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**EXPRESSION OF INTEREST (EOI) NO. **OIL/RF/EOI/016/2024** FROM INTERESTED ENTITIES FOR SETTING UP GAS SWEETENING FACILITY FOR REMOVING OF CARBON DIOXIDE FROM THE NATURAL GAS STREAM AT GAS PROCESSING PLANT AT DANDEWALA.**

**Preamble**

Oil India limited (OIL) a “Maharatna” Category, Government of India Enterprise is a fully integrated National Oil Company operating under the Ministry of Petroleum and Natural Gas. With an impeccable credential spanning over six decades, OIL is actively involved in exploration, production and transportation of crude oil and natural gas as well as refining, petrochemicals and renewable energy generation.

OIL have its operation spread across the country including Rajasthan where OIL is engaged in exploration and production of Natural from Dandewala and Bagitibba Fields.

OIL discovered commercially viable gas fields at Tanot, Dandewala and Bagitibba in Jaisalmer district of Rajasthan. These fields are located at a distance of approx. 150 kms. from Jaisalmer. To operate the fields, OIL has two production installations viz., Gas Processing centre (GPC) at Dandewala and a Gas Gathering Station (GGS) at Tanot besides a permanent base camp (Tanot Village Complex, TVC) near Tanot BSF camp. Dandewala field and GPC are at a distance of about 35 kms and Tanot GGS is situated at a distance of 22 kms from Tanot Village Complex. Oil India Limited is operating in Jaisalmer Petroleum Mining Lease (PML) block comprising of three fields Viz. Tanot, Dandewala and Bagitibba fields right from discovery of Natural Gas in 14.08.1988 in Tanot field from TOT#1 well. Subsequently Dandewala field came in existence with the discovery of NG from DND field on 26.08.1990, from DND#1 well. Later on, more wells came in this field for developing the field for commercial production. This resulted in setting up of a centralized Natural Gas Processing facility named DND GPC (Dandewala Gas Processing Complex) in 1996 with the capacity of handling 1 MMSCM of Natural Gas per Day. Presently the gas produced at Dandewala, Tanot & Bagitibba gas fields is routed to Gas dehydration unit (at Dandewala - GPC) and supplied to thermal power plant of Rajasthan Rajya Vidyut Utpadan Nigam Limited (RRVUNL) at Ramgarh through M/s Gas Authority of India Limited (GAIL) 's 12” pipeline of 67 KM. DND-GPC plant layout and piping network diagram is attached as Annexure-1.

The climatic conditions of these areas are generally hot and dry. It is characterized by extreme temperature and scarce rainfall. The hot weather is very prolonged and starts from the month of April to end of August. The maximum and minimum recorded ambient temperature at the site is 55 °C and minus 1 °C respectively. The rainfall in these areas is scanty and scarce. The average normal rainfall is only 1" (25 mm). The maximum humidity recorded in this region is 40%.

## 1. Objective

Oil India Limited (OIL) is looking for setting up gas sweetening facility for removing the Carbon Dioxide component from the natural gas at Gas processing plant at Dandewala. This separated CO<sub>2</sub> will be utilised for the carbon sequestration.

## 2. Field parameter:

### A. GEOGRAPHIC LOCATION

Dandewala area is located at the western part of India and in the States of Rajasthan. Rajasthan encompasses most of the area of Great Indian Desert (Thar Desert), which has an edge paralleling the Sutlej-Indus river valley. The nearest airport to the operating area is Jaisalmer which is located at a distance of 150 kms and Jodhpur Airport is located at a distance of around 450 km.

### B. ENVIRONMENTAL CONDITIONS:

Components	International System (SI)
Ambient Temperature (Max. / Min.)	55 / -1 Deg C
Humidity (Max.)	40%
Average Rainfall	25 mm (about 0.98 in)/year
Wind velocity (Max.)	128 KM/Hr.
Frequency of Sandstorm	March to September and occasional during the remaining period.
Seismic Zone	III, Moderate
Weather	Four distinct seasons-Pre monsoon, monsoon, post-monsoon, and Winter
Topography of Site	Part of Thar Desert

### C. BROAD SCOPE OF WORK

- Bidder to proposed suitable membrane technology to remove the CO<sub>2</sub> from natural gas feed and to achieve the output parameters as mentioned below.

- Bidder to consider **0.3 MMSCMD** of gas at **28 kg/cm<sup>2</sup>** as given in table-1 for removal of CO<sub>2</sub>.
- After selection of suitable membrane technology, process design with HYSIS Simulations study to be carried out by bidder. After HYSIS simulations study, design has to be approved by OIL. Bidder to consider the number of membrane to be used to achieve the desired specification for CO<sub>2</sub>.
- Technology should ensure that the feed gas throughput doesn't decrease while achieving excellence in CO<sub>2</sub> removal.
- Bidder to carry out the iterations for different inlet and outlets pressure by varying various parameters.
- Process design should be based on the energy efficient membrane technology depending on the membrane separation performance, process, operating parameters as well as the product requirements.
- Unit for the selected membrane technology should have long operating life with sustain membrane performance, even in the aromatic and water rich conditions.
- Unit for the selected technology should be designed in such a way that it reduces the scope of emission.
- Bidder has to suggest noble high-performance material.
- Selected technology should retain maximum hydrocarbon in the non-permeate produced gas.
- Selected membrane technology should not show any sensitivity against the oxygen.
- Bidder to provide the optimum solution for plant retrofits.
- Bidder has to provide solar power facility at site for running the plant.
- Additionally, bidder needs to consider the state DISCOM supply as alternative power source (11 Kva).
- The input and output parameters of the gas is as per below table:

**Table-1**

Component	Current Specification. (mol%)	Proposed Specification (ppm)
NITROGEN	30.02	
CARBON DIOXIDE	24.83	< 20
METHANE	43.46	
ETHANE	0.96	
PROPANE	0.22	
ISO-BUTANE	0.04	
N-BUTANE	0.06	
ISO-PENTANE	0.03	
N-PENTANE	0.02	
HEXANE	0.37	
H <sub>2</sub> S	0.00	

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Total	100.00	
Gross Calorific Value (Kcal/SCM)	4325	
Net Calorific Value (Kcal/SCM)	3902	
Specific Gravity	0.9373	
Moisture content	Saturated	<112Kg/mm scm , Water and hydrogen dew point – 0 degree Celsius
Receipt pressure at Dandewala	28 KSC	
Receipt Temperature at Dandewala	Ambient temperature	

- Bidder to ensure that output of specified natural gas has to be delivered at 25 ksc.
- Bidder has to ensure maximum hydrocarbon loss should not exceed the 2% of the total hydrocarbon content in the volume supplied and proper measurement facility in this regard has to be provided both upstream and downstream. The calibration of the measurement facility has to be carried out in the presence of the OIL's engineer.
- Bidder to ensure that this proposed facility is compatible with the existing plant.
- Bidder to make necessary arrangement for hook-up of proposed CO<sub>2</sub> removal plant with the existing facility within the battery limit.
- Bidder to provide the CO<sub>2</sub> measurement facility and joint calibration of the same needs to be carried out in the presence of OIL's Engineer.
- Bidder to carry out the civil job required for the above.
- Control room along with all necessary infrastructure has to be provided by the bidder.
- Power requirement along with other utilities has to be arranged by bidder.
- Bidder to provide outlet water specification less than 200 ppm (in line with ISO/TR 27921:2020 (E)) in the CO<sub>2</sub> stream for CO<sub>2</sub> sequestration purpose.
- Bidder to ensure that no additional CO<sub>2</sub> footprint generated from this plant.
- Bidder to consider prefabricated modular skid-based units to minimise construction efforts at site.
- Bidder to explore the options of taking raw gas from upstream or downstream of GDU.
- Bidder to ensure that no handling and no disposal of chemicals at site from this plant.
- For the initial six (06) months, bidder to provide the Operation and Maintenance services including spares.
- Defect liability period duration is 12 months after successful installation and commissioning of the plant.

**3. Service Provider/ Contractor/ Vendor will demonstrate their experience and capability against this EOI.**

- Interested Party will provide the following Information:
  - A. Details of Company Incorporation along with Date and Place of Incorporation.
  - B. Documentary evidence for past experience of design, supply and installation and commissioning for setting up of Gas Sweetening Facility of minimum capacity of 0.3 MMSCMD.
  - C. Company's financial performance documents i.e.
    - (I) Net worth for preceding financial/accounting year.
  - D. Contact Details
    - Name of concerned person
    - Designation
    - Telephone number.
    - Mobile number
    - Fax number
    - Address e-mail.
  - E. If a Joint Venture/Consortium is proposed, Name, Address, Phone, E-mail of all Joint Venture partners /consortium members.
  - F. Any other relevant details

**4. General Notes:**

- All documents submitted along with the EOI should be clear & legible and in English.
- If bidder fails to provide the documents as mentioned in point-4, offer will not be considered for evaluation.
- The EOI is liable to be ignored in case of submission of any misleading / false representation by the Service Provider/ Contractor/ Vendor/ Company.
- OIL INDIA LIMITED reserves the right to ignore any or all EOIs and also to curtail/ enhance the scope of work stated above, if required, without assigning any reason thereof.
- This EOI is not an invitation for bids.
- This EOI is non-binding in nature and submission of information should not be considered as shortlisting / selection for company in any subsequent RFP/ Tender/ Bid process that may be undertaken in future.
- OIL reserves the right to terminate the EOI process at any point of time without assigning reason.
- No participant shall contact OIL on any matter relating to the EOI after the last date of submission of EOI unless requested for so in writing. Any effort by the

service provider to influence OIL in the decision making in respect of EOI will result in the rejection of that service provider.

- Based on the responses received against this invitation, a virtual meeting/ offline discussion (as per convenience of OIL) will be held with the responding Service Provider/ Contractor/ Vendor/ Company to discuss on the information/ views submitted. Date and time shall be intimated separately.

**5. Submission of EOI**

- Interested parties meeting the stated experience as above are invited to submit their EOI at our e-mail id: [tonmoydutta@oilindia.in](mailto:tonmoydutta@oilindia.in), and [niponsarma@oilindia.in](mailto:niponsarma@oilindia.in) within 26.09.2024.
  - The offer(s) may also be uploaded in Parties' FTP server/ File sharing website (portal) and the link(s) may be provided to us at our e-mail within above specified period.
  - The offer(s) should have clear indication of meeting the requisite experience as mentioned in stated experience.
- 6.** All Corrigenda, addenda, amendments, time extensions to the EOI will be hosted on OIL's website [www.oil-india.com](http://www.oil-india.com) under For Vendors ---> Expressions of Interest and no separate notification shall be issued in the press. Prospective participants against the EOIs are requested to visit the website regularly to keep themselves updated.

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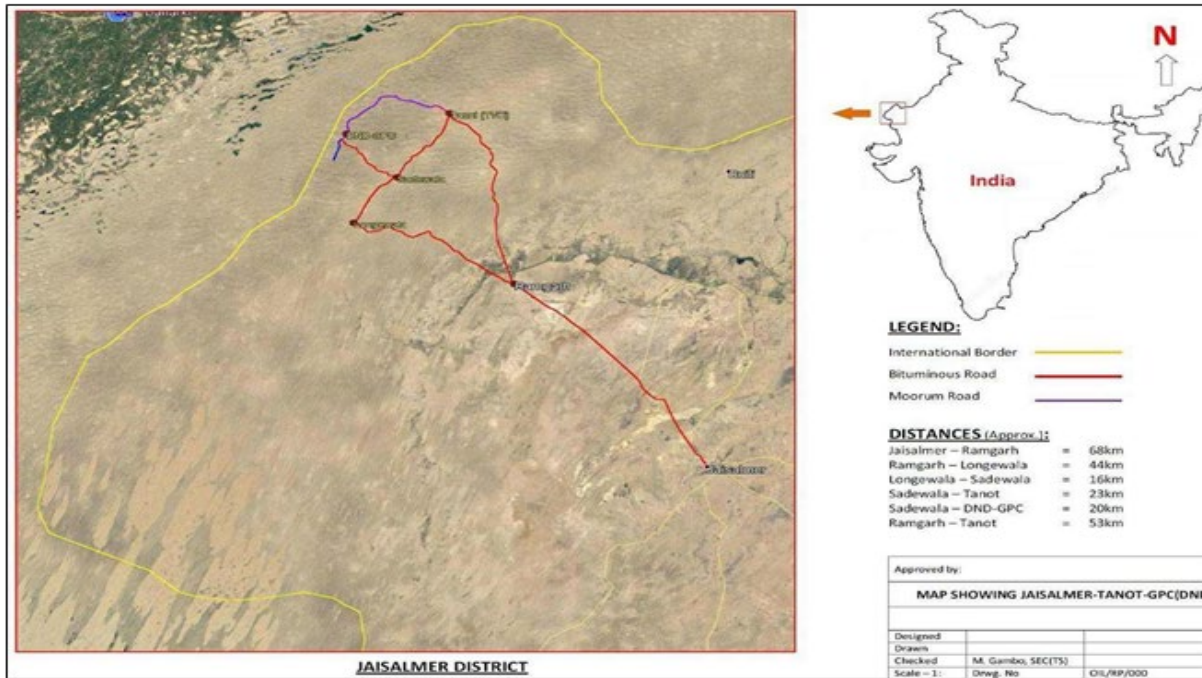
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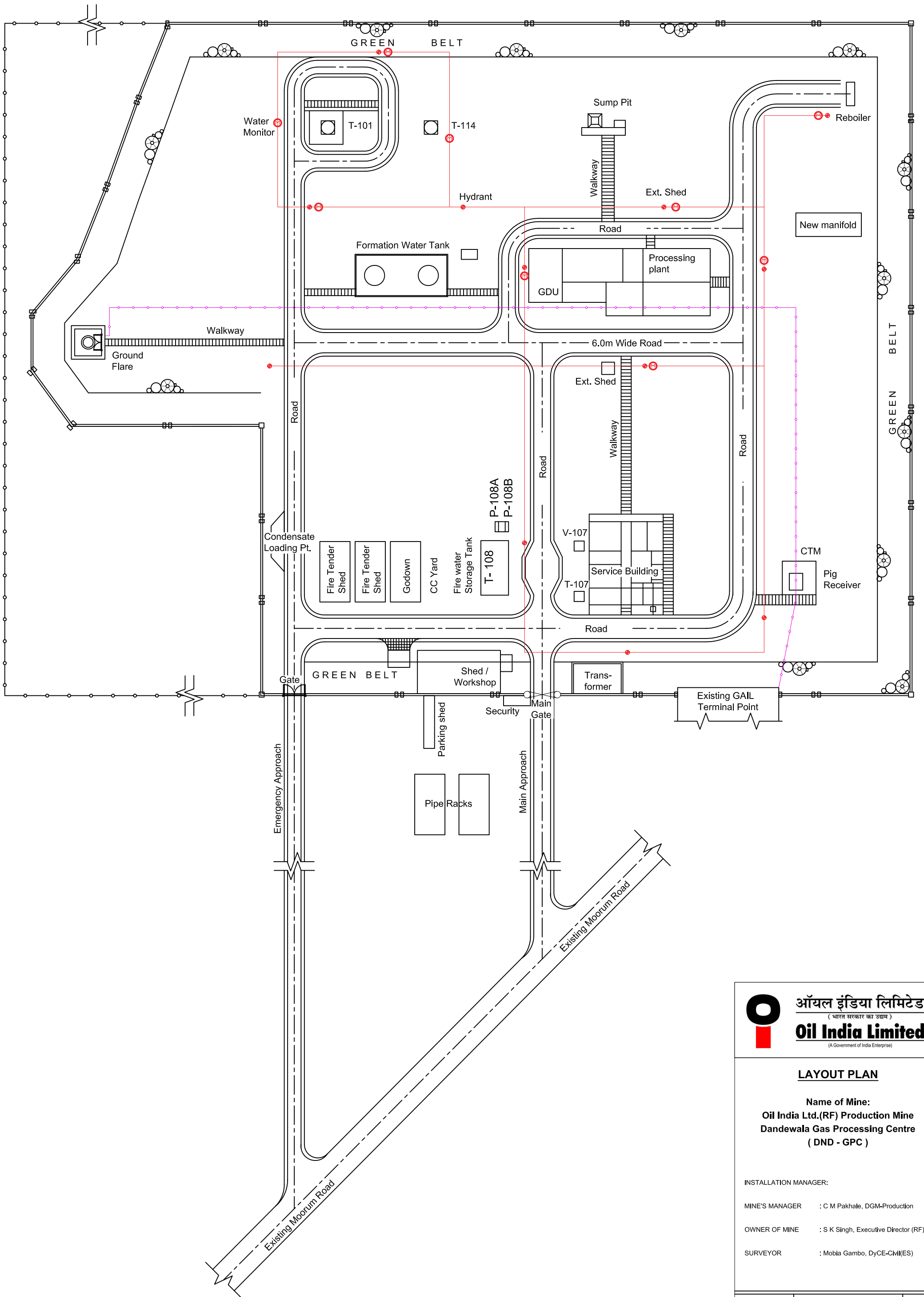
**TYPICAL MAP SHOWING DETAILS OF VARIOUS FACILITIES**

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**LAYOUT PLAN**

Name of Mine:  
**Oil India Ltd.(RF) Production Mine  
Dandewala Gas Processing Centre  
( DND - GPC )**

INSTALLATION MANAGER:  
MINE'S MANAGER : C M Pakhale, DGM-Production  
OWNER OF MINE : S K Singh, Executive Director (RF)  
SURVEYOR : Mobia Gambo, DyCE-Civil(ES)

SCALE	DRAWING No.	REV.
1:		