

L. No. RV/25/IM/EE/46

Date : 12.07.2025

To,  
The Environmental Engineer  
Regional Office-Kakinada  
Andhra Pradesh Pollution Control Board  
Plot No.2 IDA, Ramanayya Peta,  
Kakinada, Andhra Pradesh- 533 005

Sir,

**Subject:** Submission of Annual Environmental Statement (Form V) as per Rule 14 of The Environment (Protection) Rules, 1986 for Ravva Operations, Vedanta Limited-Cairn Oil & Gas, Sursani Yanam village, Dr. B. R. Ambedkar Konaseema, Andhra Pradesh -533213

Please find enclosed herewith the Annual Environmental Statement (Form V) for Ravva Operations, PKGM-1 Block Andhra Pradesh for the period from 1<sup>st</sup> April 2024 to 31<sup>st</sup> March 2025.

**For Vedanta Limited - Cairn Oil & Gas**

JK



**Installation Manager- Ravva**

Enclosure:

1. "Annual Environmental Statements - Form V" for Ravva Operations for FY 2024-25.
2. Pollution abatement and conservation.
3. Corporate Social Responsibility.

**VEDANTA LIMITED**

**Cairn Oil & Gas:** Ravva Onshore Terminal, Surasani Yanam-533212, Uppalaguptam Mandal, Dr. B.R. Ambedkar Konaseema District, Andhra Pradesh, India | Mobile No.9849623600 | www.cairnindia.com

**Registered Office:** Vedanta Limited, 1<sup>st</sup> Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai - 400093, Maharashtra, India | T +91 22 664 34500 | F +91 22 664 34530 | www.vedantalimited.com

CIN: L13209MH1965PLC291394

**FORM V**  
(See Rule 14)  
**ENVIRONMENTAL STATEMENT**

**ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING 31<sup>ST</sup> MARCH 20245**  
**FOR**

**RAVVA ONSHORE TERMINAL**  
**PKGM-1 BLOCK RAVVA HYDROCARBON FIELD**  
**VILLAGE: S'YANAM DIST: DR. B. R. AMBEDKAR KONASEEMA ANDHRA PRADESH**

**PART - A**

I. Name and address of the owner / occupier of the industry operation of process	<b>Installation Manager – Ravva</b> M/s Vedanta Limited, Cairn Oil & Gas Village: Surasaniyanam, Mandal: Uppalaguptam District: Dr. B. R. Ambedkar Konaseema, Andhra Pradesh
II. Industry category	Red Category
III. Production capacity – Units	Ravva Onshore Terminal Crude Oil Processing Capacity 50,000 BoPD Natural Gas-2.3 Standard Million m3/day
IV. Year of establishment	1993
V. Date of the last environmental statement submitted	6 <sup>th</sup> September, 2023

**PART - B**

Water and Raw Material Consumption:

i) Water consumption m<sup>3</sup>/d

Purpose	Quantity in m <sup>3</sup> /d	Remarks
Process	<b>3545.15 m3/day</b>	Saline Borewell water abstracted to comingle with Produced water for injection purpose to maintain reservoir pressure and void replacement.
Cooling	<b>10.83 m3/day</b>	Cooling tower water consumption for cooling of Produced water before feeding it into Effluent Treatment Plant.
Domestic	<b>191.11 m3/day</b>	Water for domestic purposes is mainly consumed at the administrative buildings, sanitary purposes and green belt maintenance etc. within and surrounding Ravva Terminal. Sewage Treatment Plant (STP) at Ravva, treated sewage water used for greenbelt maintenance and Fresh water also being used for greenbelt at LQ.
<b>Total</b>	<b>3747.09 m3/day</b>	

Name of products	Process water consumption per unit of product output	
	During the previous financial year	During the current financial year
<b>Crude Oil</b>	1.07 m <sup>3</sup> of water being consumed for one Ton of Hydrocarbon production. The total ground water abstraction for injection purpose during FY 23-24 is 1016666 KL to maintain the reservoir pressure. Produced water mixed with saline groundwater.	1.39 m <sup>3</sup> of water being consumed for one Ton of Hydrocarbon production. The total ground water abstraction for injection purpose during FY 24-25 is 1297525 KL to maintain the reservoir pressure. Produced water mixed with saline groundwater.

## (ii) Raw material consumption

Name of Raw Materials	Name of Products	Consumption of raw material per unit of output	
		During the previous financial year	During the current financial year
There are no raw materials involved in the production of Crude Oil. The well fluids consisting of oil, water and associated gas is extracted from the hydrocarbon subsurface reservoir and flows directly to the Ravva for phase separation and processing.  Few chemicals are used for fluid separation and raw water treatment.		NA	NA

Note: For upstream industry, chemicals are consumed at various concentrations and depending on the subsurface behavior, such as to control the corrosion, emulsification, oxygen level, bacterial growth etc. Therefore, refer **Annexure – 1** for the various chemical consumption details.

## PART - C

POLLUTANTS	QUANTITY OF POLLUTANTS DISCHARGED (MASS/DAY)	CONCENTRATIONS OF POLLUTANTS IN DISCHARGES (MASS / VOLUME)				PERCENTAGE OF VARIATION FROM PRESCRIBED STANDARDS WITH REASONS	
		Parameter	Max	Min	Prescribed Std.		
A) Treated Effluent	Average 1128.41 KL/Day Effluent being discharged to Marine outfall	TSS (mg/l)	48	29.2	100	Within the specified limits of APPCB.	
		BOD (mg/l)	32.5	21	30		
		Oil and Grease (mg/l)	8.45	BDL (DL: 4.0)	10		
B) Air Emissions from Gas Turbines & DG Sets	Name of Source			Concentration of Pollutant (mg/ Nm <sup>3</sup> )		The stack emissions are within the prescribed limits of APPCB.	
	Name of Source	Quantity of Pollutant (KG/Day)			PM		Stand.,
		PM	SO <sub>2</sub>	NO <sub>x</sub>			
	G 850 A	9.35	<10	25.86	115		
	G 850 B	10.11	<10	18.72			
	G 850 C	2.48	<10	3.41			

## PART - D

## HAZARDOUS WASTE

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

Hazardous Waste	Total Quantity			
	During the previous financial year		During the current financial year	
a) From Processes	Hazardous Waste Description	Generation Quantity (Kgs/ Liters)	Hazardous Waste Description	Generation Quantity (Kgs/ Liters)
	Oily Sludge (1.3 Schedule 1)	Nil	Oily Sludge (1.3 Schedule 1)	0

Hazardous Waste	Total Quantity			
	During the previous financial year		During the current financial year	
	Waste oil (Tank bottom oil/ Sludge, oil emulsions) (3.3. Schedule 1)	Nil	Waste oil (Tank bottom oil/ Sludge, oil emulsions) (3.3. Schedule 1)	Nil
	ETP Sludge containing hazardous constituents (34.5 Schedule 1)	15430 Kgs	ETP Sludge containing hazardous constituents (34.5 Schedule 1)	3490 Kgs
	Used Oil/ Spent Oil (5.1 Schedule 1)	16130 L	Used Oil/ Spent Oil (5.1 Schedule 1)	19080 L
	Filters contaminated with oil/chemicals (3.3 Schedule 1)	1210 Kgs	Filters contaminated with oil/chemicals (3.3 Schedule 1)	630 Kgs
	Waste/Residues containing Oil (5.2 Schedule 1)	Nil	Waste/Residues containing Oil (5.2 Schedule 1)	Nil
	Waste chemical (PPD, glycol)	Nil	Waste chemical (PPD, glycol)	Nil
	Paint Sludge (21.1 Schedule 1)	450 Kgs	Paint Sludge (21.1 Schedule 1)	370 Kgs
	Spent Carbon (34.2 Schedule 1)	Nil	Spent Carbon (34.2 Schedule 1)	Nil
	Oily rags (5.2 Schedule 1)	4450 Kgs	Oily rags (5.2 Schedule 1)	4400 Kgs
	Discarded containers/ barrels/ liners contaminated with hazardous waste chemicals (33.3 Schedule 1)	Nil	Discarded containers/ barrels/ liners contaminated with hazardous waste chemicals (33.3 Schedule 1)	Nil
	Insulation wool/ thermocol/ PUF	Nil	Insulation wool/ thermocol/ PUF	Nil
	Drill Cuttings containing Oil (2.1 Schedule 1)	Nil	Drill Cuttings containing Oil (2.1 Schedule 1)	Nil
	Sludge Containing Oil (2.2 Schedule 1)	Nil	Sludge Containing Oil (2.2 Schedule 1)	Nil
	Drilling mud and Other Drilling waste (2.3 Schedule 1)	Nil	Drilling mud and Other Drilling waste (2.3 Schedule 1)	Nil
(B) From pollution control facilities	Sludge Generated from ETP Operations	15430 Kgs	Sludge Generated from ETP Operations	0 Kgs
(C) From Other sources	NIL		NIL	

**PART - E**

**SOLID WASTE**

Solid Waste	Total Quantity																																									
	During the previous financial year	During the current financial year																																								
(a) From process	Mentioned in other waste category	Refer Part D for Hazardous Waste and other solid waste mentioned below																																								
(b) From Pollution control facility (STP Sludge)	The Bio-sludge generated is used as manure for greenbelt maintenance.	The Bio-sludge generated is used as manure for greenbelt maintenance.																																								
(c) Other wastes from Health Center, Warehouse, Living quarters and plant housekeeping etc.,	<p>Quantity wise details of different scrap material for FY 2023-24 is given as below</p> <table border="1"> <thead> <tr> <th>Waste type</th> <th>Quantity in Kgs</th> </tr> </thead> <tbody> <tr> <td>Food waste</td> <td>1980</td> </tr> <tr> <td>Metal scrap</td> <td>3730</td> </tr> <tr> <td>Paper waste</td> <td>1770</td> </tr> <tr> <td>Plastic waste</td> <td>670</td> </tr> <tr> <td>Construction and demolition waste</td> <td>0</td> </tr> <tr> <td>Glass</td> <td>660</td> </tr> <tr> <td>Rubber</td> <td>850</td> </tr> <tr> <td>Wood</td> <td>2400</td> </tr> <tr> <td><b>Total</b></td> <td><b>12,060 Kgs</b></td> </tr> </tbody> </table>	Waste type	Quantity in Kgs	Food waste	1980	Metal scrap	3730	Paper waste	1770	Plastic waste	670	Construction and demolition waste	0	Glass	660	Rubber	850	Wood	2400	<b>Total</b>	<b>12,060 Kgs</b>	<p>Quantity wise details of different scrap material for FY 2024-25 is given as below</p> <table border="1"> <thead> <tr> <th>Waste type</th> <th>Quantity in Kgs</th> </tr> </thead> <tbody> <tr> <td>Food waste</td> <td>1790</td> </tr> <tr> <td>Metal scrap</td> <td>3130</td> </tr> <tr> <td>Paper waste</td> <td>1880</td> </tr> <tr> <td>Plastic waste</td> <td>600</td> </tr> <tr> <td>Construction and demolition waste</td> <td>0</td> </tr> <tr> <td>Glass</td> <td>520</td> </tr> <tr> <td>Rubber</td> <td>560</td> </tr> <tr> <td>Wood</td> <td>2410</td> </tr> <tr> <td><b>Total</b></td> <td><b>10890 Kgs</b></td> </tr> </tbody> </table> <p>Category wise quantity of biomedical waste generated in the Health Center is provided in <b>Annexure 3</b></p>	Waste type	Quantity in Kgs	Food waste	1790	Metal scrap	3130	Paper waste	1880	Plastic waste	600	Construction and demolition waste	0	Glass	520	Rubber	560	Wood	2410	<b>Total</b>	<b>10890 Kgs</b>
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(1) Quantity recycled or re-utilized within the unit.	Nil	Nil																																								
(2) Sold (Wastepaper, metal waste, plastic wastes, packaging material, wooden pallets, drinking water bottles etc. are handover to recyclers)	Nil	Nil																																								
(3) Disposed	Segregated solid waste sold to scrap dealers through auction basis time to time.	Segregated solid waste sold to scrap dealers through auction basis time to time.																																								

## PART - F

Please specify the characterizations (in terms of composition and quantum) of Hazardous and non-hazardous wastes and indicate disposal practice adopted for both these categories of wastes.

Hazardous Waste: As per Hazardous Waste Authorization. **Refer Part D** for details.

Non-hazardous waste: Domestic waste is generated from the operation and development facilities which mostly consist of bio-degradable organic matter and recyclable wastes. The recyclable wastes are handover to scrap vendor for further recycling process. Food waste is treated in Organic Waste Convertor for composting and manure is being used in green belt development.

## PART - G

### **Impact of the pollution abatement measures taken on conservation of natural resource:**

Details of pollution abatement measures have been described in a separate document (**Refer Enclosure -1**).

Sewage Treatment Plant of capacity 175 KLD at Ravva Terminal is operational for the treatment of sewage water generated at terminal and living quarters.

Organic Waste Convertor for the treatment and conversion of food waste into bio-manure is available at Operation Base.

Water produced in crude extraction process is treated in water filtration unit and re-injected into the reservoir to aid in reservoir pressure support.

Recharge pit of capacity 35000 m<sup>3</sup> is available at Ravva for the rainwater and ground water recharge.

Green belt development: 136 Acres of green belt developed in and around the facility to control the noise and air pollution levels generated from Ravva and associated facilities.

## PART - H

### **Additional measures/investment proposal for environmental protection including abatement/prevention of pollution.**

There are several voluntary environmental initiatives that have been taken by Cairn to promote environmental protection and prevention of pollution for operations and drilling activities. Description of these initiatives has been provided in **Enclosure-1**.

## PART - I

### **Any other particulars for improving the quality of environment:**

We have undertaken a project to increase the reinjection rate of produced water by optimizing the Induced Gas Flotation (IGF) operation, we successfully raised the reinjection rate from 90% to 91%, which has led to a substantial reduction in Wastewater disposal into the environment.

**Date: 12.09.2024**

**Installation Manager - Ravva**

**ANNEXURE – 1: CHEMICAL CONSUMPTION FOR FY 24-25**

<b>Chemicals - Monthly consumption 2024-2025</b>													
<b>Chemical Description</b>	<b>UOM</b>	<b>Apr'24</b>	<b>May'24</b>	<b>Jun' 24</b>	<b>Jul'24</b>	<b>Aug'24</b>	<b>Sep'24</b>	<b>Oct'24</b>	<b>Nov'24</b>	<b>Dec'24</b>	<b>Jan'25</b>	<b>Feb'25</b>	<b>Mar'25</b>
<b>Demulsifier</b>	Kgs	1341	1000	976	1647	1600	1437	1444	1403	1382	1350	1234	1349
<b>Biocide I</b>	Kgs	7211	4699	5938	5855	4785	4475	6596	4217	6062	4630	5322	6067
<b>Biocide II</b>	Kgs	2022	4360	4256	1596	4169	2341	4469	2128	2341	2128	2447	4469
<b>Water Corrosion inhibitor</b>	Kgs	1513	111	926	0	1830	2271	2217	1819	1854	1880	1839	1985
<b>Water Scale Inhibitor</b>	Kgs	6036	245	2814	8181	7297	7465	7177	6702	6500	2414	6123	6773
<b>Oil Scale Inhibitor</b>	Kgs	4069	0	0	2662	6020	3186	5268	4993	5178	1581	4586	3530
<b>Oil Corrosion inhibitor</b>	Kgs	3951	0	0	6999	5767	1801	3967	3882	3925	4170	3514	3160
<b>Gas Corrosion Inhibitor</b>	Kgs	0	0	0	0	0	0	0	0	0	0	0	134
<b>Oxygen Scavenger</b>	Kgs	0	0	0	0	0	523	330	82	63	285	528	523
<b>H2S Scavenger</b>	Lit												
<b>Hydrochloric Acid</b>	Lit	150	150	150	150	150	150	150	150	150	150	100	100
<b>Caustic Soda</b>	Kgs	50	50	50	50	50	50	50	50	50	50	50	50
<b>Anti Scalent</b>	Kgs	40	40	40	40	40	40	40	40	40	40	30	40
<b>Dewtreat 501 (Corrosion inhibitor)</b>	Kgs	9	9	8	9	-	-	10	7	7	6	6	6
<b>Dewtreat 511 (Scale inhibitor)</b>	Kgs	9	9	8	9	-	-	9	8	8	5	5	5

<b>Dewtreat 701 (Dispersant)</b>	Kgs	4	4	4	4	-	-	4	4	4	4	4	4
<b>Dewtreat 704 (Non-Oxidising Biocide-1)</b>	Kgs	2	2	2	2	-	-	2	2	2	2	2	2
<b>Dewtreat 705 (Non-Oxidising Biocide-2)</b>	Kgs	2	2	2	2	-	-	2	2	2	2	2	2
<b>Soda Ash</b>	Kgs	5	5	5	5	5	5	5	5	5	5	5	5
<b>Urea</b>	Kgs	750	775	750	775	775	750	775	750	775	775	710	775
<b>DAP</b>	Kgs	450	465	450	465	465	450	465	450	465	465	420	465
<b>Water clarifier</b>	Kgs	978	1073	959	938	1071	700	798	695	583	524	473	633

**ANNEXURE – 2**

**EFFLUENT WASTEWATER QUANTITY IN KL**

<b>Months</b>	<b>Wastewater</b>
	<b>Treated Effluent (KL)</b>
Apr-24	33003
May-24	36829
Jun-24	36773
Jul-24	46321
Aug-24	56479
Sep-24	37823
Oct-24	34983
Nov-24	33879
Dec-24	24050
Jan-25	23447
Feb-25	21836
Mar-25	26448
<b>Total</b>	<b>411,871 KL</b>

**DISCHARGED WATER QUALITY**

<b>S. No</b>	<b>Para meter</b>	<b>Unit</b>	<b>Results (ETP Outlet)</b>			<b>CPCB Standard</b>
			<b>Maximum</b>	<b>Minimum</b>	<b>Average</b>	
1	Total Suspended Solids	mg/l	48	29.20	30.50	<b>100</b>
2	BOD (3 days at 27 °C)	mg/l	32.45	21	22.66	<b>30</b>
3	COD	mg/l	147	161	150.91	<b>200</b>
4	Oil & Grease	mg/l	8.25	BDL(DL:4.0)	7.61	<b>10</b>

**ANNEXURE – 3**

**BIO-MEDICAL WASTE (BMW) GENERATION RECORDS**

**Site name: Vedanta Limited – Cairn Oil and Gas**

**Reporting Period: April 2024 to March 2025**

**Location: Ravva Onshore Terminal, S. YANAM**

S · N o	BMW Cate gory	Type of Waste	U nit s	Autho rized Quan tity	Qty. of waste Generated & Disposed from OHC at Ravva Onshore Terminal 2024-25											Dispo s al Meth od and Bio med ical waste Autho riza tion		
					A pr - 24	M ay - 24	Ju n- 24	J ul - 24	A ug - 24	Se p- 24	Oc t- 24	No v- 24	De c- 24	Ja n- 25	Fe b- 25		M ar - 25	Tot al (kg s)
1	Yellow	Expired and discarded medicines/ Soiled waste/ Chemical/ Liquid waste	Kg s	6.05 Kgs/d ay	0.5 45	0.5 20	0.5 51	0.5 7	0.5 45	0.6 05	0.5 4	0.5 00	1.4 05	1.5	2.0 00	0.8 00	10. 04	All BMW generat ed are dispose d to Andhra Pradesh Pollutio n Control Board authoriz ed disposal facility:
2	Red	Contaminated waste (recyclable)	Kg s	0.1 Kgs/d ay	-	-	-	-	0.0 09	0.0 38	0.0 21	0.0 04	0.1 2	0.2 25	0.2 70	0.1 85	0.8 72	
3	White Trans lucent	Waste sharp including metals	Kg s	0.5 Kgs/d ay	-	-	-	-	0.0 05	0.0 16	0.0 12	0.0 02	0.0 05	0	0	0	0.0 35	M/s EVB technol ogies Pallaka diyam, Kanava ram Rajanag aram, East Godava ri
4	Blue	Glassware	Kg s	0.1 Kgs/d ay	-	-	-	-	0.0 1	0.0 32	0.0 18	0.0 03	0.0 09	0.0 12	0.0 23	0.0 15	0.1 22	
<b>Total (kgs)</b>					<b>0.5 45</b>	<b>0.5 20</b>	<b>0.5 51</b>	<b>0.5 7</b>	<b>0.5 69</b>	<b>0.6 91</b>	<b>0.5 91</b>	<b>0.5 09</b>	<b>1.5 39</b>	<b>1.7 37</b>	<b>2.2 93</b>	<b>1.0 00</b>	<b>11. 074</b>	