

**State Level Environment Impact Assessment Authority, Rajasthan**

Main Building, Room No. 5221, Secretariat, Jaipur.

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No. F.1 (4)/SEIAA/SEAC-Raj/Sectt/Project /Cat. 1(b))B2 (19122)/2019-20

Dated:

**25 JUN 2021**

M/s Vedanta Limited (Division Cairn Oil & Gas)  
Applicant- Dilip Kumar Bera,  
Add.- DLF Atria, Phase 2 Jakaranda Marg DLF City,  
Gurgaon, Haryana.

Sub:-E.C for proposed "Onshore Oil and Gas Exploration Appraisal and Early Production Project" in RJ-ONHP-2017/4 Hydrocarbon Block, falling in Distt.- Barmer and Jalore (Raj.) (**Proposal No.- 183751**).

This has reference to your application dated 19.02.2021 seeking environmental clearances for the above project under EIA Notification 2006. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification 2006 on the basis of the mandatory documents enclosed with the application viz. the questionnaire, EIA, EMP and additional clarifications furnished in response to the observation of the State Level Expert Appraisal Committee Rajasthan, in its meeting held on 15<sup>th</sup> to 16<sup>th</sup> April, 2021.

**2 Brief details of the Project:**

1	Category / Item no.(in Schedule):	1(b) B2
2	Location of Project	Gudamanali Tehsil of Barmer District and Sanchore Tehsil of Jalore District. Rajasthan
3	Project Details  M.L. No. /Production Capacity	M.L.No.: Not Applicable  Vedanta Ltd. (Div: Cairn Oil and Gas) has been allocated RJ-ONHP-2017/4 hydrocarbon block falling in Barmer District of Rajasthan by MoPN&G, GOI under the Revenue Sharing Contract (RSC) for exploration and extraction of hydrocarbons. Petroleum Exploration Licence (PEL) has been granted vide letter no. P.18 (8) Mine/Group-2/2019 dated 27.05.2019.  Proposed project activities include exploration and appraisal drilling of wells in the block ❖ Total Block Area : 1087 Km <sup>2</sup> ❖ Drilling of Exploratory and Appraisal Wells : 62 Nos. ❖ Khasra No. : 40O/8, 40P/5, 40O/12, 40 P/9, 40 P/16, 40 P/13 ❖ Setting up of 12 Early Production Units (EPUs)/ Quick Production Units



(QPUs) and early production of 24000 BOPD crude oil and 3.6MMSCFD associated Natural gas in the block RJ-ONHP-2017/4.  
Details of proposed tentative well coordinates including Village, Tehsil & District:

Well Name	Geographical Coordinates	Present land use	Administrative Setting		
			Village	Tehsil	District
1	24°51'4.50"N 71°31'27.73"E	Agricultural land	Bhatwas	Sanchole	Jalor
2	24°51'6.94"N 71°33'50.30"E	Agricultural land	Martawa	Sanchor	Jalor
3	24°51'9.34"N 71°36'12.88"E	Agricultural land	Rataura	Sanchole	Jalor
4	24°51'11.70"N 71°38'35.46"E	Agricultural land	Rataura	Sanchole	Jalor
5	24°51'14.02"N 71°40'58.03"E	Agricultural land	Sangarwa	Sanchole	Jalor
6	24°51'16.30"N 71°43'20.61"E	Agricultural land	Dawal	Sanchole	Jalor
7	24°51'18.55"N 71°45'43.20"E	Agricultural land	Jakhal	Sanchole	Jalor
8	24°51'20.75"N 71°48'5.78"E	Agricultural land	Jakhal	Sanchole	Jalor
9	24°53'14.61"N 71°31'25.03"E	Agricultural land	Tembi	Sanchole	Jalor
10	24°53'17.05"N 71°33'47.65"E	Agricultural land	Shivpura	Sanchole	Jalor
11	24°53'19.45"N 71°36'10.27"E	Agricultural land	Rataura	Sanchole	Jalor
12	24°53'21.81"N 71°38'32.89"E	Agricultural land	Ratanpura	Sanchole	Jalore
13	24°53'24.13"N 71°40'55.51"E	Agricultural land	Sangarwa	Sanchole	Jalore
14	24°53'26.41"N 71°43'18.13"E	Agricultural land	Jhotra	Sanchor	Jalore
15	24°53'28.66"N 71°45'40.76"E	Agricultural land	Parawa	Sanchole	Jalore
16	24°53'30.86"N 71°48'3.39"E	Agricultural land	Malwara	Sanchor	Jalor
17	24°55'24.72"N 71°31'22.34"E	Agricultural land	Chimra	Sanchor	Jalor
18	24°55'27.16"N	Agricultural land	Shivpura	Sanchor	Jalor

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	71°33'45.00"E				
19	24°55'29.56"N 71°36'7.66"E	Agricultural land	Rampura	Sanchor	Jalor
20	24°55'31.92"N 71°38'30.32"E	Agricultural land	Malipura	Sanchor	Jalor
21	24°55'34.24"N 71°40'52.99"E	Agricultural land	Keriya	Sanchor	Jalor
22	24°55'36.53"N 71°43'15.65"E	Agricultural land	Siwara	Sanchore	Jalor
23	24°55'38.77"N 71°45'38.32"E	Agricultural land	Dhaneriya	Sanchore	Jalor
24	24°55'40.97"N 71°48'0.99"E	Agricultural land	Khirodi	Sanchore	Jalor
25	24°57'34.82"N 71°31'19.64"E	Agricultural land	Sesawa	Sanchore	Jalor
26	24°58'4.54"N 71°34'15.46"E	Agricultural land	Hali Bao	Sanchore	Jalor
27	24°57'39.67"N 71°36'5.05"E	Agricultural land	Hali Bao	Sanchore	Jalor
28	24°57'55.67"N 71°38'18.01"E	Agricultural land	Keriya	Sanchore	Jalor
29	24°57'44.35"N 71°40'50.46"E	Agricultural land	Charnim	Sanchore	Jalor
30	24°57'54.43"N 71°43'28.75"E	Agricultural land	Ranodar	Sanchore	Jalor
31	24°57'48.88"N 71°45'35.88"E	Agricultural land	Tetrol Rathoran	Sanchore	Jalor
32	24°59'44.93"N 71°31'16.94"E	Agricultural land	Aaleti	Gudhamalani	Barmer
33	24°59'53.22"N 71°33'39.68"E	Agricultural land	Siyago ki beri	Gudha Malani	Barmer
34	24°59'49.78"N 71°36'2.43"E	Agricultural land	Kundaki	Sanchore	Jalor
35	24°59'52.14"N 71°38'25.18"E	Agricultural land	Veerawa	Sanchore	Jalor
36	25°0'6.15"N 71°40'40.14"E	Agricultural land	Gandhaw Khurd	Gudha malani	Barmer
37	24°59'56.75"N 71°43'10.69"E	Agricultural land	Mailawas Gusaiyan	Sanchore	Jalor
38	24°59'59.00"N	Agricultural land	Bhadoo and	Sanchore	Jalor

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	71°45'33.44"E		Goyton ki Dhani		
39	25°1'55.04"N 71°31'14.24"E	Agricultural land	Rampura	Sanchore	Jalor
40	25°1'57.49"N 71°33'37.03"E	Agricultural land	Siyagon ki Beri	Sanchore	Jalor
41	25°2'5.53"N 71°36'28.00"E	Agricultural land	Jhakarra	Gudha malani	Barmer
42	25°2'2.26"N 71°38'22.61"E	Agricultural land	Panawali	Gudha malani	Barmer
43	25°2'4.58"N 71°40'45.41"E	Agricultural land	Gandhaw Khurd	Gudha malani	Barmer
44	25°2'49.72"N 71°42'29.24"E	Agricultural land	Gandhaw Kalan	Gudha malani	Barmer
45	25°4'5.16"N 71°31'11.53"E	Agricultural land	Purawa	Gudha Malani	Barmer
46	25°4'7.60"N 71°33'34.37"E	Agricultural land	Panal ki Beri	Gudha Malani	Barmer
47	25°4'10.00"N 71°35'57.20"E	Agricultural land	Jhakarra	Gudha malani	Barmer
48	25°4'12.37"N 71°38'20.04"E	Agricultural land	Panawali	Gudha malani	Barmer
49	25°4'14.69"N 71°40'42.87"E	Agricultural land	Dabli	Gudha Malani	Barmer
50	25°4'13.60"N 71°41'55.82"E	Agricultural land	Godaron ki Dhani	Gudha Malani	Barmer
51	25°6'15.27"N 71°31'8.83"E	Agricultural land	Khotawas	Gudhamalani	Barmer
52	25°6'17.71"N 71°33'31.70"E	Agricultural land	AAkli	Gudha Malani	Barmer
53	25°6'20.12"N 71°35'54.58"E	Agricultural land	RamjiKa Golphanta	Gudha Malani	Barmer
54	25°6'22.48"N 71°38'17.46"E	Agricultural land	Tejiyaws	Gudha malani	Barmer
55	25°6'24.81"N 71°40'40.34"E	Agricultural land	Gadevee	Gudha malani	Barmer
56	25°7'21.64"N 71°43'12.97"E	Agricultural land	Padarri	Gudhamalani	Barmer

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57	25°8'25.38"N 71°31'6.12"E	Agricultural land	Bhadrai	Gudha Malani	Barmer
58	25°8'27.83"N 71°33'29.04"E	Agricultural land	Janiyon Ki Dhani	Bagora	Jalor
59	25°8'30.23"N 71°36'59.15"E	Agricultural land	Peeprali	Gudha malani	Barmer
60	25°8'32.60"N 71°38'14.88"E	Agricultural land	Siyalon ka Der	Gudha Malani	Barmer
61	25°8'34.92"N 71°40'37.81"E	Agricultural land	Gadevee	Gudha Malani	Barmer
62	25°8'37.21"N 71°41'50.61"E	Agricultural land	Gadevee	Gudha Malani	Barmer

Note:(1) Details of land including Khasra Nos, site layout/ map, etc. will be submitted to RSPCB 15 days prior to commencement of drilling of a well as part of the compliance to CTE conditions.  
(2) Actual geographical surface coordinates of exploratory and appraisal well locations will be within 2000m radius of the proposed coordinates.

4	Project Cost:	INR 1396 Crores															
5	Water Requirement & Source	<p>Water requirement for Exploration and Appraisal Well drilling: 87 m<sup>3</sup>/day per well  Water requirement for Early Production: 15m<sup>3</sup>/day at each early production location</p> <ul style="list-style-type: none"> <li>• <u>Drilling of an exploratory/ appraisal well is a short-term activity for about 45 days.</u></li> <li>• <u>Drilling of wells would be carried one well at a time in sequence over the period. Simultaneously all wells will not be drilled.</u></li> <li>• <u>It is to be noted that after completion of drilling activity in one well, drilling rig would be mobilised to next site for drilling. It is envisaged that about 2 to 3 nos. of wells could be drilled in a year.</u></li> </ul> <p>Sourcing of water requirement: Water would be sourced locally through approved/authorized sources. As an additional option, water requirement could be sourced from the already existing facilities of Cairn in Barmer. <u>NO bore well will be drilled for the extraction of ground water for this project.</u></p>															
6	Fuel & Energy:	<table border="1"> <thead> <tr> <th colspan="5">Power requirement during Exploratory and Appraisal well drilling</th> </tr> <tr> <th>Location</th> <th>DG Capacity</th> <th>Fuel Requirement</th> <th>Stack Height (m)</th> <th>Stack dia (m)</th> </tr> </thead> <tbody> <tr> <td>Camp Site</td> <td>2 X 350 KVA (1W+1S)</td> <td>HSD- 3-4 KLD</td> <td>6</td> <td>0.21</td> </tr> </tbody> </table>	Power requirement during Exploratory and Appraisal well drilling					Location	DG Capacity	Fuel Requirement	Stack Height (m)	Stack dia (m)	Camp Site	2 X 350 KVA (1W+1S)	HSD- 3-4 KLD	6	0.21
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		Drilling Site	3 x 1000 KVA (2W +1 S) or 2x 1850 KVA (1W+1S)	HSD- 15- 18 KLD	10	0.2						
		Liquid Mud Pump (LMP)	3X250 KVA (2W+1S))	HSD- 2-3 KLD	6	0.2						
		Radio Room	2X100 KVA (1W+1S)	HSD-1-2 KLD	6	0.305						
		Diesel fired Heater- Treater or IWBH (Induced Water Bath Heater) with Well Testing Set up	350 KVA	HSD-3 KLD	6	0.21						
		Flaring during well testing /extended well testing	Test Flare	Natural Gas-71 m3/hour	30	0.21						
Power requirement during Early Production												
		DG Set	DG Capacity	Fuel Requirement	Stack Height (m)	Stack dia (m)						
		GEG (Gas Engine Generator)	1 MW	Natural Gas-283.16 m3/hour	10	0.21						
		D.G. Set (Emergency backup)	500 KVA	HSD-0.12 KLD	6	0.15						
		Flaring for early production	Flare	Natural Gas-71 m3/hour	30	0.21						
		Dual fuel (Diesel/Gas) fired Heater-Treater or IWBH (Induced Water Bath Heater)	800 KVA	0.25 MMSCFD or 4 KLD	6	0.15						
7	Environment Management Plan	<p>Environment Management Plan (EMP) has been prepared and submitted to SEAC office.</p> <p>Cost of Environment Management Plan (EMP) including Greenbelt/ plantation: - The tentative budget for implementation of the EMP including environmental monitoring and Greenbelt/Plantation would be INR 10.0lakhs for each well site during drilling activity.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="width: 5%;">#.</th> <th style="width: 65%;">Particulars</th> <th style="width: 30%;">Approx. budget/ well (INR) in Lakh</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>					#.	Particulars	Approx. budget/ well (INR) in Lakh			
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1.	Air quality management	3.5
2.	Noise monitoring	0.75
3.	Surface and Ground Water Quality	2.0
4.	Soil Quality	0.75
5.	Waste management	2.5
6.	Greenbelt/ Plantation	0.5
	Total:	10.0

The tentative budget for implementation of the EMP including environmental monitoring and Greenbelt/Plantation would be INR 11.0lakhs for each Early Production unit per year during early production.

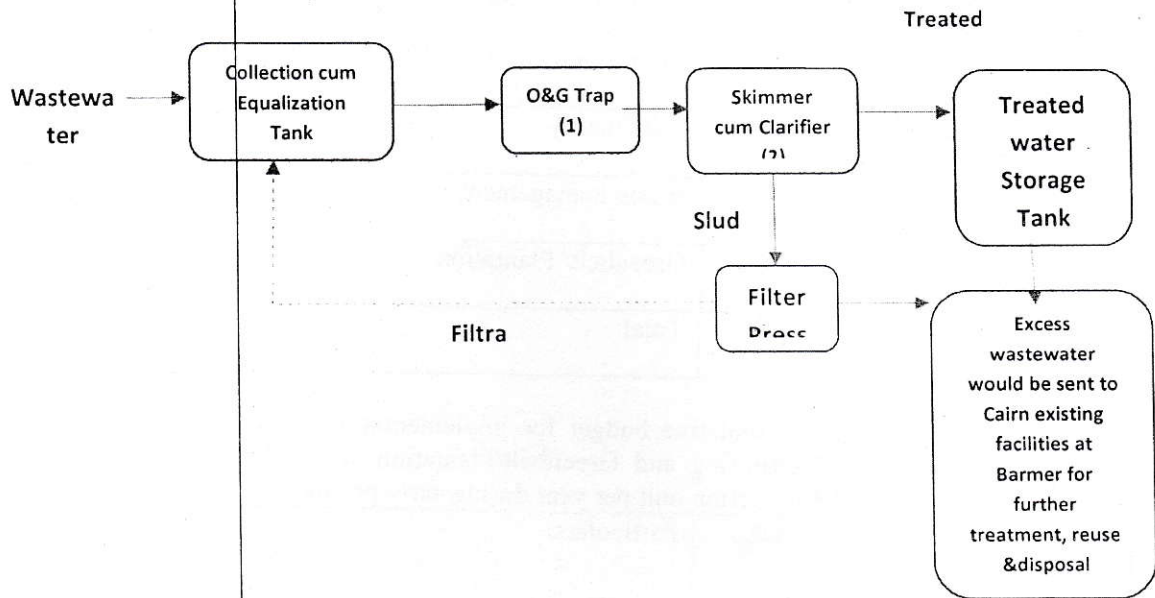
#.	Particulars	Approx. budget/ EPU/Year (INR) in Lakh
1.	Air quality management	10.0
2.	Noise monitoring	
3.	Surface and Ground Water Quality	
4.	Soil Quality	
5.	Waste management	0.5
6.	Greenbelt/ Plantation	0.5
	Total:	11.0

#### Drilling Wastewater Management

Wastewater estimated to be generated from each well drilling would be 40 KLD which will be treated onsite in modular and mobile effluent treatment plant (ETP). Wastewater will be collected and treated in ETP of 50 KLD capacity. ETP would consist of physicochemical treatment, i.e. oil & grease separator; skimmer cum clarifier; and filtrations. Treated effluent/ water would be reused/ recycled to the maximum extent possible onsite for dust suppression, green belt/ plantation, fire water, drilling mud preparation, housekeeping, etc.

As an additional option, wastewater would be sent to the existing effluent treatment facilities (capacity 124450 KLD) of Cairn Oil & Gas at Mangala Processing Terminal (MPT) which is a centralize facility in Barmer District for treatment. The treated effluent will be reused for reinjection into the reservoir (to maintain the pressure for sustaining production) to the maximum extent possible and the excess treated effluent would be disposed into deep dump well (by reinjection in abandoned well).

Process Flow Diagram – Effluent Treatment Plant (ETP):



Note:

(1): Oil and Grease removal unit would consist of API and TPI separator.

(2) If needed, the clarified water would be subjected to filtration through (sand/charcoal filters) and ultrafiltration followed by RO (reverse osmosis) for onsite reuse/ recycle of the treated effluent.

**Domestic Wastewater Management**

Domestic effluent is collected from toilets, washrooms, kitchen in porta cabins, and connected through pipes to the STP for treatment. Total domestic wastewater would be generated during drilling is 12KLD. Same would be treated in 15KLD modular STP on well site during drilling. Price of 15KLD STP would be approx. 1.5 lakhs.

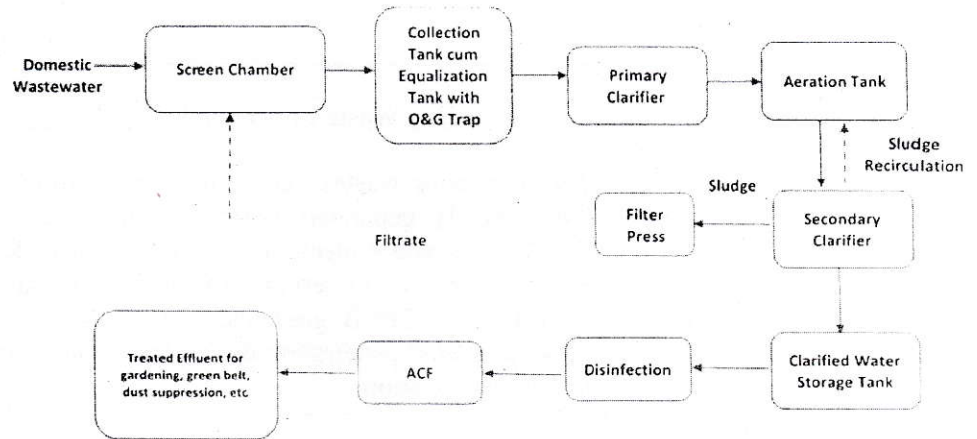
During early production maximum 2KLD domestic wastewater would be generated and treated in modular STP of 10 KLD capacity. Price of 10 KLD STP would be approx. 5 lakhs. Treated domestic wastewater would be used in gardening, green belt, dust suppression, etc.

**Treated Sewage Disposal**

Treated domestic wastewater would be used in gardening, green belt, dust suppression, etc.



Process Flow Diagram – STP



Hazardous Waste generation and disposal details

#	Hazardous Waste	Quantity	Mode of Disposal
<u>During Drilling</u>			
1	Drill cutting excluding those from Water-based mud	1500 ton/well	Collection in HDPE lined pit and disposal in co-processing in cement kiln/ common hazardous waste TSDF/ HW processing facility
2	Drilling Mud containing oil	500 ton/well	
3	Sludge containing oil	500 ton/well	
4	Spent Chemicals	0.6 ton/well	
5	Used or Spent oil	2 ton/well	Disposal with registered recyclers
<u>During Early Production</u>			
6	Cotton/filters contaminated with oil	0.3 ton/year	Collection in HDPE lined pit and disposal in co-processing in cement kiln/ common hazardous waste TSDF/ HW processing facility
7	Empty barrels/containers/liners contaminated with hazardous chemicals/waste	50 nos./year	
8	ETP Sludge	120 ton/year	
9	Oily Sludge	20 ton/year	Collection in HDPE lined pit and disposal in co-processing in cement kiln/ common hazardous waste TSDF/ HW processing facility
10	Slop Oil	2 ton/year	
11	Spent Carbon	3 ton/year	
12	Used or Spent oil	1 kl/year	Used oil will be sent RSPCB/ CPCB authorized recyclers

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		13	Wastes or residues containing oil	0.5 kl/year	Collection in HDPE lined pit and disposal in co-processing in cement kiln/common hazardous waste TSDf/HW processing facility																														
		<p align="center"><u>Hazardous Waste Collection Pit for Temporary Storage During drilling:</u></p> <p>The hazardous wastes i.e. mainly drill cuttings associated with synthetic base mud (SBM) generated during drilling would be collected temporarily in hazardous waste collection pit made of PCC &amp; HDPE geomembrane. The Pit would be secured impervious by laying 1.5 mm thickness HDPE geo-membrane liner (as per CPCB guidelines) above the compacted Clay layer which will prevent ground penetration of any hazardous waste material stored in the pit for temporary duration.</p> <p>Finally, hazardous waste would be sent to cement kiln for co processing or sent to TSDf /HW processing facility for disposal for sustainable waste disposal. Efforts would be made to immediate disposal of drill cutting generated after passing through centrifuge &amp; cutting drier and from the cutting coral itself. This practice would avoid requirement for temporary storage at drill/ well site.</p>																																	
8	CSR /ESR Activities	NA																																	
9	Green Belt/ Plantation	<ul style="list-style-type: none"> <li>• 33% of its plant areas / permanent facilities (which would be developed subsequently after the commercially viable successful discovery) will be developed as greenbelt. Peripheral greenbelt will be developed in a phase wise manner by undertaking Source &amp; Receptor Approach based Plantation around the facilities to mitigate the impact of fugitive emission.</li> <li>• Tree plantation will be done at a spacing of 2.5 x 2.5 m. About 1500 trees per ha will be planted.</li> <li>• Species considered for greenbelt development are:</li> </ul> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Scientific Name</th> <th>Local Name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Accacia nilotica</td> <td>Babul</td> </tr> <tr> <td>2</td> <td>Azardirachta indica</td> <td>Neem</td> </tr> <tr> <td>3</td> <td>Pongamia pinnata</td> <td>Karanj</td> </tr> <tr> <td>4</td> <td>Ziziphus nimmularia</td> <td>Jhar Beri</td> </tr> <tr> <td>5</td> <td>Punica granatum</td> <td>Anar</td> </tr> <tr> <td>6</td> <td>Parkinsonia aculeata</td> <td>Ram babul</td> </tr> <tr> <td>7</td> <td>Phoenix sylvestris</td> <td>Khejur</td> </tr> <tr> <td>8</td> <td>Tamarix aphylla</td> <td>Lal Jhar</td> </tr> <tr> <td>9</td> <td>Ziziphus jujube</td> <td>Ber</td> </tr> </tbody> </table>				Sl. No.	Scientific Name	Local Name	1	Accacia nilotica	Babul	2	Azardirachta indica	Neem	3	Pongamia pinnata	Karanj	4	Ziziphus nimmularia	Jhar Beri	5	Punica granatum	Anar	6	Parkinsonia aculeata	Ram babul	7	Phoenix sylvestris	Khejur	8	Tamarix aphylla	Lal Jhar	9	Ziziphus jujube	Ber
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10	Budgetary Breakup for Labour	<p>Estimated Budgetary Breakup for Labour Welfare: The following provisions will be made towards Labour Welfare during drilling:</p> <table border="1"> <thead> <tr> <th>#.</th> <th>Particulars</th> <th>Estimated Budget per well(in Lakhs)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Safe drinking water for workforce</td> <td rowspan="4">6.0 Lakhs/Well (Approx.)</td> </tr> <tr> <td>2.</td> <td>Sanitation facilities</td> </tr> <tr> <td>3.</td> <td>First aid facility and ambulance for emergency medical evacuation</td> </tr> <tr> <td>4.</td> <td>PPEs (Safety Boots, Helmet, Mask, ear plugs, gloves, etc.)</td> </tr> </tbody> </table>				#.	Particulars	Estimated Budget per well(in Lakhs)	1.	Safe drinking water for workforce	6.0 Lakhs/Well (Approx.)	2.	Sanitation facilities	3.	First aid facility and ambulance for emergency medical evacuation	4.	PPEs (Safety Boots, Helmet, Mask, ear plugs, gloves, etc.)																		
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	5. Environmental, safety & occupational health and wellness awareness program	
	The following provisions will be made towards Labour Welfare during Early Production:	
	#. Particulars	Estimated Budget per EPU per Year(in Lakhs)
	1. Safe drinking water for workforce	2.0 Lakhs/ EPU/Year (Approx.)
	2. Sanitation facilities	
	3. First aid facility and ambulance for emergency medical evacuation	
	4. PPEs (Safety Boots, Helmet, Mask, ear plugs, gloves, etc.)	
	5. Environmental, safety & occupational health and wellness awareness program	

3. The SEAC Rajasthan after due considerations of the relevant documents submitted by the project proponent and additional clarifications/documents furnished to it have recommended for Environmental Clearance with certain stipulations. The SEIAA Rajasthan after considering the proposal and recommendations of the SEAC, Rajasthan in its 4.61<sup>st</sup> Meeting held on 24.06.2021 hereby accord Environmental Clearance to the project as per the provisions of Environmental Impact Assessment Notification 2006 and its subsequent amendments, subject to strict compliance of the terms and conditions as follows:

**I. Statutory compliance:**

- i. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
- ii. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- iii. The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (incase of the presence of schedule-I species in the study area)
- iv. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
- v. Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016, Solid Waste Management Rules, 2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to.
- vi. The project proponent shall obtain and adhere to statutory clearance under the Coastal Regulation Zone Notification, 2011, as applicable

**II. Air quality monitoring and preservation**

- i. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with
- ii. To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. Sulphur content should not exceed

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0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.

- ii. 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 each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- iv. Ambient air quality shall be monitored at the nearest human settlements as per the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 for PM10, PM2.5, SO2, NOX, CO, CH4, HC, Non-methane HC etc.
- v. During exploration, production, storage and handling, the fugitive emission of methane, if any, shall be monitored using Infra-red camera/ appropriate technology.
- vi. The project proponent also to ensure trapping/storing of the CO2 generated, if any, during the process and handling.
- vii. Approach road shall be made pucca to minimize generation of suspended dust

### **III. Water quality monitoring and preservation**

- i. As proposed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged to any surface water body, sea and/or on land. Domestic sewage shall be disposed off through septic tank/soak pit.
- ii. The effluent discharge shall conform to the standards prescribed under the Environment (Protection) Rules, 1986, or as specified by the State Pollution Control Board while granting Consent under the Air/Water Act, whichever is more stringent.
- iii. Total fresh water requirement shall not exceed the proposed quantity or as specified by the Committee. Prior permission shall be obtained from the concerned regulatory authority/CGWA in this regard.
- iv. The company shall construct the garland drain all around the drilling site to prevent runoff of any oil containing waste into the nearby water bodies. Separate drainage system shall be created for oil contaminated and non-oil contaminated. Effluent shall be properly treated and treated wastewater shall conform to CPCB standards.
- v. Drill cuttings separated from drilling fluid shall be adequately washed and disposed in HDPE lined pit. Waste mud shall be tested for hazardous contaminants and disposed according to HWMH Rules, 2016. No effluent/drilling mud/drill cutting shall be discharged/dropped off into nearby surface water bodies. The company shall comply with the guidelines for disposal of solid waste, drill cutting and drilling fluids for onshore drilling operation notified vide GSR.546(E) dated 30th August, 2005.

### **IV. Noise monitoring and prevention**

- i. The company shall make all arrangements for control of noise from the drilling activity. Acoustic enclosure shall be provided for the DG sets along with the adequate stack height as per CPCB guidelines.
- ii. 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.
- iii. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).

### **V. Energy Conservation measures**

- i. The energy sources for lighting purposes shall preferably be LED based.

### **VI. Waste management**



- i. Oil spillage prevention and mitigation scheme shall be prepared. In case of oil spillage/contamination, action plan shall be prepared to clean the site by adopting proven technology. The recyclable waste (oily sludge) and spent oil shall be disposed of to the authorized recyclers.
- ii. Oil content in the drill cuttings shall be monitored by some Authorized agency and report shall be sent to the Ministry's Regional Office

#### **VII. Safety, Public hearing and Human health issues**

- i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- ii. Blow Out Preventer system shall be installed to prevent well blowouts during drilling operations. BOP measures during drilling shall focus on maintaining well bore hydrostatic pressure by proper pre-well planning and drilling fluid logging etc.
- iii. Company shall prepare operating manual in respect of all activities, which would cover all safety & environment related issues and measures to be taken for protection. One set of environmental manual shall be made available at the drilling site/ project site. Awareness shall be created at each level of the management. All the schedules and results of environmental monitoring shall be available at the project site office. Remote monitoring of site should be done.
- iv. On completion of drilling, the company has to plug the drilled wells safely and obtain certificate from environment safety angle from the concerned authority
- v. The company shall take measures after completion of drilling process by well plugging and secured enclosures, decommissioning of rig upon abandonment of the well and drilling site shall be restored the area in original condition. In the event that no economic quantity of hydrocarbon is found a full abandonment plan shall be implemented for the drilling site in accordance with the applicable Indian Petroleum Regulations
- vi. The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. Possibility of using ground flare shall be explored. At the place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during operation.
- vii. Training shall be imparted to all 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.
- viii. The company shall develop a contingency plan for H2S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H2S detectors in locations of high risk of exposure along with self containing breathing apparatus
- ix. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- x. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- xi. The Company shall carry out long term subsidence study by collecting base line data before initiating drilling operation till the project lasts. The data so collected shall be submitted six monthly to the Ministry and Regional Office.

#### **VIII. Corporate Environment Responsibility**




- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms /conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
- v. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

#### **IX. Miscellaneous**

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- v. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vi. The project proponent 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, commencing the land development work and start of production operation by the project.
- vii. Restoration of the project site shall be carried out satisfactorily and report shall be sent to the Ministry's Regional Office
- vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.




- viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- viii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- ix. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- x. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xi. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- xiii. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xiv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

  
(P.K. Upadhyay)  
Member Secretary,  
SEIAA, Rajasthan.

No. F1 (4)/SEIAA/SEAC-Raj/Sectt/Project /Cat. 1(b))B2 (19122)/2019-20 Dated:

Copy to following for information and necessary action:

1. Secretary, Ministry of Environment, Forest & Climate Change, Govt. of India, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi-110003.
2. Principal Secretary, Environment Department, Rajasthan, Jaipur.
3. Sh. R.K. Meena, IAS (Retd.), B-75, Shankar Vihar, 50 Feet Gaitore Road, Sawai Gaitore, Jaipur
4. Dr. Anil Kumar Goel IFS (Retd.), Forest Colony, Sector 4, Jawahar Nagar, Jaipur.
5. Member Secretary, Rajasthan State Pollution Control Board, Jaipur for information & necessary action and to display this sanction on the website of the Rajasthan Pollution Control Board, Jaipur.
6. Member Secretary, SEAC Rajasthan.
7. The CCF, Regional Office, Ministry of Environment & Forests, RO(CZ), Kendriya Bhawan, 5<sup>th</sup> Floor, Sector 'H', Aliganj, Lucknow-226 020.
8. Environment Management Plan- Division, Monitoring Cell, Environment, Forest & Climate Change, Govt. of India, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi-110003.
9. Sh. Jagbir Singh Manral, ACP, Department of Environment, Government of Rajasthan, Jaipur with the direction to upload the copy of this Environment Clearance on the website.

  
M.S. SEIAA, (Rajasthan)