21-05/02/21	16-02-2021	16/02/21-19/02/21	144	75	40	< 25	< 6	West Sunny
Feb-21 4th FN	18/02/21-19/02/21	01-03-2021	01/03/21-04/03/21	197	84	31	< 25	< 6	West Sunny
Mar-21 5th FN	03/03/21-04/03/21	16-03-2021	16/03/21-19/03/21	187	88	55	< 25	< 6	West Sunny
Mar-21 6th FN	19/03/21-20/03/21	01-04-2021	01/04/21-05/04/21	221	82	43	< 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.

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TEST REPORT

03/21 Test Report no. 1611	Job No. 094320075	Year	FY2020-21
Type of Sample:	Noise	Quarter Ending	Mar-21
Customer	CCL		
Testing/Sampling Protocol:	'The noise pollution (Regulation and Control), Rules,2000, LQR 34		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : **Dhori** **Project:** **Selected Dhori**

Station Name	Noise Level dB(A) Leq					
	Jan-21 1st FN Day	Jan-21 2nd FN Day	Feb-21 3rd FN Day	Feb-21 4th FN Day	Mar-21 5th FN Day/Night	Mar-21 6th FN Day/Night
Date of recording	06-01-2021	20-01-2021	03-02-2021	18-02-2021	03-03-2021	18-03-2021
1. Colony	51.4	50.4	51.2	51.2	51.4/45.4	50.6/44.2
Date of recording	06-01-2021	20-01-2021	03-02-2021	18-02-2021	03-03-2021	19-03-2021
2. Tunio Village	48.8	49.5	49.7	49.4	48.6/42.3	49.7/43.4

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

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TEST REPORT

03/21 Test Report no. 1612	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: Selected Dhori 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	20	<2.00	8.17	24.8
Jan-21 2nd FN	22/01/21	01/02/21	01/02/21-16/02/21	24	<2.00	8.12	29.6
Feb-21 3rd FN	05/02/21	16/02/21	16/02/21-25/02/21	16	<2.00	7.93	21.6
Feb-21 4th FN	20/02/21	01/03/21	01/03/21-16/03/21	16	<2.00	8.14	22.4
Mar-21 5th FN	04/03/21	16/03/21	16/03/21-31/03/21	24	<2.00	7.66	30.6
Mar-21 6th FN	20/03/21	01/04/21	01/04/21-10/04/21	24	<2.00	7.97	30.6
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

03/21 Test Report no. 1613	Job No. 094320075	Year	FY2020-21
Type of Sample:	Surface Water	Quarter Ending	Mar-21
Customer	CCL	Date of Receipt:	18-01-2021
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	18.01.21-31.03.21
Testing/Sampling Protocol:	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:** Selected Dhori
Stations: 1. Tisri Nala (2) before confluence with Damodar **Date of Sampling:** 09-01-2021
 2. Damodar after conf. with Tisri Nala **Date of Sampling:** 09-01-2021

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002			0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	<2.00	2			2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004			0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	36	16			2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02			0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	6.2	5.8			0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.42	0.68			0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01			0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<0.04			0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001	<0.001			0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃), mg/l, Max	6.20	6.10			0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	7.92	7.77			1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001			0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005			0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄) mg/l, Max	84	50			2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	449	172			25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	20.2	24.4			10.00	IS 3025 /17:1984, R : 1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	<0.005	<0.005			0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

03/21 Test Report no. 1614	Job No. 094320075	Year	FY2020-21
Type of Sample:	Drinking Water	Quarter Ending	Mar-21
Customer	CCL	Date of Receipt:	18-01-2021
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	18.01.21-31.03.21
Testing/Sampling Protocol:	IS:10500 Drinking Water Standards, 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:

Selected Dhori

Stations:

1 Project Office, Borewell Water

Date of Sampling:

09-01-2021

Sl.No	Parameter	Sampling Stations			Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3			
1	Boron (as B), mg/l, Max	<0.20			0.20	0.5	APHA, 23rd Edition Carmine Method; 2017
2	Cadmium (as Cd), mg/l, Max	<0.0004			0.0004	0.003	APHA, 23rd Edition AAS-GTA Method, 2017
3	Calcium (as Ca), mg/l, Max	30.4			1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	14			2.00	250	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02			0.02	0.05	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Fluoride (as F) mg/l, Max	0.7			0.02	1.0	APHA, 23rd Edition, SPADNS Method, 2017
7	Free Residual Chlorine, mg/l, Min	<0.02			0.02	0.2	APHA, 23rd Edition, DPD Method, 2017
8	Iron (as Fe), mg/l, Max	<0.04			0.04	1.0	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
9	Lead (as Pb), mg/l, Max	<0.001			0.001	0.01	APHA, 23rd Edition AAS-GTA Method, 2017
10	Manganese (as Mn), mg/l, Max	<0.01			0.01	0.1	IS-3025/59:2006, AAS (Air-Ac-Flame) Method
11	Nickel (as Ni), mg/l, Max	<0.003			0.003	0.02	APHA, 23rd Edition, 3120 B, ICP Method: 2017
12	Nitrate (as NO ₃), mg/l, Max	6.10			0.5	45	APHA, 23rd Edition, UV-Spectrophotometric, 2017
13	Odour	Agreeable			Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	7.86			1.0	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric Method
15	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001			0.001	0.001	APHA, 23rd Edition, 4-Amino Autipyrine, 2017
16	Selenium (as Se), mg/l, Max	<0.0005			0.0005	0.01	IS 3025/56:2003 AAS-VGA Method
17	Sulphate (as SO ₄) mg/l, Max	48			2.00	200	APHA, 23rd Edition, Turbidity Method, 2017
18	Total Alkalinity (CaCO ₃), mg/l, Max	96			4.00	200	IS-3025/23:1986, R: 2009, Titration Method
19	Total Arsenic (as As), mg/l, Max	<0.002			0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA: 1998
20	Total Chromium (as Cr), mg/l, Max	<0.002			0.002	0.05	APHA, 23rd Edition, 3120 B, ICP Method: 2017
21	Total Dissolved Solids, mg/l, Max	192			25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric Method
22	Total Hardness (CaCO ₃), mg/l, Max	132			4.00	200	IS-3025/21:1983, R-2009, EDTA Method
23	Turbidity, NTU, Max	1			1.0	1	IS-3025/10:1984 R-1996, Nephelometric Method
24	Zinc (as Zn), mg/l, Max	<0.005			0.005	5.0	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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