ऑयल इंडिया
OIL INDIA

Oil India Limited
(A Maharatna Company)
OGPL&P Department
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E-mail: *DJN_pl@oilindia.in*

EOI No.: EOI/ OGPL&P/WC-242/020(A)/2025

Description of Work-
Expression of Interest for 'Integrity Assessment of Difficult to Pig pipelines using Intrusive tools.'

Location-In the Oil & Gas production area of OIL INDIA LIMITED, in the state of Assam.

Preamble-
Oil India Limited is a Central Public Sector Undertaking under the Ministry of Petroleum & Natural Gas (MoPNG), Government of India. OIL operates a large network of Natural Gas and Crude Oil field pipelines in Assam and Arunachal Pradesh.

Oil India Limited (OIL) is in the process of conducting a comprehensive integrity assessment of its pipeline network, including sections categorized as "difficult-to-pig." These pipelines, crucial for safe and efficient operations, require specialized inspection and assessment methodologies due to design and operational constraints.

Oil India Limited (OIL) is currently utilizing the Direct Assessment (DA) methodology for the integrity assessment of its field pipelines, which is a non-intrusive technique. This iterative, predictive modelling process employs complex mathematical algorithms and requires multiple evaluations to establish conclusive insights into pipeline integrity.

However, Oil India Limited (OIL) is now planning to also deploy **intrusive tools** for the integrity assessment of difficult-to-pig but high-consequence pipelines. This approach will enable a **more comprehensive corrosion mapping and creation of baseline data** for these critical pipelines. The use of advanced intrusive tools such as Magnetic Flux Leakage (MFL), ultrasonic inspection, and robotic or tethered systems will provide more detailed assessment.

To achieve this, OIL proposes engaging reputed agencies, in an upcoming Tender as next course of action to this EOI, with expertise in pipeline integrity assessments, utilizing advanced intrusive tools and technologies such as Magnetic Flux Leakage (MFL), ultrasonic inspection techniques, and robotic/tethered/crawler systems. These services are essential to assess internal and external metal loss, mechanical anomalies, geometric irregularities, laminations, and other critical parameters affecting field pipeline integrity.

Objective-

The proposed EOI aims to:

a) Facilitate the identification of vendors with proven expertise in pipeline in-line inspections, specifically for pipelines with unique operational challenges.
b) Enable OIL to evaluate and select the most suitable technology for inspecting and maintaining the integrity of both piggable and non-piggable pipeline sections.

c) Provide a platform to interact with vendors, ensuring clarity on technical and operational aspects of the proposed solutions.
d) Aid in budget planning and execution by providing insights into cost-effective methodologies for comprehensive integrity assessments.

This document shall comprise of two parts viz.

1. PART A- This part gives a brief description of the tentative scope of work. This part is only for reference, and no necessary action is required during the EOI phase.
2. PART B- OIL requests the participants to submit the required details and documents (including annexures) as per this part of the document. The documents should be submitted after reviewing the work details as described in the *PART-A* of this document.

PART-A

Brief Scope of Work

(a) The scope of work includes Inspection of pipelines by running foam pig, gauge pig, cleaning pigs (Magnetic / Brush / Special cleaning tools), electronic geometry pig (EGP), **MFL [High-Resolution *Axial MFL – axial magnetization and/or Transverse MFL*] or [metal loss detection] technique** with XYZ mapping **by conventional / batch pigging OR by Robotic / Tethered / Crawler tools etc.,** to detect, identify and size internal & external metal loss, mechanical anomalies, geometric anomalies, laminations, crack-like anomalies, girth & seam weld anomalies, other anomalies & features and pipe wall thickness of pipeline sections. The contractor shall also be responsible for all associated activities, services and material/equipment necessary to complete the work. The rates quoted by the contractor shall be deemed to include the same.

(b) Technology or equipment and tools & tackles required for the inspection, need to be assessed by the Participant prior to the participating in this EOI. Accordingly, the Participant should thoroughly read and understand the requirements for each pipeline section with suitable inspection technology along with associated works.

(c) Pipelines intended for Inspection are categorised in two groups in this contract.

(1) **Group-1**: Sections with Pigging facilities: Sections are installed with standard launcher, receiver barrels but operating with low flow / low pressure / no flow and may have other restrictions like 1.5 D bends / short bends / reduce bore valves, multiple offtakes etc.

(2) **Group -2**: Sections un-piggable by design i.e., without launching / receiving facility along with other constraints such as low flow / no flow / other restrictions like 1.5 D bends / short bends / reduce bore valves, multiple offtakes etc.

(d) The contractor shall carry out technical feasibility assessment of the pipeline sections, associated facilities /installations. Contractor shall evaluate the suitability for inserting the tool, prior to removal of spool piece / valve / end blind. Contractor shall collect / confirm pipeline data, details of launcher / receiver / spool piece / valve details and other facilities. As per data available & details collected, contractor shall analyze & assess each pipeline section, for suitability of the cleaning, inspection, design of cleaning / inspection tools, required tools & tackles, required temporary facilities such as launcher and receiver etc. Accordingly, contractor shall submit a feasibility report to OIL including design of inspection tools, cleaning and inspection methodology, schedule of activities and procedures for critical activities to be carried out to complete the Integrity Assessment in all respect.

(e) Inspections may require cleaning to achieve the desired performance specifications. Contractor should preferably carry out cleaning pigging in low flow pipeline sections, by specially designed cleaning tools, according to typical fluid flow and pressure availability in the pipeline (mentioned in Annexure-1). Further, if in-service pigging is not feasible, due to operating parameters as mentioned in Annexure-1, OIL may provide shutdown of particular pipeline section for short duration. Pigging may require dismantling / dropping of facilities like valves / spool pieces / end blinds etc., and/or

installation of temporary launcher and receiver wherever pigging facilities not available or available pigging facilities are not feasible for ILI. Contractor may also use other suitable technique for cleaning the unpiggable pipeline sections.

(f) Inspection of the pipeline sections can be carried out using high resolution MFL or Ultrasonic technique. If contractor intends to use Ultra-sonic inspection technique, it can be carried out in Crude oil pipeline through pigging with suitable liquid preferably crude oil. If justification is provided by Contractor, Water may be allowed as the couplant medium by OIL. If water is used as couplant medium, proper swabbing and drying shall be done after the inline inspection as per criteria mentioned in herewith and necessary arrangement of water has to be done by Contractor. Contractor should prepare the safe operating procedure which shall be duly approved by OIL and Contractor shall take all safety measures and precautions accordingly. All the peripheral and supporting activities related to pigging shall be carried out by the contractor. *In natural gas pipeline, use of Ultra-sonic inspection technique will not be allowed.*

(g) Inspection may be carried out by conventional pigging or other technologies. Inspection with Robotic/ Tethered / Crawler tools can be done in unpiggable pipelines sections by dismantling / dropping off facilities like valves / spool pieces / end blinds etc., and/or by installing required temporary launcher & receiver and other required temporary facilities.

(h) Inspection through conventional pigging should be carried out with specially designed cleaning/inspection tools, as the pipeline sections not have conducive flow parameters. Inspection tools should be designed and configured to complete the inspection of the pipeline through single run considering the low flow / low-pressure scenario.

(i) The scope of work will include mobilisation, demobilisation of Cleaning Pigs, EGP, XYZ and Inspection tools along with required consumables & tool, tackles etc., supply of markers, Taking DGPS co-ordinates, execution of Pull-Trough test, cleaning program [including cleaning & drying of pipeline section after UT tool run], EGP/Caliper, Inspection tools run, data retrieval, data processing, providing express, preliminary, Final reports etc.

(j) Defect Verification shall be done for each section of the pipeline to assess accuracy of MFL / Ultrasonic tool performance.

From the list of anomalies provided by contractor in the preliminary report, minimum three (3) anomalies shall be selected for dig verification. Excavation, removal of coating, cleaning of pipeline surface, re-coating of the pipe and restoration of ROU will be done by Contractor. Contractor shall carry out verification of the anomaly / defect by suitable NDT methods and other appropriate technique.

(k) In the event of the pig getting stuck-up in the pipeline during any pigging activity, contractor shall attempt retrieval of the pig / tool using appropriate tools and also make necessary arrangements for the same with minimum loss of time and optimum efforts. Contractor's contingency plan shall outline its procedure for inline retrieval of each type of stuck pig / inspection tool including a listing of all resources required for such a procedure. The contingency plan shall focus on retrieving the stuck-up pig and restoring the normal flow in the shortest possible time with optimum efforts and resources

If pig remains stuck, in spite of efforts including the retrieval procedure as per contractor's contingency plan, then the pipeline section shall have to be cut for retrieval of pig. Hot tapping, bypass loop installation, pipe cutting, etc. for retrieval of stuck-up pig and necessary erection, fabrication and modification of pipe with new pipe piece after retrieval of stuck-up pig shall be done by OIL or its nominated agency. Procedure for recovery of stuck-up pig shall be finalized by OIL in consultation with contractor. In such a case, contractor shall assist OIL for retrieval of stuck-up pig to the extent of advising OIL and suggest methods to aid in retrieval. After retrieval of the stuck-up pig, decision to continue with the next phase of activities under the contract shall be taken by OIL.

(l) Interpretation of Inspection Data and Reporting:

1) Report:

Subsequent to data analysis by the contractor, the findings of the pipeline inspection shall be furnished to the Company in a detailed report in hard copies and proprietary data management software designed as per POF (Pipeline Operators Forum) 2016 or latest edition. This report shall contain information as given below::

a) Listing of all metal loss zones indicating severity grade, orientation absolute location and type of defects.

b) Location, Orientation and three-dimensional sizing of defects indicating the MAOP for each metal loss feature ranging from 10% and above of nominal pipe wall thickness.

c) Submit a list of locations needing repairs, recommend safe MAOP for each section of pipeline surveyed and a prioritized list of locations needing repair of defects to be carried out to operate the pipeline at 72% of SMYS based on ANSI B31.G (modified) latest edition.

d) List of all shorted casing indicating location and the position of shorting of the casing to the carrier

e) List of pipeline features;

f) Pipeline tally including pipe joints layout.

g) XYZ mapping with longitudinal accuracy +/-1 meter, latitude accuracy +/- 1 meter and elevation accuracy +/- 1 meter.

h) Severity Analysis for all metal loss, features having metal loss greater than 20% for all detected features.

i) Velocity of the Intelligent Pig along the length of the pipeline.

j) Recommendation for repair report with time frame.

k) Fitness for Purpose (FFP) report as per latest ASME B31G standard latest edition.

l) Submit a consolidate summary report of all pigging segments

2) Reporting format:

i) In addition to the written report, the Contractor shall furnish software version ofthe report including a hard copy in a PC compatible format with necessary system configuration. The reporting shall include the pipeline inspection data. The Contractor shall grant to the Company the perpetual right to use the software package.

ii) Corrosion Growth Rate analysis and RLA Study: - Corrosion growth rate analysis based on previous ILI runs to be provided in the Fitness for Purpose (FFP) report.

3) Metal loss' listing:

A record of all reportable metal loss in actual dimensions of Length, width and maxim-depth, showing distance from reference point and orientation and specifyingwhether internal /external. All metal loss features shall further be segregated into separate lists for all pitting having depths as specified in clause 5.3b) above. Further8 more lists (for general corrosion) based on severity level shall be submitted as given hereunder:

1. Metal loss greater than 10% to 30% of wall thickness.
2. Metal loss greater than 30% to 45% of wall thickness.
3. Metal loss greater than 45% to 60% of wall thickness.
4. Metal loss greater than 60% to 80% of wall thickness.

5. Metal loss greater than 80% of wall thickness.
6. Defects / features with ERF value > 1.0
7. Defects / features with ERF value between 0.9 to 1.0
8. Defects / features with ERF value 0.85 to 0.9
   (ERF = Estimated Repair Factor.)

In this listing discriminations shall be made between external and internal pipe wall defects.

PART-B

With reference to EOI No.: EOI/OGPL&P/WC-242/020(A)/2025, OIL requests the participants to submit the following required details and documents (including annexures). The documents should be submitted after reviewing the work details as described in the *PART-A* of this document.

Description-- EOI for 'Integrity Assessment of Difficult to Pig pipelines using Intrusive tools in the Oil & Gas production area of OIL INDIA LIMITED, in the state of Assam.'

Experience of Firm:

1. Name of the participating firm:
2. Contact details:
3. List of successful jobs:

Sl. No.	Client Name	Year (Contract Period)	Brief of the Work carried out*

**Please Note-* *Brief of Work details must include size, length and fluid transported in the pipeline and the technology used during the job.*

4. Specifications for foam, gauge, brush & magnet, electronic geometry pig, XYZ mapping pig and high resolution MFL tool, ultrasonic tool etc.
5. Please submit the brief scope of work against technology offered.
6. Please submit duly filled Annexure II to Annexure-V.

GENERAL NOTES:

(i) All documents submitted along with the EOI should be clear & legible. All the Annexures must be read and clearly submitted with necessary details by the Participant.

(ii) The EOI is liable to be ignored in case of submission of any misleading / false representation by the Vendor/Contractor/Service Provider.

(iii) 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.

(iv) 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.

(v) OIL reserves the right to terminate the EOI process at any point of time without assigning reason.

(vi) No participant shall contact OIL on any matter relating to the EOI after the last date of submission of EOI unless requested so in writing. Any effort by the bidder to influence OIL in the decision making in respect of EOI will result in the rejection of that bidder.

(vii) Based on the responses received against this invitation, a virtual meeting shall be held with responding companies to discuss the information / views submitted. Date and time shall be intimated separately.

SUBMISSION OF EOI:

1. Interested Parties/Vendors/Contractors/Service Providers having relevant experience and expertise (details are available at OIL's website-www.oil-india.com) are invited to submit their EOI(s) at our e-mail id: **Satyajit_chakrabarty@oilindia.in / jatingogoi@oilindia.in / prankush@oilindia.in** in within **15-03-2025 up to 11:00 Hrs (IST)**, or hard copies of the same in sealed envelopes super-scribing "Expression of Interest (EOI) NO. EOI/ OGPL&P/WC-242/020(A)/2025 for "Integrity Assessment of Difficult to Pig pipelines using Intrusive tools in the

Oil & Gas production area of OIL INDIA LIMITED, in the state of Assam." through courier/post to the following address:

OFFICE OF GENERAL MANAGER (OGPL&P)
OIL INDIA LIMITED
OGPL&PROJECTS DEPARTMENT
P.O. DULIAJAN-786602
DIST.DIBRUGARH,
ASSAM, INDIA

2. Service Provider/Contractor/ Vendor may also upload their offer in their FTP server/File sharing website (portal) and the link(s) may be provided to us at our e-mail within the above specified period.
3. In case, the above mentioned date happens to be a non-working day for OIL in Duliajan due to Bandh/holiday or for any other reasons, EOIs shall be received upto the next full working day till 15:00 Hrs. (IST) and opened accordingly. However, OIL shall not be responsible for any consequence arising out of delay in receipt or non-receipt of EOIs.
4. Oil India Limited reserves the right to (a) either accept or reject any/all EOIs (b) cancel the process, without assigning any reasons whatsoever.

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Annexure-IA

LIST OF PIPELINE SECTIONS AND BRIEF INFORMATION – Group-A: Sections with pigging facility

SL. No.	Pipeline Region	Pipeline Section Code	Pipeline Section Name	Diameter (inches)	Length (km)	Max. wall thickness (mm)	Min. wall thickness (mm)	Pipe Material Grade	Type of Fluid	MAOP (kg/cm^2)	Operating Pressure Range (kg/cm^2)	Tail / Receiver end Pressure (kg/cm^2)	Typical Flow range (MMSCMD)	Typical Velocity range (m/sec)	Min. Bend Radius	OFFTAKE (Flow/ Barred) (nos)	Valves (Full bore/ Reduced bore)	Internal Coating	Year of start up	Year of last Cleaning
1	Eastern Fields	A	16" (400 mm) BAGHJAN EARLY PRODUCTION SYSTEM (EPS) TO CENTRAL GAS GATHERING STATION (CGGS) NATURAL GAS PIPELINE	16"	38.212	6.4	6.4	API 5L X60	Natural Gas	50	25	14	2	NA	1.5D	NA	Full bore (Ball valve)	no	2015	2019
2	Eastern Fields	B	8" (200 mm) BAGHJAN EARLY PRODUCTION SYSTEM (EPS) TO Secondary TANK FARM (STF) CRUDE OIL DELIVERY PIPELINE	8"	37.898	6.4	6.4	API 5L X60	Crude Oil	120	45-55	5-10	3000 KL	NA	1.5D	NA	Full bore	no	2015	2025
3	Western Fields	C	8" (200 mm) WHS-MFK to Moran Tank Farm Crude oil delivery pipeline	8"	21.261	6.4	6.4	API 5L X46	Crude Oil	105	18-19	1.5-2	1151 KL	NA	1.5D	NA	Full bore	no	2023	2024
4	Central Fields	D	12" (300mm) Savitri Tiniali to Secondary Tank Farm Crude Oil Delivery pipeline	12"	25.95	8.4	8.4	API 5L GR A	Crude Oil	70	20-25	4-5	7000KL	NA	1.5D	NA	Full bore	no	2018	2024

Note - Each pipeline section length as per above table is to be inspected by ILI tools in single run.

These lines and data are incorporated in the EOI to provide participants with an understanding of the parameters of field pipeline network. OIL INDIA LIMITED reserves the right to curtail or enhance the scope of work, i.e., the list of pipelines, in the future tender.

Annexure-IB

LIST OF PIPELINE SECTIONS AND BRIEF INFORMATION – Group-B: Section without Pigging facility (Unpiggable)

SL. No.	Pipeline Network	Pipeline Section Code	Pipeline Section Name	Diameter (inches)	Length (km)	Max. wall thickness (mm)	Min. wall thickness (mm)	Pipe Material Grade	Type of Fluid	MAOP (kg/cm^2)	Operating Pressure Range (kg/cm^2)	Tail / Receiver end Pressure (kg/cm^2)	Typical Flow range (MMSCMD)	Typical Velocity range (m/sec)	Min. Bend Radius	Reduced Bore Valves (nos)	Full Bore Valves (nos)	Internal Coating	Year of start up
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			

Note - Each pipeline section length as per above table is to be inspected by ILI tools in single run.

Annexure-II

Confirmation by Participant for Pull Though Test Facility

[For evaluation]

We, M/s _____ confirm that we shall offer Pull through Test Facility for the calibration of Inspection Tools **[High Resolution *Axial MFL – axial magnetization* / Ultrasonic (metal loss detection) conventional OR Robotic / Tethered / Crawler]** of all the sizes covered under the scope for the identification of anomalies of pipeline as mentioned in the document. We are ready to offer for witnessing the Pull through Test to M/s Oil India Limited as and when necessary.

The pull through test will be performed in a facility which shall have the following minimum provisions:

(1) PTT shall be carried out at minimum two different velocities using winch machine / flow loops / any alternate method.

(2) The pipe spool for PTT shall be of minimum 12m, having minimum two girth weld joints and shall have anomalies as mentioned in performance specifications.

Confirmation by participating entity about Ownership / Technology tie-up of all proposed Inspection Tools

We, M/s _____ confirm that we own / have Technology tie-up for all the proposed Axial MFL / Ultrasonic-metal loss detection tools of all the sizes covered under the scope mentioned in the EOI.

The proposed Axial MFL / Ultrasonic - metal loss detection tools have been used in past. The List of such pipelines on which ILI carried out successfully is as per below mentioned Table.

SL. No.	Name of Pipeline	Year of In-line Inspection	Name of the Organization

Signature of the Participant _____

Seal of the Participant _____

Annexure-III

Undertaking for Ownership of ILI tools

(a) OWNERSHIP OF ILI TOOLS OF DIFFERENT SIZES.

SL_No	Size of Axial MFL Tool (Inch)	Number of Axial MFL Tool(s)	Serial Number of the Axial MFL Tool(s)	Owner of the Tool (Participant / Technology service provider)
1				
2				
3				
4				
SL_No	Size of Ultrasonic (metal loss detection) Tool (Inch)	Number of Ultrasonic (metal loss detection) Tool(s)	Serial Number of the Ultrasonic (metal loss detection) Tool(s)	Owner of the Tool (Participant / Technology service provider)
1				
2				
3				
4				

In natural gas pipeline, use of Ultra-sonic inspection technique will not be allowed.

We M/s _____, confirm the above given information are true to the best of our knowledge.

Signature of the Participant _____

Seal of the Participant _____

Annexure-IV

Confirmation for proposed inspection technology

SL. No.	Pipeline Region	Pipeline Section Code	Pipeline Section Name	Diameter (inches)	Length (km)	Piggable / Unpiggable	Inspection Technique to be used (high resolution MFL/ Ultrasonic)	Inspection methodology (Conventional/ Batch Pigging /Crawler/Robotic/ Tethered)	Cleaning methodology (Conventional / Batch/ Other)	In case batch pigging for UT inspection – couplant to be used (Water/ Diesel/ Other)	Use of Temporary launcher Receiver (yes/No)
1	Eastern Fields	A	16" (400 mm) BAGHJAN EARLY PRODUCTION SYSTEM (EPS) TO CENTRAL GAS GATHERING STATION (CGGS) NATURAL GAS PIPELINE	16"	38.212	**Piggable**					
2	Eastern Fields	B	8" (200 mm) BAGHJAN EARLY PRODUCTION SYSTEM (EPS) TO Secondary TANK FARM (STF) CRUDE OIL DELIVERY PIPELINE	8"	37.898	**Piggable**					
3	Western Fields	C	8" (200 mm) WHS-MFK to Moran Tank Farm Crude oil delivery pipeline	8"	21.261	**Piggable**					
4	Central Fields	D	12" (300mm) Savitri Tiniali to Secondary Tank Farm Crude Oil Delivery pipeline	12"	25.95	**Piggable**					

In natural gas pipeline, use of Ultra-sonic inspection technique will not be allowed.

1.0 BUDGETARY QUOTATION REQUESTED ANNEXURE V

BUDGETARY QUOTATION

EOI No.: EOI/ OGPL&P/WC-242/020(A)/2025

Integrity Assessment of Difficult to Pig pipelines using Intrusive tools

Validity of the BQ- Min. 6 Months

S. No.	Job Description	Proposed Inspection tool [High Resolution *Axial MFL* or Ultra-sonic tool with XYZ mapping by conventional OR batch pigging OR by Robotic / Tethered / Crawler tools etc.	UOM	QTY	Unit Rate (including all taxes& duties but excluding GST)	Amount (including all taxes& duties but excluding GST) (if any)	GST %	Total applicable GST amount	Total amount including all taxes & duties and GST	Service Accounting Codes
	Inspection using High Resolution Axial MFL tool / Ultrasonic tool, including cleaning, EGP & XYZ mapping tools run using conventional pigging OR batch pigging OR Robotic / Tethered/ Crawler, pig tracking, providing magnet/markers, pull-through test, joint dig-verification, submission of reports and other associated works, civil works etc. as per the scope and activities detailed in the document.									
1	200mm (8") NB DIA (Pipeline Section with pigging facility)		**LS**	**1**						
2	200mm (8") NB DIA (Pipeline Section without pigging facility)		**LS**	**1**						
3	250mm (10") NB DIA (Pipeline Section with pigging facility)		**LS**	**1**						
4	250mm (10") NB DIA (Pipeline Section without pigging facility)		**LS**	**1**						
5	300mm (12") NB DIA (Pipeline Section with pigging facility)		**LS**	**1**						
6	300mm (12") NB DIA (Pipeline Section without pigging facility)		**LS**	**1**						
7	350mm (14") NB DIA (Pipeline Section with pigging facility)		**LS**	**1**						
8	350mm (14") NB DIA (Pipeline Section without pigging facility)		**LS**	**1**						
9	400mm (16") NB DIA (Pipeline Section with pigging facility)		**LS**	**1**						
10	400mm (16") NB DIA (Pipeline Section without pigging facility)		**LS**	**1**						
11	750mm (30") NB DIA (Pipeline Section with pigging facility)		**LS**	**1**						
12	750mm (30") NB DIA (Pipeline Section without pigging facility)		**LS**	**1**						

Please Note- Each segment/section length will be less than 50 km. There can be more than one segment/section of the same diameter but with varying lengths; hence, each such pipeline section will be considered as separate qty. (Please refer Annexure-I for general information). The pipeline fluid will be Crude Oil or Natural Gas.