



**SEIL Energy India Limited**  
(Formerly Sembcorp Energy India Limited)  
CIN: U40103HR2008PLC095648  
Regd. Office: Building 7A, Level 5,  
DLF Cyber City, Gurugram – 122002,  
Haryana, India  
Tel: (91) 124 6846700/701,  
Fax: (91) 124 6846710  
Email: cs@seilenergy.com  
Website: www.seilenergy.com

SEIL P1/MoEF&CC/BZA/2024/001  
21<sup>st</sup> June 2024

To  
The Joint Director (S),  
Scientist 'D',  
Ministry of Environment, Forest & Climate Change,  
Integrated Regional Office (IRO),  
Vijayawada- 520010.

Sub.: **Submission of Half Yearly CRZ Compliance Report of SEIL Energy India Limited Project-1 (Formerly Sembcorp Energy India Limited) for the period from October 2023 to March 2024.**

Ref.: **CRZ clearance Letter No. F.No. 11-129/2010–IA – III dated 5<sup>th</sup> December 2011**

Dear Sir,

This has reference to the above subject, we hereby submit the Half Yearly compliance status report for the period from October 2023 to March 2024 along with supporting documents to the conditions specified under CRZ Clearance issued to SEIL Energy India Limited Project-1 (Formerly Sembcorp Energy India Limited), Nellore.

Hope you find the above in order.

Thanking you,

Yours faithfully,  
For M/s. SEIL Energy India Limited

**Pavan Kumar Rao V**  
Head HSE- SEIL

Copy To:

1. The Director, IA.I, MoEF&CC, New Delhi
2. The Regional Director, Regional Office, MoEF&CC, Chennai
3. The Regional Officer, APPCB, Nellore



**UNIVERSAL**  
ENVIRO ASSOCIATES  
SINCE 1994

Recognised by NABL and  
MoEF & CC, GOI, New Delhi.  
Certified by ISO 9001: 2015 and  
ISO 45001 : 2018

Date: 21-06-2024

To,  
The Joint Director (S),  
Scientist 'D',  
Ministry of Environment, Forest & Climate Change,  
Integrated Regional Office (IRO),  
Vijayawada- 520010.

**Sub: Third Party Certificate - Half yearly compliance report on the conditions of CRZ-Reg.**

**Ref: CRZ Letter No: F. No. 11-129/2010 - IA.III dated 05-12-2011.**

Respected Sir/Madam,

With reference to "Costal Regulatory Zone" clearance issued to **M/s. SEIL Energy India Limited - Project-1** (Formerly known as Sembcorp Energy India Limited), Nellore, we hereby certify that **M/s. SEIL Energy India Limited Project-1** has complied with all the conditions imposed in CRZ clearance and attached supporting annexures for the period of October 2023 to March 2024.

Thanking you,

*T. Krishna*

T. KRISHNA

TECHNICAL MANAGER.

Yours faithfully,

For **Universal Enviro Associates,**



Copy To:

1. The Director, IA.I, MoEF & CC, New Delhi
2. The Regional Director, Regional Office, MoEF&CC, Chennai
3. The Regional Officer, APPCB, Nellore

Plot/Shed No.28, Road No.1, Phase-1, IDA Mallapur, Hyderabad - 500 076.

Ph: 040-4890 8772, 98480 16854, e-mail: uea123@gmail.com, www.universalenviro.in

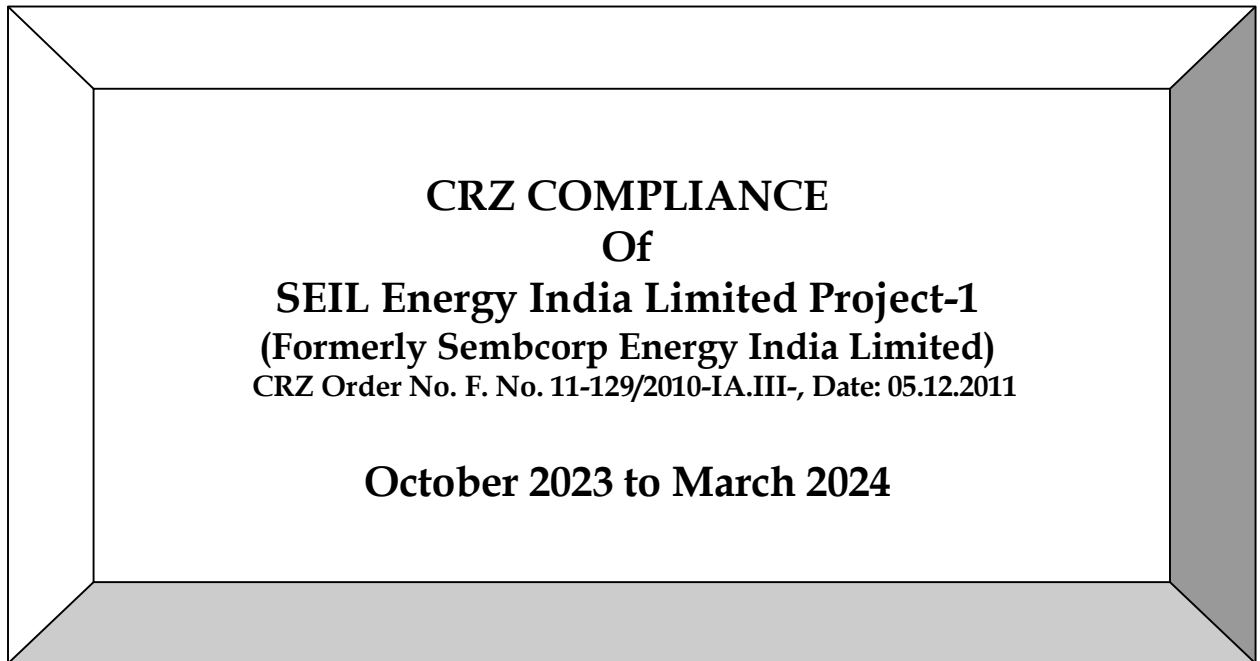
Lab & Works: # 178, Ramakrishna Nagar, Opp. IOCL, Chengicherla, Hyderabad - 500 039.

WTP, STP, ETP & ZLD (Supply, O&M) ! POLLUTION TESTING & ANALYSIS ! ENV. AUDIT ! Other Env. Services

*M/s. SEIL Energy India Limited Project-1,  
(Formerly Sembcorp Energy India Limited)  
Painampuram & Nelaturu (V),  
Muthukur (M),  
SPSR Nellore (Dist.)*

**CRZ Clearance Order No. F. No. 11-129/2010-IA.III-, Date: 05.12.2011**

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Prepared By:  
**Universal Enviro Associates, Hyderabad**  
**Accredited by NABL (TC-6239)**



**CRZ Clearance Order No. F. No. 11-129/2010-IA.III-, Date: 05.12.2011**

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**Background:**



SEIL Energy India Ltd Project-1 [Formerly known as Sembcorp Energy India Limited] is a leading independent thermal power plant situated in Nellore district of Andhra Pradesh.

SEIL Project-1 is currently consisting of 2x660 MW is under operation since March 2015.

The latitude & longitude of North South extremes of Site are 80°08'35.956"E & 14°19'5.211"N and 80°09'16.325"E & 14°21'0.874"N respectively. The location map and key map are shown in Figure-1 & Figure-2 respectively. The 10 km radius topographical map around the project is shown in Figure-3.

CRZ Clearance for the project is obtained from Ministry of Environment & Forests, Vide F.No.11-129/2010-IA.III Dated: 5<sup>th</sup> Dec 2011. The condition wise compliance to the clearance letter is detailed below.

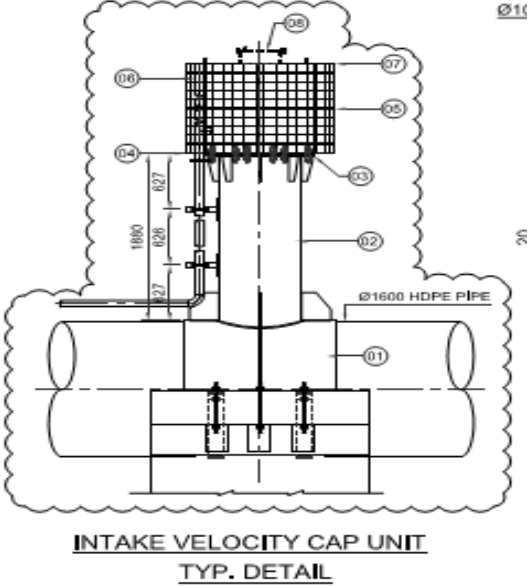
**CRZ Clearance Order No. F. No. 11-129/2010-IA.III-, Date: 05.12.2011**

Compliance of CRZ Conditions		
S No.	Condition	Compliance
<b>Specific Conditions</b>		
i.	"Consent For Establishment" shall be obtained from state pollution control board under air and water act and a copy shall be submitted to the Ministry before start of any construction work at the site.	<b>Complied.</b> Consent For Establishment (CFE) from AP Pollution Control Board has been obtained vide Order. No. 177/PCB/CFE/RO/-NLR/HO/2009-433, Dated: 15/05/2010.
ii.	Cutter suction dredging shall be adopted instead of grab technology so as to control the sediments during dredging.	<b>Complied.</b> Cutter suction dredging was adopted during the said activities.
iii.	Top of the pipeline buried shall be minimum 2 m below the sea bed. The PP shall obtain a certificate of compliance from the agency executing the pipeline, with supporting documentation and shall submit to RO of MoEF and to State PCB.	<p><b>Complied.</b> Pipeline is buried at 2 m below the seabed. The compliance certificate submitted to RO of MoEF and APPCB. Copy of the same is given here.</p>  <p>Date: 24<sup>th</sup> June' 2014            Sub.: Sea Water Intake Pipeline Installation Certificate</p> <p><b>TO WHOMSOEVER IT MAY CONCERN</b></p> <p>Dear Sir,</p> <p>Vide Order No. TPCIL/INFRA-01/SWI &amp; EXT CHP/SUPPLY/001 &amp; TPCIL/INFRA-01/SWI &amp; EXT CHP/SERVICES/002 dated 29-12-10 from TPCIL we have executed the work of laying the sea water intake and outfall pipelines including offshore Intake System and Diffusers for their 2X660MW Coal based Thermal Power Project at Painapuram and Nelatur Villages, Muthukuru Mandal, SPSR Nellore district.</p> <p>Entire offshore intake pipeline and Outfall pipeline of length 2000Mtrs and 1200Mtrs respectively are installed and buried in the sea bed with a minimum back fill of 2Mtrs from top of the pipeline. This is ensured through conducting post pipeline laying and post backfilling offshore depth survey through Ecosounder (Bathymetry survey). Cross section profiles for offshore chainage from LFP to Intake Header and Outfall diffuser has been attached for your reference.</p> <p>Thanking You.</p> <p>For GAYATRI PROJECTS LIMITED</p>  <p>I. S. N. MURTHY            DGM - Projects,            GPL (EPC-PP).</p> <p><small>Gayatri Projects Limited, B1, 9-3-1090, TSI Towers            No. Ehsan Road, Somajiguda, Hyderabad 500 082            CIN: L59999AP1989PLC057289</small></p> <p><small>T +91 40 2321 0250/4284/4296            F +91 40 2339 8435            E gghy@gayatri.co.in            www.gayatri.co.in</small></p>

**CRZ Clearance Order No. F. No. 11-129/2010-IA.III-, Date: 05.12.2011**

S No.	Condition	Compliance
iv.	No effluent from fly ash system is permitted to discharge into the marine system as committed by PP. The effluent from fly ash shall be treated and the entire quantity shall be recycled in the cooling tower makeup etc., and suitable meter shall be installed to record the quantity of effluent recycled.	<b>Complying.</b> No effluent from fly ash system is discharged into marine water. The entire effluent water from ash pond is collected and recycled. Flow Meters are installed for recording the quantity.
v.	Shall implement all the measures as committed to the Ministry vide their letter dated 01.08.2011, as a part of the clarifications submitted by the PP. A copy of these submissions shall be submitted to RO of MoEF.	<b>Complied.</b> SEIL has implemented all the conditions as given in CRZ clearance.
vi.	A suitable STP shall be provided to treat the domestic effluent and treated effluent shall be used for green belt, dual plumbing system etc. Measuring meters shall be provided to record the treated effluent used for different purposes.	<b>Complied.</b> State of Art STP is provided to treat the domestic sewage generated at the site. The treated water is being used for greenbelt development.
vii.	All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF along with half yearly compliance report to MoEF-RO.	<b>Complying.</b> The compliance in matrix format of mitigation measures submitted in EIA report is attached as <b>Annexure-I</b> .
viii	The proponent shall commit himself to be one of the partners / proponents (who have undertaken / will be undertaking similar power projects in the close proximity of site) as and when instructed by the MoEF/State	<b>Noted.</b>

**CRZ Clearance Order No. F. No. 11-129/2010-IA.III-, Date: 05.12.2011**

S No.	Condition	Compliance
	Government Authorities in preparing an overall EIA report comprising both terrestrial / marine EIA components for the region and share the cost of the study and proposed mitigation measures for the coastal stretch as decided by the authorities in the best interest of protecting the environment.	
ix	Appropriate screens and trash bars shall be put in place at the intake to avoid fish entering into the pipe due to heavy quantity of water drawl by once through water intake system.	<p><b>Complied.</b></p> <p>Appropriate screens and trash bars are provided to avoid fish entering into the pipe.</p> 
x	Temperature and salinity level shall be monitored regularly by providing on-line monitoring system at the appropriate location on the outfall system.	<p><b>Complying.</b></p> <p>The parameters are being monitored regularly by providing online EQMS which is connected to APPB/CPCB on real time basis.</p>
xi	Periodic monitoring of coastal water shall be carried out at outfall location.	<p><b>Complying.</b></p> <p>Monthly joint sampling of coastal water is being practiced along with state PCB office. Also Marine Outfall monitoring report</p>

**CRZ Clearance Order No. F. No. 11-129/2010-IA.III-, Date: 05.12.2011**

		conducted by APPCB approved third party consultant is attached as <b>Annexure-II.</b>
<b>S No.</b>	<b>Condition</b>	<b>Compliance</b>
xii.	No construction work other than those permitted in coastal regulation zone notification shall be carried out in coastal regulation zone area.	<b>Complied.</b>
xiii.	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a senior executive.	<b>Complied.</b> SEIL established an Environment Management Cell with suitable qualified personnel under the supervision of Head-HSE.
xiv.	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	<b>Complying.</b>



**CRZ Clearance Order No. F. No. 11-129/2010-IA.III-, Date: 05.12.2011**

<b>General Conditions</b>		
<b>S No.</b>	<b>Condition</b>	<b>Compliance</b>
i.	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	<b>Noted for compliance.</b>
ii.	Full support shall be extended to the officers of this Ministry / regional office at Bangalore by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	<b>Noted for compliance.</b>
iii.	A six – monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bangalore regarding the implementation of the stipulated conditions.	<b>Complying.</b> Latest Half Yearly compliance report submitted vide Letter No: SEIL P1/MoF&CC/BZA/2023/002 dated 27th December 2023.
iv.	Ministry of Environment & Forests or any other competent Authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	<b>Noted.</b>
v.	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with satisfaction of the Ministry.	<b>Noted.</b>
vi.	In the event of change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.	<b>Noted.</b>

**CRZ Clearance Order No. F. No. 11-129/2010-IA.III-, Date: 05.12.2011**

<b>S No.</b>	<b>Condition</b>	<b>Compliance</b>
vii.	The project proponents shall inform the regional office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	<b>Complied and communicated.</b>
viii.	A copy of the clearance letter shall be marked to concerned Panchayat / local NGO, if any, from whom any suggestions / representation has been made received while processing the proposal.	<b>Complied.</b>
ix.	Tamil Nadu Pollution Control Board shall display a copy of the clearance letter at the Regional Office, district industries centre and Collector's Office/ Tahsildar's office for 30 days.	<b>Noted.</b> Copy of compliance has been submitted to APPCB.
7.	These stipulations would be enforced among others under the provisions of water (prevention and control of pollution) Act 1974, the air (prevention and control of pollution) Act 1981, the environment (protection) Act, 1986, the public liability (Insurance) Act 1991 and EIA notification 1994, including the amendments and rules made thereafter.	<b>Noted.</b>
8.	All other statutory clearances such as the approvals for storage of diesel from chief controller of explosives, fire department, civil aviation department, forest conservation Act, 1980 and wild life (Protection) Act, 1972 etc., shall be obtained, as applicable by project proponents from the respective competent authorities.	<b>Complied.</b> All the necessary approvals are obtained from respective authorities.

**CRZ Clearance Order No. F. No. 11-129/2010-IA.III-, Date: 05.12.2011**

S No.	Condition	Compliance
9.	The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded environmental clearance and copies of clearance letters are available with the state pollution control board and may also be seen on the website of the Ministry of Environment and Forest at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> . The advertisement should be made within 10 days from the date of receipt of the clearance letter and a copy of the same should be forwarded to the regional office of this Ministry at Bangalore.	<b>Complied and communicated.</b>
10.	Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in writ Petition (civil) No.460 of 2004 as may be applicable to this project.	<b>Noted.</b>
11.	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	<b>Noted.</b> Compliance report is being uploaded on company website at <a href="https://seilenergy.com/AboutUs/Disclosure">https://seilenergy.com/AboutUs/Disclosure</a>
12.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad / Municipal corporation, Urban local body and local NGO, if any from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	<b>Complied.</b>

**CRZ Clearance Order No. F. No. 11-129/2010-IA.III-, Date: 05.12.2011**

S No.	Condition	Compliance
13.	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	<p><b>Noted.</b></p> <p>EC Compliance Report uploaded on the Company website.  <a href="https://seilenergy.com/AboutUs/Disclosure">https://seilenergy.com/AboutUs/Disclosure</a></p> <p>The reports are being sent to all the concern regulatory authorities through E-mail on Half Yearly basis.</p>
14.	The proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	<p><b>Complied.</b></p> <p>Six monthly EC Compliance reports are being submitted to concern regulatory bodies along with monitoring and analysis data.</p> <p>Latest EC Compliance report was submitted on 30<sup>th</sup> May 2024 vide letter No. SEIL P1/MoEF&amp;CC/Chennai/2024/003 to concern regulatory Authorities.</p>
15.	The Environmental statement for each financial year ending 31 <sup>st</sup> March in form-V as is mandated to be submitted by the project proponent to the concerned state pollution control board as prescribed under the environment (protection) rules, 1986 as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.	<p><b>Complied.</b></p> <p>Environmental Statement (Form-V) for each financial year is being submitted to APPCB and the same is uploaded on company Website.  <a href="https://seilenergy.com/AboutUs/Disclosure">https://seilenergy.com/AboutUs/Disclosure</a></p> <p>Reports are being submitted to concern regulatory authorities by E-mail.</p>

SEIL Energy India Limited Project-1				
Impact on Air Environment and Control Measures				
S.No	Particulars	Notation	Compliance Status	Mitigation Plan/Remarks
1	Emission Details		<b>Complied</b>	-
	PM		<b>Complied</b>	With in the emission norms i.e. 50 mg/Nm3
	SOx		<b>In progress</b>	Based on the permissible sulphur level in coal which is 0.59%. The SOX range is 1600 mg/Nm3 which will be brought down to within 200 mg/Nm3 after installation of FGD by 31.12.2026.
	NOx		<b>Complied</b>	With in the emission norms i.e. 450 mg/Nm3
2	Stack Height		<b>Complied</b>	Stack with a height 275 m provided
3	Meteorological Data		<b>Complied</b>	Weather station installed in the site for hourly measures of weather parameters
4	Estimation of Ground Level Concentration		<b>Complied</b>	Completed during EIA preparation
5	Application of ISCST3		<b>Complied</b>	Done during EIA Study
6	Maximum Ground Level Concentrations		<b>Complied</b>	Estimated during EIA preparation
7	Post Project Scenario		<b>Complied</b>	Stack Monitoring is being conducted by MoEF&CC approved third party
8	Impact on Forests		<b>Complied</b>	Ony Ipuru reseve forest is 7.8 km away from the site , which is in an upwind direction. Hence there is no impact on forests.
9	Air Pollution Control Measures		<b>Complying</b>	<ul style="list-style-type: none"> <li>i) Water sprinkling is being done &amp; Vaccum truck is deployed for maintaining good housekeeping practices in rhe plant premises &amp; Vicinity.</li> <li>ii) Silos provided for collection of Ash, which is eventually given to users</li> <li>iii) High efficiency ESP provided</li> <li>iv) Dust Extraction (DE) and Dry Fog Dust Supression (DFDS) system implemented to mitigate fugitive emissions</li> <li>v) Low Nox Burners provided in stacks</li> <li>vi) Coal Transfer Points are provided with Dust Extraction System/Dry Fog Dust Supression (DFDS)</li> </ul>

## Notation-

Low	Medium	High

**SEIL Energy India Limited Project-1**

**Impact on Water Environment and Control Measures**

S.No	Particulars	Notation	Compliance Status	Mitigation Plan/Remarks
1	Pretreatment of Sea Water		<b>Complied</b>	Desalination plant installed to meet all the sweet water requirements
2	Waste Water Generation		<b>Complied</b>	Efforts are undertaken to reduce Wastewater Genera on.
3	Water Pollution Control Measures		<b>Complying</b>	i) Toilet facilities were provided ii) Adequate arrangements to ensure proper drainage of water was made.
4	Wastewater Treatment and Disposal		<b>Complying</b>	i) DM plant regeneration wastewater is being neutralized in ETP and routed to the Central Monitoring Basin for use in horticulture/greenbelt. ii) Wastewater streams except domestic wastewater is being routed to ETP for treatment which is then being fully u lized for greenbelt and hor culture development. iv) Part of the cooling tower blowdown is being used for ash handling and balance is being discharged into the sea.
5	Impact on Ground Water		<b>Complying</b>	The Ash pond was made impervious with HDPE liner to prevent any leaching out of it
6	Storm Water Management		<b>Complying</b>	Rain water harvesting pits constructed

**Notation-**

<b>Low</b>	<b>Medium</b>	<b>High</b>

**SEIL Energy India Limited Project-1**

**Impact on Land Environment and Control Measures**

S.No	Particulars	Notation	Compliance Status	Mitigation Plan/Remarks
1	Impact on Terrestrial Ecology		<b>Complied</b>	i) Greenbelt is developed in an area of 452 acres ii) Impervious HDPE liner was given in Ash Pond to avoid leaching
2	Impact on Aquatic Ecology		<b>Complying</b>	i) The water from ash pond if any, is being adjusted for pH (matching to pH of sea water), clarified and then discharged. ii) The location of the outfall was located at 950 meters from the coast to ensure proper dilution and minimize the impact on marine ecology.
3	Greenbelt Development Plan		<b>Complied</b>	i) Greenbelt is developed in an area of 452 acres to control dust/noise pollution. ii) Established our own nursery with the help of forest department to further develop the greenbelt and to promote native species.
4	Solid Waste Generation and Management		<b>Complying</b>	i) Achieving 100% Fly Ash Utilization since September 2019

**Notation-**

<b>Low</b>	<b>Medium</b>	<b>High</b>

**SEIL Energy India Limited Project-1****Impact on Noise Environment and Control Measures**

S.No	Particulars	Notation	Compliance Status	Mitigation Plan/Remarks
1	Noise Pollution Control Measures		Complied	i) Onsite workers working in noise prone areas was provided with earmuffs & ear plugs as per the requirement ii) All high noise making equipment were provided with acoustic enclosures. iii) Proper encasement of noise generating sources was done to control the noise levels and signage displayed in high noise area & regarding proper PPE usage. iv) The steam turbine generators were provided with acoustic enclosures. v) Thick greenbelt of 452 acres is developed all around the palant, which is effectively acting as noise barrier

**Notation-**

Low	Medium	High





# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-9903)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ANNEXURE-II

ISSUED TO: <b>M/s. SEIL ENERGY INDIA LIMITED PROJECT-1</b> (2x660 MW Coal Based Thermal Power Plant), Near Pynampuram / Nelaturu (V), Muthukur (M), SPSR Nellore (Dist.) -524344.	
<b>Discipline: Chemical</b>	<b>Sample Registration Date: 24.11.2023</b>
<b>Group: Water</b>	<b>Analysis Starting Date: 24.11.2023</b>
<b>Product: Marine Outfall Water</b>	<b>Analysis Completed Date: 30.11.2023</b>
<b>Date of Sampling: 23.11.2023</b>	<b>Issue Date: 01.12.2023</b>
<b>Sample Collected By: Ganesh</b>	<b>Lab Ref: SEPL/ES/SEILEILP/11-23/0001</b>

## TEST RESULT

S. NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1	pH	IS:3025(Part-11)1983	--	7.1	6.5-8.5
2	Temperature Intake	--	°C	27.8	Shall not exceed 5°C above the Receiving temperature
3	Temperature Out Fall	--	°C	30.2	
4	Electric Conductivity	IS: 3025:1964	µs/cm	28,258	--
5	Total Dissolved Solids	IS:3025(Part-15)1984	mg/l	19,658	--
6	Total Suspended Solids	IS:3025(Part-15)1984	mg/l	71	100
7	Chemical Oxygen Demand	IS:3025(Part-58)-2006	mg/l	62	250
8	Biochemical Oxygen Demand (3 days at 27°C)	IS:3025(Part-44)-1993	mg/l	38	100
9	Oil & Grease	IS:3025(Part-39)-1991	mg/l	<1.0	10
10	Total Hardness as CaCO <sub>3</sub>	IS:3025(Part-21)-2012	mg/l	4,352	--
11	Total Alkalinity as CaCO <sub>3</sub>	IS:3025(Part-23)-2012	mg/l	763	--
12	P- Alkalinity as CaCO <sub>3</sub>	IS:3025(Part-13)-1964	mg/l	Nil	--
13	Turbidity	IS:3025(Part-10)-2012	NTU	2.7	--
14	Calcium as Ca	IS:3025(Part-40)-2012	mg/l	1,323	--
15	Magnesium as Mg	IS:3025(Part-46)-2012	mg/l	232	--
16	Sodium as Na	IS:3025(Part-45)1993	mg/l	667	--

K.S.Lag  
Verified by



DA  
Authorized by  
Managing Director

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

Web : www.spectraenviro.com | E-mail: sepl.sjn@gmail.com | info@spectraenviro.com

Cell: 80199 55222, 111 | BRANCHES: VIJAYAWADA | HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

S. No	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
17	Potassium as K	IS:3025(Part-45)1993	mg/l	357	--
18	Chloride as Cl	IS:3025(Part-32)-2012	mg/l	7,127	--
19	Sulphates as SO <sub>4</sub>	IS:3025(Part-24)-2012	mg/l	765	--
20	Nitrates as NO <sub>3</sub>	IS:3025(Part-34)-2012	mg/l	39.4	--
21	Carbonates as CO <sub>3</sub>	IS:3025(Part-51)-2017	mg/l	Nil	--
22	Bio Carbonates as HCO <sub>3</sub>	IS:3025(Part-51)-2017	mg/l	547	--
23	Iron as Fe	IS:3025(Part-53)-2012	mg/l	1.8	--
24	Flouride as F	IS:3025(Part-60)-2012	mg/l	1.3	--
25	Copper as Cu	IS:3025(Part-42)-2012	mg/l	0.27	--
26	Manganese as Mn	IS:3025(Part-59)-2012	mg/l	0.36	--
27	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	IS:3025(Part-43)-2012	mg/l	<0.005	--
28	Cadmium as Cd	IS:3025(Part-41)-2012	mg/l	<0.005	2.0
29	Mercury as Hg	IS:3025(Part-48)-2012	mg/l	<0.001	0.01
30	Selenium as Se	IS:3025(Part-56)-2012	mg/l	<0.005	--
31	Arsenic as As	IS:3025(Part-37)-2012	mg/l	<0.01	0.2
32	Cyanide as CN	IS:3025(Part-27)-2012	mg/l	<0.01	--
33	Lead as Pb	IS:3025(Part-47)-2012	mg/l	<0.01	2.0
34	Zinc as Zn	IS:3025(Part-49)-2012	mg/l	0.27	--
35	Hexavalent Chromium as Cr <sup>+6</sup>	IS:3025(Part-38)-1964	mg/l	<0.001	1.0
36	Boron as B	IS:3025(Part-57)-2012	mg/l	0.003	--
37	Silica as SiO <sub>2</sub>	IS:3025(Part-35)-2019	mg/l	24.4	--

Note: IS- Indian Standard

K.S.Laj  
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LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Vizag - 531 035

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# SPECTRA ENVIROTECH PVT LTD

Accredited by MoEF & Accredited by NABL (TC-9903)

Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering

## TEST REPORT

ISSUED TO:

**M/s. SEIL ENERGY INDIA LIMITED PROJECT-1**  
(2x660 MW Coal Based Thermal Power Plant),  
Near Pynampuram / Nelaturu (V), Muthukur (M),  
SPSR Nellore (Dist.) -524344.

**Discipline: Chemical**

**Group: Water**

**Product: Marine Outfall Water**

**Date of Sampling: 23.11.2023**

**Sample Collected By: Ganesh**

**Sample Registration Date: 24.11.2023**

**Analysis Starting Date: 24.11.2023**

**Analysis Completed Date: 30.11.2023**

**Issue Date: 01.12.2023**

**Lab Ref: SEPL/ES/SEILEILP/11-23/0002**

## TEST RESULT

TEST SPECIES	SOURCE OF ORGANISM	LENGTH & WEIGHT (For Fish)	REMARKS
Zebra Fish	Through vendors	1. Length 4.3cm 2. Weight 3.2gm	1. Fish were not fed <u>Yes</u> 2. Temperature range in aquarium 25°C

## REFERENCE TEST DATA

START DATE: 24.11.2023

END DATE: 30.11.2023

### **COMMENTS:**

The test species was undergone toxicity for about 96 Hrs.  
RESULT: 97% survival of fish was noticed

**of Testing:** As per M. L. Jackson & FAO –Food and Agriculture Organization

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## TEST REPORT

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<b>Discipline: Chemical</b>	<b>Sample Registration Date: 21.02.2024</b>
<b>Group: Water</b>	<b>Analysis Starting Date: 21.02.2024</b>
<b>Product: Marine Outfall Water</b>	<b>Analysis Completed Date: 27.02.2024</b>
<b>Date of Sampling: 20.02.2024</b>	<b>Issue Date: 27.02.2024</b>
<b>Sample Collected By: Ganesh</b>	<b>Lab Ref: SEPL/ES/SEILEILP/02-24/0001</b>

## TEST RESULT

S. NO	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
1	pH	IS:3025(Part-11)1983	--	6.9	6.5-8.5
2	Temperature Intake	--	°C	28.3	Shall not exceed 5°C above the Receiving temperature
3	Temperature Out Fall	--	°C	30.7	
4	Electric Conductivity	IS: 3025:1964	µs/cm	28,266	--
5	Total Dissolved Solids	IS:3025(Part-15)1984	mg/l	19,665	--
6	Total Suspended Solids	IS:3025(Part-15)1984	mg/l	75	100
7	Chemical Oxygen Demand	IS:3025(Part-58)-2006	mg/l	66	250
8	Biochemical Oxygen Demand (3 days at 27°C)	IS:3025(Part-44)-1993	mg/l	32	100
9	Oil & Grease	IS:3025(Part-39)-1991	mg/l	<1.0	10
10	Total Hardness as CaCO <sub>3</sub>	IS:3025(Part-21)-2012	mg/l	3,365	--
11	Total Alkalinity as CaCO <sub>3</sub>	IS:3025(Part-23)-2012	mg/l	469	--
12	P- Alkalinity as CaCO <sub>3</sub>	IS:3025(Part-13)-1964	mg/l	Nil	--
13	Turbidity	IS:3025(Part-10)-2012	NTU	2.9	--
14	Calcium as Ca	IS:3025(Part-40)-2012	mg/l	1,334	--
15	Magnesium as Mg	IS:3025(Part-46)-2012	mg/l	239	--
16	Sodium as Na	IS:3025(Part-45)1993	mg/l	671	--

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S. No	TEST PARAMETERS	TEST METHOD	UNITS	RESULTS	STANDARDS
17	Potassium as K	IS:3025(Part-45)-1993	mg/l	366	--
18	Chloride as Cl	IS:3025(Part-32)-2012	mg/l	8,133	--
19	Sulphates as SO <sub>4</sub>	IS:3025(Part-24)-2012	mg/l	772	--
20	Nitrates as NO <sub>3</sub>	IS:3025(Part-34)-2012	mg/l	42.3	--
21	Carbonates as CO <sub>3</sub>	IS:3025(Part-51)-2017	mg/l	Nil	--
22	Bio Carbonates as HCO <sub>3</sub>	IS:3025(Part-51)-2017	mg/l	556	--
23	Iron as Fe	IS:3025(Part-53)-2012	mg/l	1.5	--
24	Flouride as F	IS:3025(Part-60)-2012	mg/l	2.4	--
25	Copper as Cu	IS:3025(Part-42)-2012	mg/l	0.35	--
26	Manganese as Mn	IS:3025(Part-59)-2012	mg/l	0.43	--
27	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	IS:3025(Part-43)-2012	mg/l	<0.005	--
28	Cadmium as Cd	IS:3025(Part-41)-2012	mg/l	<0.005	2.0
29	Mercury as Hg	IS:3025(Part-48)-2012	mg/l	<0.001	0.01
30	Selenium as Se	IS:3025(Part-56)-2012	mg/l	<0.005	--
31	Arsenic as As	IS:3025(Part-37)-2012	mg/l	<0.01	0.2
32	Cyanide as CN	IS:3025(Part-27)-2012	mg/l	<0.01	--
33	Lead as Pb	IS:3025(Part-47)-2012	mg/l	<0.01	2.0
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37	Silica as SiO <sub>2</sub>	IS:3025(Part-35)-2019	mg/l	25.7	--

Note: IS- Indian Standard

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**Sample Collected By: Ganesh**

**Sample Registration Date: 21.02.2024**

**Analysis Starting Date: 21.02.2024**

**Analysis Completed Date: 27.02.2024**

**Issue Date: 27.02.2024**

**Lab Ref: SEPL/ES/SEILEILP/02-24/0002**

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TEST SPECIES	SOURCE OF ORGANISM	LENGTH & WEIGHT (For Fish)	REMARKS
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## REFERENCE TEST DATA

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### **COMMENTS:**

The test species undergone toxicity for about 96 Hrs.  
RESULT: 97% survival of fish was noticed

**Testing:** As per M.L.Jackson & FAO –Food and Agriculture Organization

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