

RIL (E&P)/HR/19-20/S106

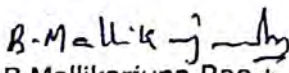
21<sup>st</sup> June '2019

**CERTIFICATE**

This is to certify that **Mr. Akshit Jha** , pursuing **B.Tech**  
( **Geo-science Engineering**) from **University of Petroleum And Energy**  
**Studies, Dehradun** has done Internship (Training) on the Topic "**Overview**  
**of KGD6 and Hydrate Formation and Inhibitors** " during 27.05.2019 to  
21.06.2019 to as a partial fulfillment for the award pursuing **B.Tech ( Geo-**  
**science Engineering)**

His conduct during this period was GOOD.

For RELIANCE INDUSTRIES LIMITED

  
B.Mallikarjuna Rao  
General Manager



**Petroleum E & P**

Plant : Onshore Terminal Site, Gadimoga Village & Post, Tallarevu Mandal, East Godavari District - 533 463.

Phone : +91-884-2979 100, Fax : +91-884-2977 434.

Vakalapudi Office : Supplybase Complex, C-51 Yard, Plot No. 9, Road No. 8, APIIC, IDA Park, Vakalapudi, Kakinada - 533 005.

Phone : +91-884-2974 101, Fax : +91-884-2974 201.

Regd. Office : Maker Chambers IV, 3rd Floor, 222, Nariman Point, Mumbai - 400 021, India.

CIN : L17110MH1973PLC019786 | [www.ril.com](http://www.ril.com)

# **WADIA INSTITUTE OF HIMALAYAN GEOLOGY**

**33 General Mahadeo Singh Road, Dehradun (India) – 248001**



**This is to certify that**

**Ms ANGEL BHARDWAJ**

**Of**

**University Of Petroleum and Energy Studies  
Bidholi, Dehradun.**

**Has successfully completed Summer Internship on the project titled**

**“EARTHQUAKE SOURCE STUDY OF KISHTWAR REGION THROUGH MOMENT TENSOR TECHNIQUE  
USING ISOLA SOFTWARE”**

**From 1<sup>st</sup> June to 1<sup>st</sup> August, 2019**

**Place: Dehradun**

**Date: 1<sup>st</sup> August 2019**

**Dr.Sushil Kumar  
Scientist „F“  
(Supervisor)**




# HALLBURTON

(82)

## Certificate

This is to certify that the work presented in this report is solely carried out by me and has not been submitted by me in part or full in any other institute/organization.

  
Student's signature

This is to certify that Mr. Shubham Gupta a student of B.Tech in Applied Petroleum Engineering with Specialization in Upstream from University of Petroleum and Energy Studies, Dehradun undergone her Internship with Halliburton Offshore Services Inc. from 17<sup>th</sup> June 2019 to 02<sup>nd</sup> August 2019 on "An Overview of the M/LWD Tools, Mud Motor & Operations".

This certificate is issued on request, as a certification of his project requirement.  
Date: 02<sup>nd</sup> August 2019

  
Alfas Arekhal

HR Business Partner Manager





# CERTIFICATE

This is to certify that this training report on " Reservoir Data Analysis " submitted to ONGC Videsh Limited, New Delhi is a bonafide work done by "SIDDHANT CHADHA" under my supervision from 10<sup>th</sup> June 2019 to 27<sup>th</sup> July 2019.

I wish him all the success in his future endeavors.



Mr. RAVIKUMAR GARCHAR

ASSISTANT EXECUTIVE ENGINEER (RESERVOIR)



Mr. S.S. SHARMA

CGM-Production

RP-VENEZUELA Business Unit

ONGC Videsh Limited

New Delhi

Place: ONGC Videsh Limited, New Delhi

Date: 27<sup>th</sup> July, 2019



# HALLIBURTON

(85)

## Certificate

*This is to certify that the work presented in this report is solely carried out by me and has not been submitted by me in part or full in any other institute/organization.*

*Siddhant*  
Student's signature

*This is to certify that Mr. Siddhant Dahiya a student of B.Tech in Applied Petroleum Engineering with Specialization in Upstream from University of Petroleum and Energy Studies, Dehradun undergone her Internship with Halliburton Offshore Services Inc. from 1<sup>st</sup> June 2019 to 02<sup>nd</sup> August 2019 on "Coiled Tubing Unit Equipment and Pre Job Testing".*

*This certificate is issued on request, as a certification of his project requirement.*

*Date: 02<sup>nd</sup> August 2019*

*For*  
*Alfas Arekka*

*HR Business Partner Manager*







सं.सीआईएमएफआर/एचआरडी/एसीडी टीआरजी./3/2019/8581

दिनांक/Dated: 17/7/2019

86

जिनसे यह संबन्धित है

प्रमाणित किया जाता है कि श्री सिद्धार्थ रावत, बी. टेक. (अप्लाइड पेट्रोलियम इंजीनियरिंग) विद्यार्थी, यूनिवर्सिटी ऑफ पेट्रोलियम एंड एनर्जी स्टडीज, देहरादून ने 17 जून, 2019 से 17 जुलाई, 2019 तक इस संस्थान में संस्थान के वरिष्ठ प्रधान वैज्ञानिक डॉ. वी.ए. मेंढे के मार्गदर्शन में अपना परियोजना कार्य "इन-सीटू गैस कंटेंट इवैल्यूएशन ऑफ़ शेल एंड कोल् रिजर्वॉयर" पर सम्पन्न किया है।

वह बहुत निष्ठावान और मेहनती है।

मैं इनके सफल भविष्य की कामना करता हूँ।

TO WHOM IT MAY CONCERN

This is to certify that **Mr. Siddhartha Rawat**, B.Tech. (Applied Petroleum Engineering) student of University of Petroleum and Energy Studies, Dehradun has done his project work on "IN – SITU GAS CONTENT EVALUATION OF SHALE AND COAL RESERVOIR" from 17<sup>th</sup> June, 2019 to 17<sup>th</sup> July, 2019 in this institute under the guidance of Dr. V.A. Mendhe, Sr. Principal Scientist of this institute.

He is very sincere and hard working.

I wish him all success in his career.

(दिलीप कुंभकार/Dilip Kumbhkar)

अनुभाग प्रमुख/ HOS

मा. सं.वि./ H.R.D



# HALLIBURTON

## Certificate

This is to certify that the work presented in this report is solely carried out by me and has not been submitted by me in part or full in any other institute/organization.

*Sneha Kumari*

Student's signature

This is to certify that Ms. Sneha Kumari a student of B.Tech in Applied Petroleum Engineering with Specialization in Upstream from University of Petroleum and Energy Studies, Dehradun undergone her Internship with Halliburton Offshore Services Inc. from 17<sup>th</sup> June 2019 to 02<sup>nd</sup> August 2019 on "Comprehensive Study of Drilling Fluids Based on Baroid Product Service Line".

This certificate is issued on request, as a certification of his project requirement.

Date: 02<sup>nd</sup> August 2019

*Alfas Arakkal*

HR Business Partner Manager







# CERTIFICATE OF COMPLETION

This is to certify that

SOMAY KASLIWAL of B.Tech. in Applied Petroleum Engineering  
(Upstream) from University of Petroleum and Energy Studies, Dehradun  
has successfully carried out summer internship at Oilmax Energy  
Private Limited, India from 03<sup>rd</sup> June, 2019 to 12<sup>th</sup> July, 2019.

His project was "Well Modeling for Temperature Gradient  
Analysis".

He has undertaken keen interest in his training and project work.

We wish him a bright future.

DR. RABI BASTIA  
President E&P



# CERTIFICATE OF COMPLETION

This is to certify that

**SPANDAN TYAGI** of B.Tech. in Applied Petroleum Engineering (Upstream) from University of Petroleum and Energy Studies, Dehradun has successfully carried out summer internship at **Oilmax Energy Private Limited, India** from **27<sup>th</sup> May, 2019 to 14<sup>th</sup> June, 2019.**

His project was "**Decline Curve Analysis**".

He has undertaken keen interest in his training and project work. His attendance was regular during the internship. He has worked to the best of his ability and to our satisfaction.

**We wish him a bright future.**



**DR. RABI BASTIA**

President E&P





पद्मजा माटे

मुख्य महाप्रबंधक(आर) & ट्रेनिंग संचालक  
आई. आर. एस., ओ. एन. जी. सी.

**Padmaja Matthey**

Chief Gen. Manager(R) & Training Coordinator  
IRS, ONGC

आगार अध्ययन संस्थान

ऑयल एण्ड नेचुरल गैस कॉर्पोरेशन लिमिटेड  
चांदखेड़ा परिसर, अहमदाबाद-380005, गुजरात, इंडिया  
Institute of Reservoir Studies

Oil and Natural Gas Corporation Limited  
Chandkheda Campus, Ahmedabad-380 005, Gujarat, India  
Phone : +91 79 2329 5620, Fax : +91 79 2329 1662  
Mob.: 09426614692, E-mail: matthey\_padmaja@ongc.co.in

## Internship Certificate

This is to certify that **Mr. Sumit Joshi, B.Tech (Applied Petroleum Engineering), UPES, Dehradun (Uttarakhand)** carried out internship project at Institute of Reservoir Studies (IRS), ONGC, Ahmedabad from 03<sup>rd</sup> June to 05<sup>th</sup> July 2019. During training with us, he has gained good knowledge in Tracer applications & Types, Lab. Experiments, Importance of breakthrough and submitted Project Report on "**Study of Tracer and its application in Reservoir characterization.**"

The student completed the project successfully, under the guidance of **Mr. R.C. Madhwal, GM (Reservoir)**. He is sincere and showed a positive attitude towards attainment of the project objective.

We wish a bright and successful career in his academic endeavors and life.

Place: Ahmedabad

Date: 05<sup>th</sup> July, 2019

*Padmaja Matthey*  
(Padmaja Matthey)  
CGM (Reservoir)  
Training Coordinator



91

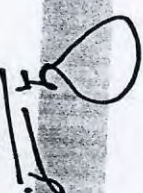
ऑयल एण्ड नेचुरल गैस कारपोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओएनजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

This is to certify that Mr./Ms. *Swaraj Kashyap* a student of "University of Petroleum & Energy Studies, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 03.06.2019 to 02.07.2019. He/She has successfully completed his/her project work on the "Well Designing". During the training, he/she took keen interest in completing the assigned work.

We wish him/her all the success in his/her academic endeavors and in life.

Date: 03.07.2019



In Charge

Students Academic Intensive Learning  
Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013

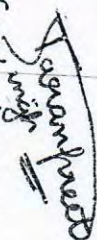


# HALLBURTON

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## Certificate

This is to certify that the work presented in this report is solely carried out by me and has not been submitted by me in part or full in any other institute/organization.

  
Student's signature

This is to certify that Mr. Tarangpreet Singh a student of B.Tech in Applied Petroleum Engineering with Specialization in Upstream from University of Petroleum and Energy Studies, Dehradun undergone his Internship with Halliburton Offshore Services Inc. from 17<sup>th</sup> June 2019 to 26<sup>th</sup> July 2019 on "Analysis of Drilling and Bits Performance & Parameter optimization".

This certificate is issued on request, as a certification of his project requirement.  
Date: 26<sup>th</sup> July 2019

  
Alfaz Areekal  
HR Business Partner Manager





(94)

ऑयल एण्ड नेचुरल गैस कारपोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओएनजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

This is to certify that Mr./Ms. *Udayan Arund* a student of "University of Petroleum & Energy Studies, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 07.06.2019 to 08.07.2019. He/She has successfully completed his/her project work on the topic "Prepare the well plan as per Estimated Pore and Fracture Profiles, for Wells to be drilled at Anonymous Field of ONGC, Complying with Applicable Criterion for Casing Seat Selection". During the training, he/she took keen interest in completing the assigned work.

We wish him/her all the success in his/her academic endeavors and in life.

Date: 01-08-2019



In Charge

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013  
Students Academic Intensive Learning



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July 15, 2019

Mr. Udit Srivastava  
UPES  
Dehradun

Essar Oil and Gas Exploration and Production Ltd.  
Essar House  
11 K. K. Marg  
Mahalaxmi  
Mumbai - 400 034  
India

CIN : U11203GJ2016PLC091903

T +91 22 6660 1100

F +91 22 6666 9429

E eogepi@essarenp.co.in

www.essar.com

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that Mr. Udit Srivastava has completed his internship with us from 17<sup>th</sup> June, 2019 to 15<sup>th</sup> July, 2019.

During his Summer Internship, he has worked on the following assignment:

- Production Optimization of Sucker Rod Pump Wells using Prosper

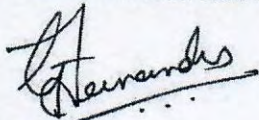
He has worked with dedication, sincerity and successfully completed the project assigned to him.

We wish him success in his future endeavors.

Thanking you.

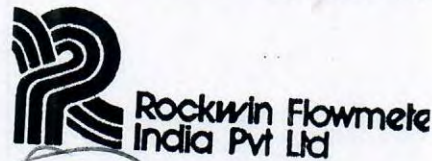
Yours faithfully,

For Essar Oil and Gas Exploration and Production Limited



Glynniss Fernandes  
Head – Human Resources

Ph : 0120 4538230, 2895401 Fax : 0120-2895450, Email : rockwin @vsnl.com  
DIN NO. 00190292 & 00190345, CIN NO. U74899DL1979PTC009556



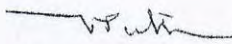
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### CERTIFICATE

This is to certify that **Mr. Vaibhav Mishra**, Student of B. Tech from University of Petroleum and Energy Studies, Dehradun, has undergone vocational Training from 01.06.2019 to 01.07.2017 at Rockwin Flowmeter India Pvt Ltd, B-24/IV Sahibabad Industrial Area, Ghaziabad- 201010. His training covered the functioning of various types of Flow Meter and their calibration, which are manufactured by us. His performance and conduct was very good during this period.

Rockwin Flowmeter India Pvt Ltd wishes him best of luck for his career and future endeavors.

For Rockwin Flowmeter (I) Pvt. Ltd.

  
V. Patterson  
Senior Manager



Works : B-24/IV, Sahibabad Industrial Area, Ghaziabad-201010. Phone : 0120 4538230, 2895401 Fax: 0120- 2895451  
Mumbai : 402, Terminal 9 Building, Nehru Road Extension, Vile Parle (East), Mumbai - 400 099. Phone: 26146274, Fax: 2 611813  
Kolkata : Oriental House, Suite-GC, 6-C Lala Lajpat Rai Sarani (Elgin Road) Kolkata - 700 020. Phone : 22809774, 22809775, Fax: 033 -2280977  
Chennai : 85/10, Sd. Bannam Avenue, Pantheon Road, Emore, Chennai - 600 008 Phone : 044 - 28529176, 2852956





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Case No.: [CASE NO. 5076148] / EMPLOYEE NO. 280773 / SSO. 212768192/ SC

**PRIVATE AND CONFIDENTIAL**  
NARAIN, VAIBHAV  
India

August 6, 2019

**SERVICE CERTIFICATE**

This is to certify that **VAIBHAV NARAIN** worked for **Baker Hughes Singapore Pte** as an "Intern" at our India office from June 3, 2019 to July 31, 2019.

This letter has been issued to **VAIBHAV NARAIN** upon his own request with no liability whatsoever from the Company.

This certificate has been issued at the request of the aforementioned employee without any responsibility on the part of the company.

Should you require any additional details or information please do not hesitate to contact us at telephone number **+971 4 811 4005**.

Sincerely yours,

*Soha Chahine*

**Soha Chahine**  
**People Operations**



# Training Completion Certificate

This is to certify that Mr/Ms. *Vijay Kumar* a student of "UPES, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 06.06.2019 to 06.07.2019. He/She has successfully completed his/her project work on the topic "Decline Curve Analysis (Modified Hyperbolic Decline)". During the training, he/she took keen interest in completing the assigned work.

We wish him/her all the success in his/her academic endeavors and in life.

Date: 14-08-2019

In Charge

Students Academic Intensive Learning  
Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



# Training Completion Certificate

This is to certify that Mr./Ms. Vishal Rana a student of "UPES, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 03.06.2019 to 02.08.2019. He/She has successfully completed his/her project work on the topic "Classical Reservoir Engineering Methods & Simulation". During the training, he/she took keen interest in completing the assigned work.

We wish him/her all the success in his/her academic endeavors and in life.

Date: 02-08-2019

In-Charge

Students Academic Intensive Learning  
Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of STD Award 2008 & 2013

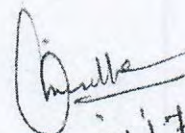




# CSIR-Central Institute of Mining and Fuel Research, Dhanbad

## CANDIDATE'S CERTIFICATE

This is to certify that Mr Vishal Verma, B. Tech. Petroleum 7<sup>th</sup> Semester of UPES, Dehradun has received the training for the period of 2<sup>nd</sup> June, 2019 to 30<sup>th</sup> July, 2019 on exploration and laboratory procedures. Mr Vishal learned the determination of in-situ gas content in the field for shale gas exploration and potentiality at Rangamati, Raniganj basin and laboratory analysis like proximate, high pressure methane sorption isotherms and low-pressure nitrogen adsorption isotherm for surface area, pore size and pore volume estimation. Mr Vishal, also develop a software (python based) for estimation of geo-mechanical properties of sandstone and submitted his report entitled "LABORATORY MEASUREMENT OF PHYSICO AND DEVELOPMENT OF SOFTWARE" as a part of his B.Tech study course. Mr Vishal has submitted the report to the Rock-Mechanics Lab of CSIR-Central Institute of Mining and Fuel Research, Dhanbad, Jharkhand is an authentic record of his own work carried out in the supervision of undersigned and Dr. Saurav Rukhaiyar, Scientist, Rock-Mechanics Lab.

  
31/7/19

**Dr. V.A. Mendhe**  
Sr. Principal Scientist  
Non-Conventional Gases  
CSIR-CIMFR, Dhanbad




**Corporate Office** : C-2, Sector - 57, Noida - 201 301 (U.P.) (India)  
**Tel.** : +91-120-2588385, 86, 87, 88, 89, 90 • **Fax** : +91-120-2589861, 62  
**E-mail** : corporate@hlsasia.com • **Website** : www.hlsasia.com • **GST No.** : 09AAACH0627H1ZU

July 12, 2019

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**Certificate of Completion**

This is to certify that the summer internship report entitled "**Formation Evaluation using Conventional wireline logging and Advanced logging techniques**" from 3<sup>rd</sup> June 2019 to 12<sup>th</sup> July 2019 submitted by **Yash Bansal** of University of Petroleum and Energy Studies, Dehradun for partial fulfillment of requirements for B.Tech Petroleum Engineering is a bonafide record of the internship work carried out by him under my supervision and guidance. The content of the report, in full or parts have not been submitted to any other Institution or University for the award of any other degree or diploma. The content has also borrowed knowledge from various web books and documents having sometimes reproduced that information but without any intentions of copyrights violations. For such unintentional violation I shall not be held liable.

  
**Ajay Kumar**  
**AVP & Head (Formation Evaluation Center)**  
**For HLS Asia Limited**





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ऑयल एण्ड नेचुरल गैस कारपोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओएनजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

This is to certify that Mr./Ms. *Natnesh Tripathi* a student of "University of Petroleum and Energy Studies, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 03.06.2019 to 02.07.2019. He/She has successfully completed his/her project work on "Directional Drilling". During the training, he/she took keen interest in completing the assigned work.

*We wish him/her all the success in his/her academic endeavors and in life.*

Date: 02.07.2019

*[Signature]*

In Charge

Students Academic Intensive Learning  
Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



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हाइड्रोकार्बन महानिदेशालय

पेट्रोलियम और प्राकृतिक गैस मंत्रालय  
भारत सरकार

**DIRECTORATE GENERAL OF HYDROCARBONS**  
Ministry of Petroleum & Natural Gas  
Government of India

DGH/HR & ADMIN/ST/2019/17

28.06.2019

**TO WHOM IT MAY CONCERN**

This is to certify that Mr. Yojan Saini, a student of B.Tech (Applied Petroleum Engineering) with specialization in Upstream from UPES, Dehradun, India has successfully completed four (04) weeks summer training at Directorate General of Hydrocarbons, Noida, during the period 03.06.2019 to 28.06.2019.

During the training period Mr. Yojan Saini has completed assigned project on "Estimation of STOIIP and GIIP. 3D-3 phase numerical simulation of undersaturated oil reservoir". Classroom training was also imparted to give a comprehensive understanding of the Petroleum Industry with particular reference to role of petroleum engineering.

Conduct and performance of Mr. Yojan Saini was found to be good during the training period.

DGH wishes him a successful career.

(R.K. Sinha)  
HOD (HR & Admin)









Sl. No.	Name of the Candidate	Registration No.	Company	Location	Project Description
90	Sudhanshu Singh	500052690	IFS ONGC	Chandkheda, Gujarat	Study of Taser and its Application in Reservoir Characterization
91	Sumit Joshi	500052718	ONGC	Dehradun	Well Declination
92	Swaral Kashyap	500052728	ONGC	Mumbai - Kakinada	Analysis of Drilling & Bit Performance and Parameter Optimization to develop a Driller's Roadmap
93	Tanupreet Singh	500052815	Institute of Drilling Technology	Dehradun	Oil and Gas well design and Construction
94	Toufiquar Bhagwan Reddy	500053076	ONGC	Dehradun	Prepare the well plan as per estimated pore and fracture profiles, for wells to be drilled at anonymous field of ONGC, complying with applicable criterion for casing seat selection
95	Udayan Anand	500052728	ONGC	Dehradun	Optimization of Sucker rod pump Wells using PROSPER
96	Udit Srivastava	500051995	ONGC	Dehradun	Barics of well logging and data interpretation
97	V N Phani Kumar	500052603	Rockwin Flowmeters Pvt Ltd	Dehradun	Calibration and functioning of Flowmeter
98	Vishal Verma	500052741	Rockwin Flowmeters Pvt Ltd	Dehradun	Functioning and calibration of Flowmeter
99	Vishal Verma	500052741	Rockwin Flowmeters Pvt Ltd	Dehradun	Functioning and calibration of Flowmeter
100	Vikrant Yadav	500052634	ONGC	Dehradun	Declination of wells (modified hyperbolic method)
101	Vishal Bana	500052634	KDMPE ONGC	Dehradun	Declination of wells (modified hyperbolic method)
102	Vishal Verma	500052348	CSIR-CIMR	Dehradun	Classical Reservoir Engineering and Simulation
103	Vishal Verma	500052777	ILIS Asia Ltd.	Dehradun	Laboratory Measurement of Physical Mechanical Properties of Sandstone and Development of Software
104	Vishal Verma	500052777	ILIS Asia Ltd.	Dehradun	Formation Evaluation Using Conventional Wireline And Advanced Logging Techniques
105	Vishal Verma	500052664	ONGC LTD	Dehradun	Directional Drilling
106	Vijay Salmi	500052756	Directorate general of hydrocarbons	Noida	Estimation of STOHP and GIP, 3-D 3 phase numerical simulation of undersaturated oil reservoir.

23-Siddh

24-Varnu

25-Deepak Singhania

Abhishek Dhanik and Sudhanshu Singh

26-7 abhishek

NOT SUBMITTED :

1) Abhoday

2) Anshul

3) ~~Mohit~~

4) Shouryamani

5) Sahar

6) Deepak

7) Jyoti

8) Varun

9) Sudhanshu

10) Abhishek Dhanik





## Certificate

The Summer Internship Project titled **"Study of Artificial Lifts with Focus on Gas Lift Production System"** has been successfully completed by **Mr. Abheer Mehrotra**, under my guidance and supervision from **03<sup>rd</sup> June 2019 to 12<sup>th</sup> July 2019** for partial completion of his degree, B. Tech in Applied Petroleum Engineering with Specialization in Upstream from Uniiversity of Petroleum and Energy Studies.

The project by him was carried out with full sincerity and dedication.



# Training Completion Certificate

*This is to certify that Mr./ Ms. Abhijit Negi a student of "UPES, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 03.06.2019 to 03.07.2019. He/She has successfully completed his/her project work on the "Well Control". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

**Date: 11-07-2019**

In Charge

Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013





# Oil and Natural Gas Corporation Limited

## Ankleshwar Asset

### Certificate


SI.No. 21

This is to certify that Mr./Ms. Aditya Axoda

a student of B.Tech.(Applied Petroleum Engineering), 6<sup>th</sup> Sem, 3<sup>rd</sup> Year from  
UPES, Dehradun has undergone Summer/Winter

Training at ONGC from 04/06/2019 to 03/07/2019. He/She has successfully completed  
his/her Project Work on "Artificial Lift design & Production facilities"  
at Surface Team, ONGC, Ankleshwar Asset in the discipline of  
Applied Petroleum Engineering.

During the training, he/she took keen interest in the assigned work. We wish him/her all success in  
his/her academic endeavours and life.

  
अ.म. खात्री / A. M. KHATRI  
मुख्य प्रबंधक (अ.सं.) / Chief Manager (MR)  
आंकलेश्वर, अकलेश्वर / ONGC, Ankleshwar

Co-ordinator Training  
ONGC, Ankleshwar

Date: 03/07/2019.





ऑयल एंड नेचुरल गैस कारपोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओएनजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

*This is to certify that Mr./Ms. Aman Pandey a student of "UPES, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 17.06.2019 to 16.07.2019. He/She has successfully completed his/her project work on the topic "Designing of Formate based Drilling Fluid using barite and density material". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

**Date: 16-07-2019**

**In Charge**

**Students Academic Intensive Learning**

**Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013**



**Schlumberger**

**Certificate of Internship**

This is to certify that

*Anindya Sharma*

has successfully completed the

**Schlumberger Internship Program 2019**

with ISM segment from 1<sup>st</sup> June to 31<sup>st</sup> July, 2019.

*Karthik Naib*

**Karthik Naib**  
**INM Recruiting Manager**



(79)

ऑयल एण्ड नेचुरल गैस कारपोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओएनजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

*This is to certify that Mr./Ms. Anurag Rana a student of "University of Petroleum and Energy Studies, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 04.06.2019 to 04.07.2019. He/She has successfully completed his/her project work on the topic "Carbon Sequestration". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

**Date: 13-08-2019**



**In Charge**

**Students Academic Intensive Learning**

**Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013**





सं.सीआईएमएफआर/एचआरडी/एसीडी टीआरजी./3/2019/8576

दिनांक/Dated: 17/7/2019

## जिनसे यह संबन्धित है

प्रमाणित किया जाता है कि श्री अर्पित गुप्ता, बी. टेक. (अप्लाइड पेट्रोलियम इंजीनियरिंग) विद्यार्थी, यूनिवर्सिटी ऑफ पेट्रोलियम एंड एनर्जी स्टडीज, देहरादून ने 17 जून, 2019 से 17 जुलाई, 2019 तक इस संस्थान में संस्थान के वरिष्ठ प्रधान वैज्ञानिक डॉ. वी.ए. मेंढे के मार्गदर्शन में अपना परियोजना कार्य "रिज़र्व एस्टिमेशन ऑफ़ शेल गैस एंड कोलबेड मीथेन रिजर्वायर" पर सम्पन्न किया है।

वह बहुत निष्ठावान और मेहनती है।

मैं इनके सफल भविष्य की कामना करता हूँ।

## TO WHOM IT MAY CONCERN

This is to certify that **Mr. Arpit Gupta**, B.Tech. (Applied Petroleum Engineering) student of University of Petroleum and Energy Studies, Dehradun has done his project work on "**Reserve Estimation of Shale Gas and Coalbed Methane Reservoir**" from 17<sup>th</sup> June, 2019 to 17<sup>th</sup> July, 2019 in this institute under the guidance of Dr. V.A. Mendhe, Sr. Principal Scientist of this institute.

He is very sincere and hard working.

I wish him all success in his career.

*(Signature)*  
17/7/19

(दिलीप कुंभकार/Dilip Kumbhkar)

अनुभाग प्रमुख/ HOS

मा. सं.वि./ H.R.D



# Training Completion Certificate

*This is to certify that Mr. /Ms.Arpit Kumar Gupta a student of "UPES, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 04.06.2019 to 03.07.2019. He/She has successfully completed his/her project work on the "Permeability calculation in uncored Wells and Intervals with the help of FZI approach and multiple linear regression analysis". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

Date: 04.07.2019

  
In Charge  
Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



Essar Oil and Gas Exploration and Production Ltd.  
AN 81 B, Sector 2B  
Martin Luther King Road  
Bidhan Nagar  
Durgapur - 713 212  
India

CIN : U11203GJ2016PLC091903

T +91 343 253 2202

F +91 343 253 2201

E eogepl@essarenp.co.in

www.essar.com

July 15, 2019

Mr. Aryan Sharma  
UPES, Dehradun

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that **Mr. Aryan Sharma** has completed his internship with us from **10<sup>th</sup> June, 2019 to 15<sup>th</sup> July, 2019.**

During his training, he worked on the following assignments:

- **Overview of CBM Raniganj field and analysis of various workover problems in CBM with main focus on fishing**

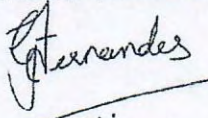
He has worked with dedication, sincerity and successfully completed the project assigned to him.

We wish him success in his future endeavors.

Thanking you.

Yours faithfully,

For Essar Oil and Gas Exploration and Production Limited



**Glyniss Fernandes**  
Head – Human Resources



# HALLIBURTON

## Certificate

This is to certify that the work presented in this report is solely carried out by me and has not been submitted by me in part or full in any other institute/organization.

*Abdul Karim*  
Student's signature

This is to certify that Mr. Ashish Ranjan a student of B.Tech in Applied Petroleum Engineering with Specialization in Upstream from University of Petroleum and Energy Studies, Dehradun undergone his Internship with Halliburton Offshore Services Inc. from 17<sup>th</sup> June 2019 to 02<sup>nd</sup> August 2019 on "Overview of Well Completion design, Equipment & its Accessories".

This certificate is issued on request, as a certification of his project requirement.

Date: 27<sup>th</sup> August 2019

*Affas Arakkal*  
HR Business Partner Manager





# Training Completion Certificate

This is to certify that Mr./Ms. *Aswini Agarwal* a student of UPES, Dehradun has undergone Summer/Industrial Training at ONGC, Dehradun from 27.05.2019 to 27.06.2019. He/She has successfully completed his/her project work on the "Chemical Treatment Processes for Water Injection". During the training, he/she took keen interest in completing the assigned work.

We wish him/her all the success in his/her academic endeavors and in life.

Date: 04.07.2019

In Charge

Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013





## OGD Services Limited

(f.k.a., Essar Oilfield Services India Limited)

Registered Office

Tower - II

Equinox Business Park

L. B. S. Marg

Kurla (West)

Mumbai - 400 070

Maharashtra, India

Corporate Identity Number

U93090MH2006PLC163779

T +91 22 6660 1100

F +91 22 2354 4312

E: [contact@ogdservices.co.in](mailto:contact@ogdservices.co.in)

Date: 5<sup>th</sup> August, 2019

### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. Ayush Nayak, student of University of Petroleum and Energy Studies Energy Acres, PO Bidholi, Via Prem Nagar Dehradun, Uttarakhand-248007, has successfully completed an internship at our Land Rig Drilling Project from 19<sup>th</sup> June, 2019 to 18<sup>th</sup> July, 2019

During the period of his internship, he was imparted training in the "Challenges Faced and Control Measures for Exploring HPHT Wells". He has submitted a detailed report upon completion of this training.

For OGD Services Limited



Authorize Signatory



Essar Oil and Gas Exploration and Production Ltd.  
AN 81 B, Sector 28  
Martin Luther King Road  
Bichan Nagar  
Durgapur - 713 212  
India

CIN : U11203GJ2016PLC091203  
T +91 343 253 2202  
F +91 343 253 2201  
E [esops@essarenpl.co.in](mailto:esops@essarenpl.co.in)  
[www.essar.com](http://www.essar.com)

July 15, 2019

Mr. Bakul Chaturvedi  
UPES, Dehradun

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. Bakul Chaturvedi has completed his internship with us from 10<sup>th</sup> June, 2019 to 15<sup>th</sup> July, 2019.

During his training, he worked on the following assignments:

- Overview of CBM Raniganj field and analysis of various workover problems in CBM with main focus on fishing

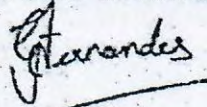
He has worked with dedication, sincerity and successfully completed the project assigned to him.

We wish him success in his future endeavors.

Thanking you.

Yours faithfully,

For Essar Oil and Gas Exploration and Production Limited



Glyniss Fernandes  
Head – Human Resources





(Formerly HLS India Limited)

(A Foreign Collaboration with HALLIBURTON ENERGY SERVICES Inc., U.S.A.)

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Registered Office : 109, Aurobindo Place, Hauz Khas, New Delhi – 110016 (India)  
Tel : 91-11-26968194, 26569441 • Fax : 91-11-26968195

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## Certificate of Completion

This is to certify that **Mr. Bhavya Gautam** , B.Tech (Applied Petroleum Engineering Upstream) student of **UPES, Dehradun** has successfully completed his internship on “Wireline Logging and Perforation” from **1<sup>st</sup> Jun,2019** to **5<sup>th</sup> Jul,2019** at **HLS Asia Ltd , Gandhinagar** under the guidance of Mr Pravesh Gupta, Technical Manager, HLS Asia Ltd Gandhinagar.

A circular stamp of HLS Asia Ltd Gandhinagar with a handwritten signature of Pravesh Gupta over it.

**(Pravesh Gupta)**

Technical Manager

HLS Asia Ltd, Gandhinagar

Date:5-Jul-2019

Certificate No: HLSA/Intern/2019006





ऑयल एण्ड नेचुरल गैस कॉर्पोरेशन लिमिटेड

Oil and Natural Gas Corporation Limited

ऑयलगीसी अकादमी, देहरादून

ONGC Academy, Dehra Dun

ISO 9001 : 2015 Certified

# Training Completion Certificate

This is to certify that Mr./Ms. Bhanu Kumar a student of "VJES, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 03.06.2019 to 03.07.2019. He/She has successfully completed his/her project work on the "Well Control". During the training, he/she took keen interest in completing the assigned work.

We wish him/her all the success in his/her academic endeavors and in life.

Date: 08.07.2019

In Charge

Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



R810216030  
500052015 (4<sup>th</sup> Semester)

ऑयल एंड नेचुरल गैस कॉर्पोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओयलजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

This is to certify that Mr./Ms. Tatiparthi Bhargav Reddy a student of "University of Petroleum studies, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 03.06.2019 to 02.07.2019. He/She has successfully completed his/her project work on "Oil & Gas Well Design And Construction". During the training, he/she took keen interest in completing the assigned work.

We wish him/her all the success in his/her academic endeavors and in life.

Date: 02.07.2019

Chair  
In Charge

Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013

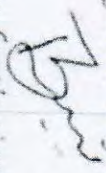


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# HALLIBURTON

## Certificate

This is to certify that the work presented in this report is solely carried out by me and has not been submitted by me in part or full in any other institute/organization.

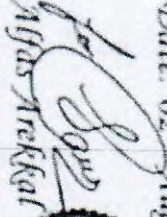


Student's signature

This is to certify that Mr. Bhagya Chandani a student of B.Tech in Applied Petroleum Engineering with Specialization in Upstream from University of Petroleum and Energy Studies, Dehradun undergone her Internship with Halliburton Offshore Services Inc. from 17<sup>th</sup> June 2019 to 02<sup>nd</sup> August 2019 on "Coiled Tubing Unit Equipment and Base Operations".

This certificate is issued on request, as a certification of his project requirement.

Date: 02<sup>nd</sup> August 2019



HR Business Partner Manager



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**Schlumberger**

# **Certificate of Internship**

This is to certify that

*Bhishm Sharma*

has successfully completed the

**Schlumberger Internship Program 2019**

with ISM segment from 1<sup>st</sup> June to 31<sup>st</sup> July, 2019.

*Karthik Naib*

**Karthik Naib**  
**INM Recruiting Manager**



(21)



## OGD Services Limited

(f.k.a., Essar Oilfield Services India Limited)

Registered Office

Tower - II

Equinox Business Park

L. B. S. Marg

Kurla (West)

Mumbai - 400 070

Maharashtra, India

Corporate Identity Number

U93090MH2006PLC163779

T + 91 22 6660 1100

F + 91 22 2354 4312

E: [contact@ogdservices.co.in](mailto:contact@ogdservices.co.in)

Date: 5<sup>th</sup> August, 2019

### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. Chakka Naga Raghavendra Gupta, student of University of Petroleum and Energy Studies Energy Acres, PO Bidholi, Via Prem Nagar Dehradun, Uttarakhand-248007, has successfully completed an internship at our Land Rig Drilling Project from 19<sup>th</sup> June, 2019 to 18<sup>th</sup> July, 2019

During the period of his internship, he was imparted training in the "Challenges Faced and Control Measures for Exploring HPHT Wells". He has submitted a detailed report upon completion of this training.

For OGD Services Limited

A handwritten signature in black ink, appearing to be 'R. N. Gupta'.



Authorize Signatory





पद्मजा माटे

मुख्य महाप्रबंधक(आर) & ट्रेनिंग संचालक  
आई. आर. एस., ओ. एन. जी. सी.

**Padmaja Matthey**

Chief Gen. Manager(R) & Training Coordinator  
IRS, ONGC

आगार अध्ययन संस्थान

ऑयल एण्ड नेचुरल गैस कॉर्पोरेशन लिमिटेड

चांदखेड़ा परिसर, अहमदाबाद-380005, गुजरात, इंडिया

Institute of Reservoir Studies

Oil and Natural Gas Corporation Limited

Chandkheda Campus, Ahmedabad-380 005, Gujarat, India

Phone : +91 79 2329 5620, Fax : +91 79 2329 1662

Mob.: 09426614692, E-mail: matthey\_padmaja@ongc.co.in

## Internship Certificate

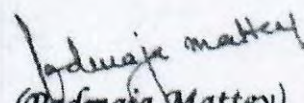
This is to certify that **Mr. Chirag Garg, B.Tech (Applied Petroleum Engineering), UPES, Dehradun (Uttarakhand)** carried out internship project at Institute of Reservoir Studies (IRS), ONGC, Ahmedabad from 03<sup>rd</sup> June to 12<sup>th</sup> July 2019. During training with us, he has gained good knowledge in Behaviour & Compositional analysis of Reservoir fluid sample and submitted Project Report on "**PVT Analysis of Reservoir Fluid Sample.**"

The student completed the project successfully, under the guidance of **Ms. Anita Sarkar, GM (Reservoir)**. He is sincere and showed a positive attitude towards attainment of the project objective.

*We wish a bright and successful career in his academic endeavors and life.*

**Place: Ahmedabad**

**Date: 12<sup>th</sup> July, 2019**

  
(Padmaja Matthey)  
CGM (Reservoir)  
Training Coordinator



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ऑयल एण्ड नेचुरल गैस कारपोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओएनजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

This is to certify that Mr./Ms. Deepak Bista a student of UPSES, Dehradun has undergone Summer/Industrial Training at ONGC, Dehradun from 17.06.2019 to 16.07.2019. He/She has successfully completed his/her project work on the topic "Designing of Formate based Drilling fluid using barite and density material". During the training, he/she took keen interest in completing the assigned work. We wish him/her all the success in his/her academic endeavors and in life.

Date: 16-07-2019

In Charge

Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013





24

## Reliance Industries Limited

Reliance Industries Limited, Petroleum (E & P), CoalBed Methane Project (CBM), Village & PO: Lalpur,  
Tehsil -Burhar Dist.: Shahdol, Madhya Pradesh 484110, India, Phone: +91-07652-247000

RIL (E&P)/HR/CBM/S/19-20/07

29th June, 2019

# Certificate

### To whomsoever it may concern

This is to certify that Mr. Divyam Sood pursuing B.Tech Petroleum Engineering (Major in Upstream) from UPES, Dehradun has done a project work titled on "Empirical Establishment of Inflow Performance Relationship for a CBM Well" at our CBM Project Site, during May 31, 2019 to June 29, 2019 as a partial fulfillment for the award of degree of B.Tech Petroleum Engineering (Major in Upstream).

His conduct during this period was GOOD.

For RELIANCE INDUSTRIES LIMITED

  
Authorized Signatory



25



Date: July 31, 2019

**To Whomsoever It May Concern**

This is to certify that Mr. Divyansh Bajpai, a student of Bachelor of Technology in Applied Petroleum Engineering with Specialization in UPSTREAM, University of Petroleum and Energy Studies, Dehradun, has undergone for summer internship program in our organization during the period from July 1, 2019 to July 31, 2019. He has successfully completed his project work on "Designing of 2D & 3D Seismic Surveys."

During the internship he demonstrated good design skills with a self-motivated attitude to learn new things. His performance exceeded expectations and was able to complete the project successfully on time.

We wish him all the best for his future endeavors.

Warm Regards,

**For Advent Oilfield Services Private Limited**

**Jignesh Mistry  
Manager - HR**





26

# HALLIBURTON

## Certificate

*This is to certify that the work presented in this report is solely carried out by me and has not been submitted by me in part or full in any other institute/organization.*

*Fahad*

*Student's signature*

*This is to certify that Mr. Fahad Khan a student of B.Tech in Applied Petroleum Engineering with Specialization in Upstream from University of Petroleum and Energy Studies, Dehradun undergone his Internship with Halliburton Offshore Services Inc. from 17<sup>th</sup> June 2019 to 02<sup>nd</sup> August 2019 on "Comprehensive Study of Drilling Fluids Based on Baroid Product Service Line".*

*This certificate is issued on request, as a certification of his project requirement.*

*Date: 02<sup>nd</sup> August 2019*

*Alfas Arekhal*

*HR Business Partner Manager*





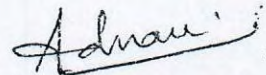
# CERTIFICATE

(27)

This is to certify that, Mr. Gaurav Kataria has undergone Industrial / Summer Training at Oil and Natural Gas Corporation Limited, IOGPT for a period of five weeks starting from 03-06-2019 to 05-07-2019 under my guidance.

His performance has been satisfactory, and he has shown keen interest to understand concepts of the subject assigned to him so as to fulfil the requirement for successful completion of the training. This document is a bona fide testimony of the training undergone and works carried out by him during the training period.

A completion certificate is separately being issued by our training center "IOGPT, ONGC, Panvel" for successful completion of his training.



Mr. Adnan Ansari  
Executive Engineer (Production)  
Deep Water & Field Developments  
IOGPT, ONGC Limited  
Panvel, Maharashtra - 410221

Date: 05-07-2019



**DGH**

28

# हाइड्रोकार्बन महानिदेशालय

पेट्रोलियम और प्राकृतिक गैस मंत्रालय  
भारत सरकार

## DIRECTORATE GENERAL OF HYDROCARBONS

Ministry of Petroleum & Natural Gas  
Government of India

DGH/HR & ADMIN/ST/2019/18

28.06.2019

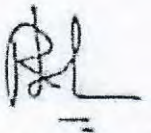
### TO WHOM IT MAY CONCERN

This is to certify that Mr. Gopesh Sharma, a student of B.Tech (Applied Petroleum Engineering) with specialization in Upstream from UPES, Dehradun, India has successfully completed four (04) weeks summer training at Directorate General of Hydrocarbons, Noida, during the period 03.06.2019 to 28.06.2019.

During the training period Mr. Gopesh Sharma has completed assigned project on "Estimation of STOIP and GIIP. 3D-3 phase numerical simulation of undersaturated oil reservoir". Classroom training was also imparted to give a comprehensive understanding of the Petroleum Industry with particular reference to role of petroleum engineering.

Conduct and performance of Mr. Gopesh Sharma was found to be good during the training period.

DGH wishes him a successful career.



(R.K. Sinha)  
HOD (HR & Admin)





29



OIL AND NATURAL GAS CORPORATION LIMITED  
MEHSANA ASSET, KDM BHAVAN, PALAVASANA, MEHSANA-384003

*Certificate of Training*

*This certificate is issued to Mr. Chandra Singh, Son of*

*Mr. Hardev Singh, of Panchsara and Son, Panchsara, Panchsara,*

*Mehsana, Mehsana District, Mehsana, Mehsana District, Mehsana,*

*Mehsana, Mehsana District, Mehsana, Mehsana District, Mehsana,*

*Mehsana, Mehsana District, Mehsana, Mehsana District, Mehsana,*

*Mehsana, Mehsana District, Mehsana, Mehsana District, Mehsana,*

*Mehsana, Mehsana District, Mehsana, Mehsana District, Mehsana,*

*Mehsana, Mehsana District, Mehsana, Mehsana District, Mehsana,*

*Mehsana, Mehsana District, Mehsana, Mehsana District, Mehsana,*

*Kalambhais*

*Training Officer*

*Mr. Chandra Singh*



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# CERTIFICATE

This is to certify that, **Mr. Hardik Batra** has undergone Industrial / Summer Training at **ONGC and Natural Gas Corporation Limited, IOGPT** for a period of **five weeks starting from 03-06-2019 to 05-07-2019** under my guidance.

His performance has been satisfactory, and he has shown keen interest to understand concept of the subject assigned to him so as to fulfil the requirement for successful completion of the training. This document is a bona fide testimony of the training undergone and works carried out by him during the training period.

A completion certificate is separately being issued by our training center "IOGPT, ONGC Panvel" for successful completion of his training.

शगुन देवशाली  
SAGUN DEVSHALI  
सहायक अधिशासी अभियंता (उत्पादन)  
Asstt. Ex. Engineer (Production) Devshali  
ONGC, Panvel  
Artificial Lift Department, IOGPT  
ONGC, Panvel, Maharashtra - 410202

Date: 05-07-2019



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Ref. No. - CIL/HR/SS/997

06 August, 2019

To

Mr. Harsh Arya  
UPES, Dehradun

**Sub: Internship Letter**

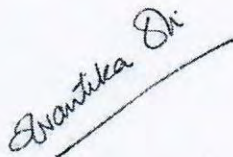
This is to certify that Harsh Arya has completed his internship with Cairn Oil & Gas - Vedanta Limited, from 03 June, 2019 to 02 August, 2019.

**Project Title:**

**Effectiveness and Sustenance Of Tubing Scraping in Mangala Producers & H2S Formation in the Reservoir and its Treatment.**

Harsh Arya was methodical and diligent in his approach and had met the expectations of the projects.

Yours truly,  
For Vedanta Limited (Oil & Gas Business)



**Avantika Oli**  
Officiating - Chief Human Resources Officer (CHRO)

**VEDANTA LIMITED**  
(Formerly known as Sesa Sterlite Limited)

**Cairn Oil & Gas** : DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram-122002, Haryana, India  
T +91-124 459 3000 F +91-124 414 5612 | [www.cairnindia.com](http://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](http://www.vedantalimited.com)

CIN: L13209MH1965PLC291394



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GE Oil & Gas

GE OIL & GAS INDIA PRIVATE  
LIMITED  
DLF Cyber City  
DLF Building 7A  
Gurgaon  
HR 122002

Date: 7/31/2019(MM/DD/YYYY)

To Whomsoever it may concern

This letter is to certify that Harsh Dahiya (212748015) has worked as an LEAD Intern/Co-op from 6/3/2019(MM/DD/YYYY) to 7/31/2019(MM/DD/YYYY).

Harsh Dahiya has successfully completed the internship

For GE OIL & GAS INDIA PRIVATE LIMITED,

Rajeev Sharma

People Operations

GE South Asia

GE OIL & GAS INDIA PRIVATE LIMITED, Registered Office: S.F. No. 608 Chettipalayam Road, Eachanari P.O Coimbatore -641021 Tamil Nadu (India) CIN : U29100TZ1995PTC014379

RAJEEV SHARMA  
2019/08/01  
I hereby certify the accuracy and integrity of this document





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## Reliance Industries Limited

Reliance Industries Limited, Petroleum (E & P), CoalBed Methane Project (CBM), Village & PO: Lalpur,  
Tehsil :Burhar Dist.: Shahdol, Madhya Pradesh 484110, India. Phone: +91-07652-247000

RIL (E&P)/HR/CBM/S/19-20/022

17<sup>th</sup> July 2019

# Certificate

### To whomsoever it may concern

This is to certify that Mr. Harshal Gupta pursuing B.Tech. - Applied Petroleum Engineering with specialization in Upstream from UPES, Dehradun has done a project work titled on "Directional Drilling in CBM" at our CBM Project Site, during June 17, 2019 to July 16, 2019 as a partial fulfillment for the award of degree of B.Tech.

His conduct during this period was GOOD.

For RELIANCE INDUSTRIES LIMITED

Authorized Signatory





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**OIL AND NATURAL GAS CORPORATION LIMITED**  
**MEHSANA ASSET, KDM BHAVAN, PALAVASANA, MEHSANA-384003**

*Certificate of Training*

*This is to certify that Mr. Ashimendu Jagmal Singh*  
*a student of University of Petroleum and Energy Studies, Dehradun*  
*has undergone Summer Training, 2019 at ONGC from*  
*03<sup>rd</sup> June, 2019 to 28<sup>th</sup> June, 2019.*

*He has successfully completed his Project Work on*  
*Mockups and Simulation Operations*  
*in the discipline of Petroleum Engineering.*

*During the training, he took keen interest in the assigned work.*

*We wish him all success in his future academic endeavours and life.*

*Date : 28<sup>th</sup> June, 2019*

*Place : MehSana*

*Ashimendu*  
*Training Co-ordinator*





सं:सीआईएमएफ़आर/एचआरडी/एसीडी टीआरजी./3/2019 / 8564

दिनांक/Dated: 15/7/2019

जिनसे यह संबन्धित है

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प्रमाणित किया जाता है कि श्री हृषिकेश, बी. टेक. (अप्लाइड पेट्रोलियम इंजीनियरिंग) विद्यार्थी, यूनिवर्सिटी ऑफ पेट्रोलियम एंड एनर्जी स्टडीज, देहरादून ने 10 जून, 2019 से 15 जुलाई, 2019 तक इस संस्थान में संस्थान के वरिष्ठ प्रधान वैज्ञानिक डॉ हरेन्द्र सिंह के मार्गदर्शन में अपना परियोजना कार्य "स्टडी ऑफ रिजर्वायर करेक्टराइस्टिक्स इन कोल् बीएड मीथेन एंड इतस प्रोडक्शन टेक्निक्स" पर सम्पन्न किया है।

वह बहुत निष्ठावान और मेहनती है।

मैं इनके सफल भविष्य की कामना करता हूँ।

TO WHOM IT MAY CONCERN

This is to certify that **Mr. Hrishikesh**, B. Tech. (Applied Petroleum Engineering) student of University of Petroleum and Energy Studies, Dehradun has done his project work on "**Study of Reservoir characteristics in Coal Bed Methane (CBM) and its Production Technique**" 10<sup>th</sup> June, 2019 to 15<sup>th</sup> July, 2019 in this institute under the guidances of Dr. Harendra Singh, Sr. Principal Scientist of this institute.

He is very sincere and hard working.

I wish him all success in his career.

दिलीप कुंभकार

(दिलीप कुंभकार/Dilip Kumbhakar)

अनुभाग प्रमुख/ HOS

मा. सं.वि./ H.R.D





सं:सीआईएमएफआर/एचआरडी/एसीडी टीआरजी./3/2019/8575

दिनांक/Dated:17/7/2019

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## जिनसे यह संबन्धित है

प्रमाणित किया जाता है कि श्री जय जय सियाराम, बी. टेक. (अप्लाइड पेट्रोलियम इंजीनियरिंग) विद्यार्थी, यूनिवर्सिटी ऑफ पेट्रोलियम एंड एनर्जी स्टडीज, देहारादून ने 17 जून, 2019 से 17 जुलाई, 2019 तक इस संस्थान में संस्थान के वरिष्ठ प्रधान वैज्ञानिक डॉ. वी.ए. मेंढे के मार्गदर्शन में अपना परियोजना कार्य "रिज़र्व एस्टिमेशन ऑफ़ शेल गैस एंड कोलबेड मीथेन रिजर्वायर" पर सम्पन्न किया है।

वह बहुत निष्ठावान और मेहनती है।

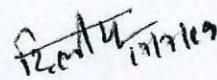
मैं इनके सफल भविष्य की कामना करता हूँ।

## TO WHOM IT MAY CONCERN

This is to certify that **Mr. Jay Jay Siyaram**, B.Tech. (Applied Petroleum Engineering) student of University of Petroleum and Energy Studies, Dehradun has done his project work on "**Reserve Estimation of Shale Gas and Coalbed Methane Reservoir**" from 17<sup>th</sup> June, 2019 to 17<sup>th</sup> July, 2019 in this institute under the guidance of Dr. V.A. Mendhe, Sr. Principal Scientist of this institute.

He is very sincere and hard working.

I wish him all success in his career.

  
(दिलीप कुंभकार/Dilip Kumbhkar)  
अनुभाग प्रमुख/ HOS  
मा. सं.वि./ H.R.D





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**OIL AND NATURAL GAS CORPORATION LIMITED**  
**MEHSANA ASSET, KDM BHAVAN, PALAVASANA, MEHSANA-384003**

*Certificate of Training*

*We are happy that Mr. Kripal Dagar*

*a student of University of Petroleum and Energy Studies, Dehradun*

*has undergone Summer Training, 2019 at ONGC from*

*03<sup>rd</sup> June, 2019 to 01<sup>st</sup> July, 2019.*

*He has successfully completed his Project Work on*

*Study of Liquefied Handling Process and Gas Compression Operations*

*in the discipline of Petroleum Engineering.*

*During the training, he took keen interest in the assigned work.*

*We wish him all success in his future academic endeavours and life.*

*Date : 01<sup>st</sup> July, 2019*

*Place : Mehsana*

*Kallumudhan*

*Training Co-ordinator*



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**Schlumberger**

# Certificate of Internship

This is to certify that

*Karthik Kohli*

has successfully completed the

**Schlumberger Internship Program 2019**

with SLS segment from 27<sup>th</sup> May to 5<sup>th</sup> July, 2019.

*Karthik Naib*

**Karthik Naib**  
**INM Recruiting Manager**



(40)

ऑयल एंड नेचुरल गैस कारपोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओएनजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

This is to certify that Mr/Ms. Kartikay Verma, a student of "University of Petroleum and Energy Studies, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 27.05.2019 to 26.06.2019. He/She has successfully completed his/her project work on "Cementing Operation & Cement Slurry Design For Well Ankleshwar". During the training, he/she took keen interest in completing the assigned work.

We wish him/her all the success in his/her academic endeavors and in life.

Date: 27.06.2019

In Charge

*[Signature]*

Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



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## OGD Services Limited

(f.k.a., Essar Oilfield Services India Limited)

Registered Office

Tower – II

Equinox Business Park

L. B. S. Marg

Kurla (West)

Mumbai – 400 070

Maharashtra, India

Corporate Identity Number

U93090MH2006PLC163779

T + 91 22 6660 1100

F + 91 22 2354 4312

E: [contact@ogdservices.co.in](mailto:contact@ogdservices.co.in)

Date: 5<sup>th</sup> August, 2019

### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. Kartikey Singh Dhakrey, student of University of Petroleum and Energy Studies Energy Acres, PO Bidholi, Via Prem Nagar Dehradun, Uttarakhand-248007, has successfully completed an internship at our Land Rig Drilling Project from 19<sup>th</sup> June, 2019 to 18<sup>th</sup> July, 2019

During the period of his internship, he was imparted training in the “Challenges Faced and Control Measures for Exploring HPHT Wells”. He has submitted a detailed report upon completion of this training.

For OGD Services Limited



Authorize Signatory





(Formerly HLS India Limited)

(A Foreign Collaboration with HALLIBURTON ENERGY SERVICES Inc., U.S.A.)

Registered Office : 109, Aurobindo Place, Hauz Khas, New Delhi – 110016 (India)  
Tel : 91-11-26968194, 26569441 • Fax : 91-11-26968195

## Certificate of Completion

This is to certify that **Mr. Krishna Sharma**, B.Tech (Applied Petroleum Engineering Upstream) student of **UPES, Dehradun** has successfully completed his internship on “Wireline Logging and Perforation” from **1<sup>st</sup> Jun, 2019** to **15<sup>th</sup> Jul, 2019** at **HLS Asia Ltd, Gandhinagar** under the guidance of Mr Pravesh Gupta, Technical Manager, HLS Asia Ltd Gandhinagar.

(Pravesh Gupta)

Technical Manager

HLS Asia Ltd, Gandhinagar

Date: 15-Jul-2019

Certificate No: HLSA/Intern/2019008



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# Training Completion Certificate

This is to certify that Mr./Ms. Kumar Shubham a student of "University of Petroleum & Energy Studies, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 27.06.2019 to 30.06.2019. He/She has successfully completed his/her project work on the topic "Eco-Friendly Polymer Gel Formulation Study at Reservoir Temperature & Application of Nanochemistry for Water Shut-Off Treatment in Mature Oil Fields". During the training, he/she took keen interest in completing the assigned work.

We wish him/her all the success in his/her academic endeavors and in life.

Date: 02-08-2019

In Charge

Students Academic Intensive Learning  
Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



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# Training Completion Certificate

*This is to certify that Mr/Ms. Lav Krishna Sharma a student of "University of Petroleum and Energy Studies, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 27.05.2019 to 26.06.2019. He/She has successfully completed his/her project work on "Cementing Operation & Cement Slurry Design For Well Ankleshwar". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

*Date: 27.06.2019*

*Signature*  
In Charge

Students Academic Intensive Learning  
Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



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# HALLIBURTON

## Certificate

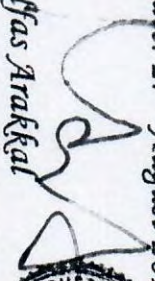
*This is to certify that the work presented in this report is solely carried out by me and has not been submitted by me in part or full in any other institute/organization.*

*Student's signature*

*This is to certify that Ms. Malvika Bajpai a student of B.Tech in Applied Petroleum Engineering with Specialization in Upstream from University of Petroleum and Energy Studies, Dehradun undergone her Internship with Halliburton Offshore Services Inc. from 17<sup>th</sup> June 2019 to 02<sup>nd</sup> August 2019 on "Basis of Well Completion Design, Equipment & its Accessories".*

*This certificate is issued on request, as a certification of his project requirement.*

*Date: 27<sup>th</sup> August 2019*



*Alfaz Arakkal  
HR Business Partner Manager*





(Formerly HLS India Limited)

(A Foreign Collaboration with HALLIBURTON ENERGY SERVICES Inc., U.S.A.)

Registered Office : 109, Aurobindo Place, Hauz Khas, New Delhi – 110016 (India)  
Tel : 91-11-26968194, 26569441 • Fax : 91-11-26968195

## Certificate of Completion

This is to certify that **Mr. Manan Manoj Adlakha**, B.Tech (Applied Petroleum Engineering Upstream) student of **UPES, Dehradun** has successfully completed his internship on “Wireline Logging and Perforation” from **10<sup>th</sup> Jun, 2019** to **20<sup>th</sup> Jul, 2019** at **HLS Asia Ltd, Gandhinagar** under the guidance of **Mr Pravesh Gupta**, Technical Manager, HLS Asia Ltd Gandhinagar.

(Pravesh Gupta)

Technical Manager

HLS Asia Ltd, Gandhinagar

Date: 20-Jul-2019

Certificate No: HLSA/Intern/2019009





Case No.: [CASE NO 5076137] / EMPLOYEE NO. 280754 / SSO. 212768188 / SC

**PRIVATE AND CONFIDENTIAL**

CHATURVEDI, MANU

India

August 6, 2019

**SERVICE CERTIFICATE**

This is to certify that **CHATURVEDI, MANU** worked for **BJ Svcs Co ME Limited** as an "Intern" at our India office from June 3, 2019 to July 31, 2019.

This letter has been issued to **CHATURVEDI, MANU** upon his own request with no liability whatsoever from the Company.

This certificate has been issued at the request of the aforementioned employee without any responsibility on the part of the company.

Should you require any additional details or information please do not hesitate to contact us at telephone number +971 4 811 4005.

Sincerely yours,

**Soha Chahine**  
**People Operations**



# Internship Certificate Energy Dais

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.....  
ENCOD

This certificate is awarded to

## Mayank Gupta

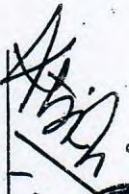
On successfully completing his internship with **Energy Dais**

This is to certify that Mayank Gupta, S/o Anirudh Gupta has successfully completed 2 months (from 27/05/2019 to 26/07/2019) internship program at Energy Dais, Encod Softech Pvt. Ltd. as a '**Business Development Intern**'.

During the internship, Mayank has worked with the Business Development Team. He managed to successfully showcase his excellent work ethic, team player skills and ability to meet the targets.

We wish him all the best for the future endeavours.

With Best Wishes,

  
Head of Partnerships  
Energy Dais





(49)

**Schlumberger**

# Certificate of Internship

This is to certify that

*Aman Dhatt*

has successfully completed the

**Schlumberger Internship Program 2019**

with DS HUB segment from 27<sup>th</sup> May to 5<sup>th</sup> July, 2019.

*Karthik Naib*

**Karthik Naib**  
**INM Recruiting Manager**





**Shell India Markets Private Limited**  
**Shell Business Operations - Chennai**

2nd Floor, Campus 4A  
RMZ Millenia Business Park  
143 Dr M G R Road, Perungudi  
Chennai - 600 096, India  
Tel + 91 44 4345 0000  
Fax + 91 44 4345 1516

2<sup>nd</sup> August 2019

TO WHOM IT MAY CONCERN

This is to certify that **Nawneet Kumar**, University of Petroleum and Energy Studies has successfully completed Internship with **Shell India Markets Private Limited** from 16<sup>th</sup> June 2019 to 2<sup>nd</sup> August 2019.


During this period, **Nawneet Kumar** worked on the following projects:

**Petrophysical Value Stream Analysis with an Investigation in Coring and Rock Mechanics**

- Analyzed Petrophysical Value Stream for Coring and Rock Mechanics data from acquisition and processing to its database management for leveraging data assets.
- Standardized and Reformatted Coring and Rock Mechanics Data to enhance its business value.
- Contributed to staging and publishing of Petrophysical Data in the in the Recall Database Management System while ensuring Data Quality.
- Contributed to leveraging programming languages like Python for automated data extraction, processing and standardization and decreasing turnaround time.

**Nawneet Kumar** worked with diligence, sincerity and commitment. We wish him all the best in academic life at the Institute and career ahead.

For Shell India Markets Private Limited

  
Authorized Signatory

*On behalf of*  
*Ashatnagar*

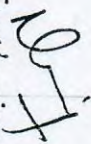


# HALLIBURTON

## Certificate

This is to certify that the work presented in this report is solely carried out by me and has not been submitted by me in part or full in any other institute/organization.

Student's signature



This is to certify that Mr. Neeraj Garg a student of B.Tech in Applied Petroleum Engineering with Specialization in Upstream from University of Petroleum and Energy Studies, Dehradun undergone his Internship with Halliburton Offshore Services Inc. from 17<sup>th</sup> June 2019 to 30<sup>th</sup> July 2019 on "Bulk Plant Operation and Wettability Reversal with Surfactant Based Spacer on SOBAM System and Understanding the Cleaning Efficiency of Surfactants".

This certificate is issued on request, as a certification of his project requirement.

Date: 30<sup>th</sup> July 2019



Alfaz Arekhal  
HR Business Partner Mithagar





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(Formerly HLS India Limited)

(A Foreign Collaboration with HALLIBURTON ENERGY SERVICES Inc., U.S.A.)

Registered Office : 109, Aurobindo Place, Hauz Khas, New Delhi – 110016 (India)

Tel : 91-11-26968194, 26569441 • Fax : 91-11-26968195

## Certificate of Completion

This is to certify that **Mr. Nihal Singh** , B.Tech (Applied Petroleum Engineering Upstream) student of **UPES, Dehradun** has successfully completed his internship on “Wireline Logging and Perforation” from **1<sup>st</sup> Jun,2019** to **30<sup>th</sup> Jul,2019** at **HLS Asia Ltd , Gandhinagar** under the guidance of Mr Pravesh Gupta, Technical Manager, HLS Asia Ltd Gandhinagar.

A circular stamp with the text 'HLS ASIA LTD. GANDHINAGAR' around the perimeter. Overlaid on the stamp is a handwritten signature in black ink, which appears to be 'Pravesh Gupta'.

**(Pravesh Gupta)**

Technical Manager

HLS Asia Ltd, Gandhinagar

Date:30-Jul-2019

Certificate No: HLSA/Intern/2019011





सं:सीआईएमएफआर/एचआरडी/एसीडी टीआरजी./3/2019/8577

दिनांक/Dated:17/7/2019

## जिनसे यह संबन्धित है

प्रमाणित किया जाता है कि श्री निखिल गुप्ता, बी. टेक. (अप्लाइड पेट्रोलियम इंजीनियरिंग) विद्यार्थी, यूनिवर्सिटी ऑफ पेट्रोलियम एंड एनर्जी स्टडीज, देहारादून ने 17 जून, 2019 से 17 जुलाई, 2019 तक इस संस्थान में संस्थान के वरिष्ठ प्रधान वैज्ञानिक डॉ. वी.ए. मेंढे के मार्गदर्शन में अपना परियोजना कार्य "रिज़र्व एस्टिमेशन ऑफ़ शेल गैस एंड कोलबेड मीथेन रिजर्वायर" पर सम्पन्न किया है।

वह बहुत निष्ठावान और मेहनती है।

मैं इनके सफल भविष्य की कामना करता हूँ।

## TO WHOM IT MAY CONCERN

This is to certify that **Mr. Nikhil Gupta**, B.Tech. (Applied Petroleum Engineering) student of University of Petroleum and Energy Studies, Dehradun has done his project work on "**Reserve Estimation of Shale Gas and Coalbed Methane Reservoir**" from 17<sup>th</sup> June, 2019 to 17<sup>th</sup> July, 2019 in this institute under the guidance of Dr. V.A. Mendhe, Sr. Principal Scientist of this institute.

He is very sincere and hard working.

I wish him all success in his career.

*(Signature)* 12/7/19

(दिलीप कुंभकार/Dilip Kumbhkar)

अनुभाग प्रमुख/ HOS

मा. सं.वि./ H.R.D





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**OIL AND NATURAL GAS CORPORATION LIMITED**  
**MEHSANA ASSET, KDM BHAVAN, PALAVASANA, MEHSANA-384003**

*Certificate of Training*

*This is to certify that Mr. Mittal Kapil*  
*a student of University of Petroleum and Energy Studies, Dehradun*  
*has undergone Summer Training, 2019 at ONGC from*  
*21<sup>st</sup> May, 2019 to 05<sup>th</sup> July, 2019.*

*He has successfully completed his Project Work on*  
*Wackar & Stimulation Operations*  
*in the discipline of Petroleum Engineering.*

*During the training, he took keen interest in the assigned work.*

*We wish him all success in his future academic endeavours and life.*

*Date : 05<sup>th</sup> July, 2019*  
*Place : Mehsana*

*Ramkishan*  
*Training Co-ordinator*



55



L Nivas Reddy Donthireddy  
500052025  
Roll No - R870216074  
APE UP(B2)

हाइड्रोकार्बन महानिदेशालय

पेट्रोलियम और प्राकृतिक गैस मंत्रालय  
भारत सरकार

DIRECTORATE GENERAL OF HYDROCARBONS

Ministry of Petroleum & Natural Gas  
Government of India

DGH/HR & ADMIN/ST/2019/25

28.06.2019

TO WHOM IT MAY CONCERN

This is to certify that Mr. **D.L. Nivas Reddy**, a student of B.Tech (Applied Petroleum Engineering) with specialization in Upstream from UPES, Dehradun, India has successfully completed four (04) weeks summer training at Directorate General of Hydrocarbons, Noida, during the period 03.06.2019 to 28.06.2019.

During the training period Mr. D.L. Nivas Reddy has completed assigned project on "Estimation of STOIP and GIIP. Numerical simulation of Gas reservoir". Classroom training was also imparted to give a comprehensive understanding of the Petroleum Industry with particular reference to role of petroleum engineering.

Conduct and performance of Mr. D.L. Nivas Reddy was found to be good during the training period.

DGH wishes him a successful career.

(R.K. Sinha)  
HOD (HR & Admin)





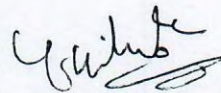
36

## **CERTIFICATE**

This is to certify that **Ms. Palakh Agarwal** (B. Tech Applied Petroleum Engineering with specialization in Up-Stream) from **University of Petroleum and Energy Studies** has successfully completed the project on "**Reservoir Pressure Data Management & Comprehending its Business Value**" from 17<sup>th</sup> June 2019 to 1<sup>st</sup> August 2019 at **Shell Business Operations, Chennai**. This is a submitted copy of the project report after successful completion of her Summer Training. Content of this report is a record of her work carried out under our supervision.



**Mr. Benit Elfran**  
Mentor  
Process Data Engineer



**Mr. Kishore Yedlapalli**  
Global Process Data Manager  
Operations: Subsurface & Wells



# मानव संसाधन विकास

सीआईएमएफआर-केन्द्रीय खनन एवं ईंधन अनुसंधान संस्थान  
(वैज्ञानिक एवं औद्योगिक अनुसंधान परिषद्)  
बरवा रोड, धनबाद-826015, झारखण्ड, भारत



# Human Resource Development

CSIR-Central Institute of Mining & Fuel Research  
(Council of Scientific & Industrial Research)  
Barwa Road, Dhanbad-826015, Jharkhand, India

सं.सीआईएमएफआर/एचआरडी/एसीडी टीआरजी/3/2019/8579

दिनांक/Dated: 17/7/2019

## जिनसे यह संबन्धित है

प्रमाणित किया जाता है कि श्री पलाश रवि, बी. टेक. (अप्लाइड पेट्रोलियम इंजीनियरिंग) विद्यार्थी, यूनिवर्सिटी ऑफ पेट्रोलियम एंड एनर्जी स्टडीज, देहरादून ने 17 जून, 2019 से 17 जुलाई, 2019 तक इस संस्थान में संस्थान के वरिष्ठ प्रधान वैज्ञानिक डॉ. वी.ए. मेंडे के मार्गदर्शन में अपना परियोजना कार्य "इन-सीटू गैस कंटेंट इवैल्यूएशन ऑफ शेल एंड कोल् रिजर्वायर" पर सम्पन्न किया है।

वह बहुत निष्ठावान और मेहनती है।

मैं उनके सफल भविष्य की कामना करता हूँ।

## TO WHOM IT MAY CONCERN

This is to certify that Mr. Palash Ravi, B.Tech. (Applied Petroleum Engineering) student of University of Petroleum and Energy Studies, Dehradun has done his project work on "IN – SITU GAS CONTENT EVALUATION OF SHALE AND COAL RESERVOIR" from 17<sup>th</sup> June, 2019 to 17<sup>th</sup> July, 2019 in this institute under the guidance of Dr. V.A. Mendhe, Sr. Principal Scientist of this institute.

He is very sincere and hard working.

I wish him all success in his career.

दिनांक/17/7/19

(दिलीप कुंभकार/Dilip Kumbhkar)

अनुभाग प्रमुख/HOS

मा. सं.वि./H.R.D

फोन/Phone: 0091-326-2296023, 2296006

ईमेल/Email: EPABX  
0091-326-2296003/6010/6013/5027/6028 Ext. 4238  
कार्यालय के दिन: सोमवार से शुक्रवार तक Working Days: Monday to Friday  
e-mail and visit @barwa.com • Website: www.cimfr.ac.in

फैक्स/FAX/Phone  
0091-326-229-6022/6025/6033



Ref. No. - CIL/HR/SS/1007

16 August, 2019

To

Mr. Pankaj Dhull  
UPES

**Sub: Internship Letter**

This is to certify that Pankaj Dhull has completed his internship with Cairn Oil & Gas - Vedanta Limited, from **27 May, 2019 to 17 July, 2019.**

**Project Title:**

- Polymer breakthrough study.

Pankaj Dhull was methodical and diligent in his approach and had met the expectations of the projects.

Yours truly,  
For **Vedanta Limited (Oil & Gas Business)**

*Avantika Oli*

**Avantika Oli**  
Officiating - Chief Human Resources Officer (CHRO)

**VEDANTA LIMITED**

(Formerly known as Essel Steel India Limited)

**Cairn Oil & Gas** : DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram-122002, Haryana, India  
T +91-124 459 3000 F +91-124 414 5612 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



# Training Completion Certificate

*This is to certify that Mr./Ms. Parth Saini a student of "U.P.E.S, Dehradun," has undergone Summer/Industrial Training at ONGC, Dehradun from 03.06.2019 to 02.07.2019. He/She has successfully completed his/her project work on "Directional Drilling". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

Date: 02.07.2019



In Charge

Students Academic Intensive Learning  
Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



## Certificate of Completion

This is to certify that **Mr. Peeyush Garg**, B.Tech (Applied Petroleum Engineering Upstream) student of **UPES, Dehradun** has successfully completed his internship on "Wireline Logging and Perforation" from **1<sup>st</sup>Jun,2019** to **31<sup>st</sup>Jul,2019** at **HLS Asia Ltd, Gandhinagar** under the guidance of Mr Pravesh Gupta, Technical Manager, HLS Asia Ltd Gandhinagar.



**(Pravesh Gupta)**

Technical Manager

HLS Asia Ltd, Gandhinagar

Date:31-Jul-2019

Certificate No: HLSA/Intern/2019014





सं:सीआईएमएफ़आर/एचआरडी/एसीडी टीआरजी./3/2019 / 8580

दिनांक/Dated:17/7/2019

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## जिनसे यह संबन्धित है

प्रमाणित किया जाता है कि श्री प्रज्वल तेगटा, बी. टेक. (अप्लाइड पेट्रोलियम इंजीनियरिंग) विद्यार्थी, यूनिवर्सिटी ऑफ पेट्रोलियम एंड एनर्जी स्टडीज, देहरादून ने 17 जून, 2019 से 17 जुलाई, 2019 तक इस संस्थान में संस्थान के वरिष्ठ प्रधान वैज्ञानिक डॉ. वी.ए. मेंढे के मार्गदर्शन में अपना परियोजना कार्य "इन-सीटू गैस कंटेंट इवैल्यूएशन ऑफ़ शेल एंड कोल् रिजर्वायर" पर सम्पन्न किया है।

वह बहुत निष्ठावान और मेहनती है।

मैं इनके सफल भविष्य की कामना करता हूँ।

## TO WHOM IT MAY CONCERN

This is to certify that **Mr. Prajwal Tegta**, B.Tech. (Applied Petroleum Engineering) student of University of Petroleum and Energy Studies, Dehradun has done his project work on "**IN – SITU GAS CONTENT EVALUATION OF SHALE AND COAL RESERVOIR**" from 17<sup>th</sup> June, 2019 to 17<sup>th</sup> July, 2019 in this institute under the guidance of Dr. V.A. Mendhe, Sr. Principal Scientist of this institute.

He is very sincere and hard working.

I wish him all success in his career.

*दिलीप कुंभकार* 17/7/19

(दिलीप कुंभकार/Dilip Kumbhkar)  
अनुभाग प्रमुख/ HOS  
मा. सं.वि./ H.R.D



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## Certificate of Completion

This is to certify that **Mr. Pranjal Singh**, B.Tech (Applied Petroleum Engineering Upstream) student of **UPES, Dehradun** has successfully completed his internship on “Wireline Logging and Perforation” from **3<sup>rd</sup> Jun,2019** to **5<sup>th</sup> Jul,2019** at **HLS Asia Ltd, Gandhinagar** under the guidance of Mr Pravesh Gupta, Technical Manager, HLS Asia Ltd Gandhinagar.



**(Pravesh Gupta)**

Technical Manager

HLS Asia Ltd, Gandhinagar

Date:5-Jul-2019

Certificate No: HLSA/Intern/2019007





ओएनजीसी विदेश लिमिटेड  
ONGC Videsh Limited

टॉवर बी, दीनदयाल ऊर्जा भवन  
5, नेल्सन मंडेला मार्ग, वसंत कुंज, नई दिल्ली-110070  
Tower B, Deendayal Urja Bhawan  
5, Nelson Mandela Marg, Vasant Kunj, New Delhi-110070  
वेबसाइट/Website : www.ongcvidesh.com  
CIN : U74899DL1965GCI004343

दूरभाष/Phone : +91 11 26129344  
फैक्स/Fax : +91 11 26129345/46

(63)

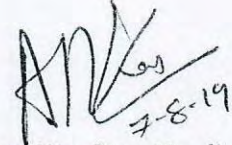
Ref. No. OVL/DL/GAD/ST/2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Pulkit Gururani, a student of University of Petroleum and Energy Studies, Dehradun, pursuing B. Tech in Applied Petroleum Engineering (Upstream), has undergone internship training at Production Group of ONGC Videsh Ltd., New Delhi from 12.07.2019 to 02.08.2019.

During the period of his internship programme with us, he was found to be punctual, hardworking and inquisitive and he took keen interest in the assigned work.

We wish him all the success in his academic endeavors.

  
7-8-19

(Aparajita Das Kaul)  
Dy. General Manager - (HR)

Date: 07.08.2019

Place: New Delhi



अपराजिता दास कौल  
APARAJITA DAS KAUL  
ज. प्रबन्धक (मानव संसाधन) / Dy. General Manager (HR)  
ओ. एन. जी. सी. विदेश लिमिटेड  
ONGC VIDESH LTD.  
दीनदयाल ऊर्जा भवन, वसंत कुंज, नई दिल्ली-110070  
Deendayal Urja Bhawan, Vasant Kunj, New Delhi-110070



## CERTIFICATE OF COMPLETION

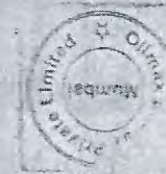
This is to certify that

PULKIT SINGH TOMAR of .B.Tech. in Applied Petroleum Engineering (Upstream) from University of Petroleum and Energy Studies, Dehradun has successfully carried out summer internship at Oilmax Energy Private Limited, India from 27<sup>th</sup> May, 2019 to 05<sup>th</sup> July, 2019.

His project was "Decline Curve Analysis".

He has undertaken keen interest in his training and project work. His attendance was regular during the internship. He has worked to the best of his ability and to our satisfaction.

We wish him a bright future.



  
DR. RABI BASTIA  
President E&P





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**OIL AND NATURAL GAS CORPORATION LIMITED**  
**MEHSANA ASSET, KDM BHAVAN, PALAVASANA, MEHSANA-384003**

*Certificate of Training*

*This is to certify that Sh. Vallabha T D M Phani Kumar  
a student of University of Petroleum and Energy Studies, Dehradun  
has undergone Summer Training, 2019 at ONGE from*

*03<sup>rd</sup> June, 2019 to 28<sup>th</sup> June, 2019.*

*He has successfully completed his Project Work on  
Basics of Well Logging & Data Interpretation  
in the discipline of Petroleum Engineering.*

*During the training, he took keen interest in the assigned work.*

*We wish him all success in his future academic endeavours and life.*

*Date : 28<sup>th</sup> June, 2019*

*Place : Mehsana*

*Kalimullah*

*Training Co-ordinator*



**To whomsoever it may concern**

This is to certify that **Mr. Rahul Kumar** who is student of **University of Petroleum and Energy Studies (UPES)**, Dehradun has completed his Internship in Reliance Industries Limited (E&P) from **3<sup>rd</sup> June 2019** to **26<sup>th</sup> July 2019**.

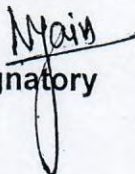
He has completed his project titled "**Hydrocarbon Fluid Characterization and Well Testing**" under the guidance of **Mr. Anant Kumar**.

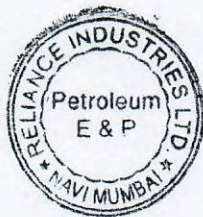
During this period, he has shown a keen interest towards understanding the various aspects and techniques used.

Date : 26<sup>th</sup> July 2019

Place : Navi Mumbai

For Reliance Industries Limited,

  
Authorized Signatory







ऑयल एण्ड नेचुरल गैस कारपोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओएनजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

*This is to certify that Mr. /Ms. Rajat Sharma a student of "UPES, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 04.06.2019 to 04.07.2019. He/She has successfully completed his/her project work on the "Decline Curve Analysis (Modified Hyperbolic Decline)". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

*Date: 05.07.2019*

*Vish*  
In Charge

Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



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# CERTIFICATE OF COMPLETION

**This is to certify that**

**RISHABH SINGH BHANOT** of B.Tech. in Applied Petroleum Engineering (Upstream) from University of Petroleum and Energy Studies, Dehradun has successfully carried out summer internship at **Oilmax Energy Private Limited, India** from **01<sup>st</sup> July, 2019 to 12<sup>th</sup> July, 2019.**

His project was **"Well Modeling for Temperature Gradient Analysis"**.

He has undertaken keen interest in his training and project work. His attendance was regular during the internship. He has worked to the best of his ability and to our satisfaction.

**We wish him a bright future.**

  
**DR. RABI BASTIA**  
President E&P



**To whomsoever it may concern**

This is to certify that **Mr. Rohan Saxena**, who is a student of University of Petroleum and Energy Studies (UPES), Dehradun has completed his Internship in Reliance Industries Limited (E&P) from **3<sup>rd</sup> June 2019** to **19<sup>th</sup> July 2019**.

He has completed his project titled "**Well Logging Principles, Applications and Interpretation**" under the supervision of **Mr. Naresh Kumar**.

During this period, he has shown a keen interest towards understanding the various aspects and techniques used.

Date : 19<sup>th</sup> July 2019

Place : Navi Mumbai

For Reliance Industries Limited,



Authorized Signatory







**CSIR- National Geophysical Research Institute**  
(Council of Scientific and Industrial Research)  
Uppal Road, Hyderabad - 500007, Telangana, India

**CERTIFICATE**

This is to certify that *Mr. Sachin Khanchi*, a student of *B. Tech (IV Year) in Applied Petroleum Engineering with Specialization in Upstream*, from *University of Petroleum and Energy Studies, Dehradun*, has carried out a project work entitled "*Application of Gravity and Magnetic Technique in Mineral Exploration particularly Chromite*" during *June 19, 2019 - August 01, 2019* under the supervision of *Dr. K. Satish Kumar, Senior Scientist*, CSIR-National Geophysical Research Institute, Hyderabad. He has successfully completed the project work.

*Prantik Mandal*  
**Dr. Prantik Mandal**  
Chairman, Students Affairs Committee

*Dr. V. M. Tiwari*  
**Dr. V. M. Tiwari**  
Director, CSIR-NGRI





सीएसआईआर-केंद्रीय खनन एवं ईंधन अनुसंधान संस्थान  
(वैज्ञानिक एवं औद्योगिक अनुसंधान परिषद्)  
बरवा रोड, धनबाद-826015, झारखण्ड, भारत

CSIR-Central Institute of Mining & Fuel Research  
(Council of Scientific & Industrial Research)  
Barwa Road, Dhanbad-826015, Jharkhand, India

सं:सीआईएमएफ़आर/एचआरडी/एसीडी टीआरजी./3/2019/४५७८

दिनांक/Dated:17/7/2019

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## जिनसे यह संबन्धित है

प्रमाणित किया जाता है कि श्री साहिल फ़तेह सिंह संधू, बी. टेक. (अप्लाइड पेट्रोलियम इंजीनियरिंग) विद्यार्थी, यूनिवर्सिटी ऑफ पेट्रोलियम एंड एनर्जी स्टडीज, देहारादून ने 17 जून, 2019 से 17 जुलाई, 2019 तक इस संस्थान में संस्थान के वरिष्ठ प्रधान वैज्ञानिक डॉ वी.ए. मेंढे के मार्गदर्शन में अपना परियोजना कार्य "इन -सीटू गैस कंटेंट इवैल्यूएशन ऑफ़ शेल एंड कोल् रिजर्वार" पर सम्पन्न किया है।

वह बहुत निष्ठावान और मेहनती है।

मैं इनके सफल भविष्य की कामना करता हूँ।

## TO WHOM IT MAY CONCERN

This is to certify that **Mr. Sahil Fateh Singh Sandhu**, B.Tech. (Applied Petroleum Engineering) student of University of Petroleum and Energy Studies, Dehradun has done his project work on "**IN - SITU GAS CONTENT EVALUATION OF SHALE AND COAL RESERVOIR**" from 17<sup>th</sup> June, 2019 to 17<sup>th</sup> July, 2019 in this institute under the guidance of Dr. V.A. Mendhe, Sr. Principal Scientist of this institute.

He is very sincere and hard working.

I wish him all success in his career.

दिनांक 17/7/19

(दिलीप कुंभकार/Dilip Kumbhkar)  
अनुभाग प्रमुख/ HOS  
मा. सं.वि./ H.R.D



73

Ref. No. - CIL/HR/SS/1011

09 September, 2019

To

Mr. Sameer Godha  
UPES, Dehradun

**Sub: Internship Letter**

This is to certify that Sameer Godha has completed his internship with Cairn Oil & Gas - Vedanta Limited, from 03 June, 2019 to 31 July, 2019.

**Project Title:**

**Statistical Approach to well data analysis'**

Sameer Godha was methodical and diligent in his approach and had met the expectations of the projects.

Yours truly,  
For **Vedanta Limited (Oil & Gas Business)**

*Avantika Oli*

**Avantika Oli**  
Officiating - Chief Human Resources Officer (CHRO)

**VEDANTA LIMITED**

(Formerly known as Sesa Sterile Limited)

**Cairn Oil & Gas** : DLF Atria, Phase 2, Jacaranda Marg, DLF City, Gurugram-122002, Haryana, India  
T +91-124 459 3000 F +91-124 414 5612 [www.cairnindia.com](http://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](http://www.vedantalimited.com)

CIN: L13209MH1965PLC291394



RTL (E&P)/HR/19-20/S170

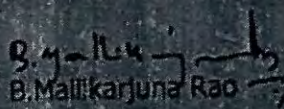
5<sup>th</sup> August 2019

**CERTIFICATE**

This is to certify that **Mr. Sarth Gupta**, pursuing **B.Tech**  
( **Applied Petroleum Engineering with specialisation in Upstream**)  
from **University of Petroleum And Energy Studies, Dehradun** has done  
Internship (Training) on the Topic "**Subsea Overview and Sand Monitoring  
Models**" during 08.07.2019 to 05.08.2019 to as a partial fulfillment for the  
award pursuing **B.Tech ( Applied Petroleum Engineering with  
specialisation in Upstream)**

His conduct during this period was **GOOD**.

For **RELIANCE INDUSTRIES LIMITED**

  
B. Mallikarjuna Rao  
General Manager



**Petroleum E & P**

Plant : Onshore Terminal Site, Godimora Village & Post Tallarevu Mandal, East Godavari District - 533 400.  
Phone : +91-884-2979 100, Fax : +91-884-2977 434.  
Vakalapudi Office : Supplybase Complex, Gas Yard, Plot No. 9, Road No. A, APNIC, IDA Park, Vakalapudi, Kalimeda - 533 005.  
Phone : +91-884-2974 100, Fax : +91-884-2974 201.

Regd. Office : Maker Chambers IV, 3rd Floor, 222, Nariman Point, Mumbai - 400 021, India.  
CLN : L17130MH1573PLC019786 | [www.ril.com](http://www.ril.com)





## Reliance Industries Limited

Reliance Industries Limited, Petroleum (E & P), CoalBed Methane Project (CBM), Village & PO: Lalpur,  
Tehsil:Burhar Dist.: Shahdol, Madhya Pradesh 484110, India. Phone: +91-07652-247000

RIL (E&P)/HR/CBM/S/19-20/012

29th June, 2019

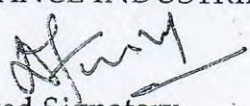
# Certificate

**To whomsoever it may concern**

This is to certify that Mr. Sarthak Bahuguna pursuing B.Tech in Applied Petroleum Engineering with Specialization in Upstream from UPES, Dehradun has done a project work titled on "Calculation and optimization of ECD in Directional Drilling" at our CBM Project Site, during June 01, 2019 to June 29, 2019 as a partial fulfillment for the award of degree of B.Tech.

His conduct during this period was GOOD.

For RELIANCE INDUSTRIES LIMITED

  
Authorized Signatory



## **Certificate of Completion**

This is to certify that **Mr. Saurabh Rai** , B.Tech (Applied Petroleum Engineering Upstream) student of **UPES, Dehradun** has successfully completed his internship on “Wireline Logging and Perforation” from **1<sup>st</sup>Jun,2019** to **31<sup>st</sup>Jul,2019** at **HLS Asia Ltd , Gandhinagar** under the guidance of Mr Pravesh Gupta, Technical Manager, HLS Asia Ltd Gandhinagar.



**(Pravesh Gupta)**

Technical Manager

HLS Asia Ltd, Gandhinagar

Date:31-Jul-2019

Certificate No: HLSA/Intern/2019013





पद्मजा माटे

मुख्य महाप्रबंधक(आर) & ट्रेनिंग संचालक  
आई. आर. एस., ओ. एन. जी. सी.

**Padmaja Matthey**

Chief Gen. Manager(R) & Training Coordinator  
IRS, ONGC

आगर अध्ययन संस्थान

ऑयल एण्ड नेचुरल गैस कॉर्पोरेशन लिमिटेड

चंदखेडा परिसर, अहमदाबाद-380005, गुजरात, इंडिया

Institute of Reservoir Studies

Oil and Natural Gas Corporation Limited

Chandkheda Campus, Ahmedabad-380 005, Gujarat, India

Phone : +91 79 2329 5620, Fax : +91 79 2329 1662

Mob: 09426614692, E-mail: matthey.padmaja@ongc.co.in

## Internship Certificate

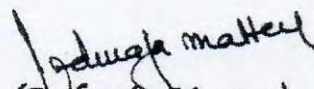
This is to certify that **Mr. Sawan Kumar, B.Tech (Applied Petroleum Engineering), UPES, Dehradun (Uttarakhand)** carried out internship project at Institute of Reservoir Studies (IRS), ONGC, Ahmedabad from 03<sup>rd</sup> June to 05<sup>th</sup> July 2019. During training with us, he has gained good knowledge in Petrophysical division (RCAL & SCAL) and submitted Project Report on **"Routine & special core analysis highlighting MICP & Pore volume compressibility"**

The student completed the project successfully, under the guidance of **Mr. Sujay Sinha, DGM (Geology)**. He is sincere and showed a positive attitude towards attainment of the project objective.

*We wish a bright and successful career in his academic endeavors and life.*

**Place: Ahmedabad**

**Date: 05<sup>th</sup> July, 2019**

  
(**Padmaja Matthey**)  
**CGM (Reservoir)**  
**Training Coordinator**





(Formerly HLS India Limited)

(A Foreign Collaboration with HALLIBURTON ENERGY SERVICES Inc., U.S.A.)

Registered Office : 109, Aurobindo Place, Hauz Khas, New Delhi – 110016 (India)

Tel : 91-11-26968194, 26569441 • Fax : 91-11-26968195

## Certificate of Completion

This is to certify that **Mr. Shashank Khandelwal**, B.Tech (Applied Petroleum Engineering Upstream) student of **UPES, Dehradun** has successfully completed his internship on “Wireline Logging and Perforation” from **1<sup>st</sup> Jun, 2019** to **31<sup>st</sup> Jul, 2019** at **HLS Asia Ltd, Gandhinagar** under the guidance of Mr Pravesh Gupta, Technical Manager, HLS Asia Ltd Gandhinagar.



**(Pravesh Gupta)**

Technical Manager

HLS Asia Ltd, Gandhinagar

Date: 31-Jul-2019

Certificate No: HLSA/Intern/2019010



July 15, 2019

Mr. Shashwat  
UPES, Dehradun

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that **Mr. Shashwat** has completed his internship with us from **10<sup>th</sup> June, 2019** to **15<sup>th</sup> July, 2019**.

During his training, he worked on the following assignments:

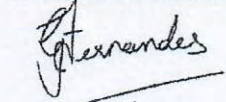
- **An overview of CBM Raniganj Field with Re-fracturing well selection, job design and execution to improve reservoir access for enhanced well productivity**

He has worked with dedication, sincerity and successfully completed the project assigned to him.

We wish him success in his future endeavors.

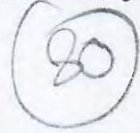
Thanking you.

Yours faithfully,  
For **Essar Oil and Gas Exploration and Production Limited**



**Glynnis Fernandes**  
Head – Human Resources





Case No.: [CASE NO. 5076164] / EMPLOYEE NO. 280766/ SSO. 212768189 / SC

**PRIVATE AND CONFIDENTIAL**

**SHASHWAT GUPTA**

India

August 6, 2019

**SERVICE CERTIFICATE**

This is to certify that **SHASHWAT GUPTA** worked for **Baker Hughes Singapore Pte** as an "Intern" at our India office from June 3, 2019 to July 31, 2019.

This letter has been issued to **SHASHWAT GUPTA** upon his own request with no liability whatsoever from the Company.

This certificate has been issued at the request of the aforementioned employee without any responsibility on the part of the company.

Should you require any additional details or information please do not hesitate to contact us at telephone number **+971 4 811 4005**.

Sincerely yours,

---

**Soha Chahine**  
**People Operations**





(422)

ऑयल एण्ड नेचुरल गैस कारपोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओएनजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

*This is to certify that Mr./Ms. Shubham Dhamija a student of "University of Petroleum & Energy Studies, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 03.06.2019 to 02.07.2019. He/She has successfully completed his/her project work on "Well Designing". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

*Date: 03.07.2019*

In Charge

Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



RIL (E&P)/HR/19-20/S107

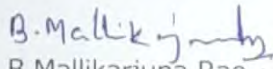
21<sup>st</sup> June '2019

**CERTIFICATE**

This is to certify that **Mr. Arun Joy**, pursuing **B.Tech ( Geo-science Engineering)** from **University of Petroleum And Energy Studies, Dehradun** has done Internship (Training) on the Topic "**Overview of KGD6 and Hydrate Formation and Inhibitors** " during 27.05.2019 to 21.06.2019 to as a partial fulfillment for the award pursuing **B.Tech ( Geo-science Engineering)**

His conduct during this period was GOOD.

For RELIANCE INDUSTRIES LIMITED

  
B. Mallikarjuna Rao  
General Manager



**Petroleum E & P**

Plant : Onshore Terminal Site, Gadimoga Village & Post, Tallarevu Mandal, East Godavari District - 533 463.  
Phone : +91-884-2979 100, Fax : +91-884-2977 434.  
Vakalapudi Office : Supplybase Complex, C-51 Yard, Plot No. 9, Road No. 8, APIIC, IDA Park, Vakalapudi, Kakinada - 533 005.  
Phone : +91-884-2974 101, Fax : +91-884-2974 201.

---

Regd. Office : Maker Chambers IV, 3rd Floor, 222, Nariman Point, Mumbai - 400 021, India.  
CIN : L17110MH1973PLC019786 | [www.ril.com](http://www.ril.com)



# WADIA INSTITUTE OF HIMALAYAN GEOLOGY

33 General Mahadeo Singh Road, Dehradun (India) – 248001



This is to certify that

**Mr AYUSH RAJ CHANDRA**

Of

**University Of Petroleum and Energy Studies  
Bidholi, Dehradun.**

Has successfully completed Summer Internship on the project titled

**“SEISMOTECTONIC IMPLICATIONS IN KISHTWAR REGION THROUGH FAULT-PLANE SOLUTIONS BY  
USING ISOLA SOFTWARE”**

**From 1<sup>st</sup> June to 1<sup>st</sup> August, 2019**

Place: Dehradun

**Date: 1<sup>st</sup> August 2019**

**Dr.Sushil Kumar**  
**Scientist „F“**  
**(Supervisor)**



# PUNJAB STATE POWER CORPORATION LIMITED



GURU HARGOBIND THERMAL PLANT,

LEHRA MOHABBAT, DISTT. BATHINDA

## **Training Certificate**

This is certified that, **JASHANDEEP SINGH GILL** student of  
**UNIVERSITY OF PETROLEUM & ENERGY STUDIES, DEHRADUN** Branch **ELECTRICAL  
ENGINEERING** has undergone industrial Training at Guru Hargobind Thermal Plant, Lehra  
Mohabbat from **05-06-2019 to 30-07-2019**

His Performance during training was *Excellent*

No. 2132 /Trg.2

Date: 30-07-2019

*[Signature]*  
30/7  
Addl. SE/Training (O&M)  
G.H.T.P. Lehra Mohabbat.  
Office seal





उत्तराखण्ड पावर कारपोरेशन लि०  
(उत्तराखण्ड सरकार का उपक्रम)  
**Uttarakhand Power Corporation Ltd.**  
(A Govt. of Uttarakhand Undertaking)  
CIN : U40109UR2001SGC025867  
Email ID: hr@upcl.org, Website: www.upcl.org

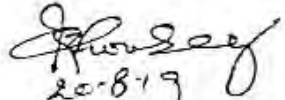
No. 2909 Dir(HR)/UPCL/Training

Date: 20/08/19

**TO WHOM SOEVER IT MAY CONCERN**

This is to certify that **Mr. Hemant** student of **B.Tech** from University of Petroleum & Energy Studies, Dehradun has successfully completed **6 weeks** internship training in **Uttarakhand Power Corporation Ltd.** w.e.f 28.05.2019.

During training the performance of Mr. Hemant has been found good.

  
20-8-19  
(K.B Choubey)  
**GM(HR)(Incharge)**





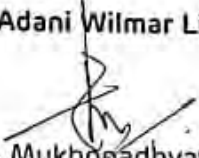
July 17, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Shubhankar Goel, an Electrical Engineering student of UPES, Dehradun, has successfully completed his Summer Vacation Internship Training in our organization from 27<sup>th</sup> May'19 to 17<sup>th</sup> July'19.

We wish him all the best for his future endeavors.

**For Adani Wilmar Limited**

  
R. S. Mukhopadhyay  
Dy. General Manager – HR & Admin.

Adani Wilmar Ltd  
JL No 149, Debhog  
HPL Link Road  
Haldia 721 657  
West Bengal, India  
CIN: U15146GJ1999PLC035320

Tel +91 3224 25 5511 to 13  
Fax +91 3224 25 5514  
Info@adaniwilmar.in  
www.adaniwilmar.com

Registered Office: Fortune House, Nr Navrangpura Railway Crossing, Ahmedabad 380 009, Gujarat, India





एक महारत्न कंपनी

संदर्भ संख्या / Ref.No. :

एन टी पी सी लिमिटेड

(भारत सरकार का उद्यम)

**NTPC Limited**

(A Government of India Enterprises)

बाढ़ / Barh

दिनांक / Date :

4400/BARH/EDC/VT: 2019/21

23.07.2019

## CERTIFICATE

*This is to certify that Sarvjeet Kumar, a student of 3rd Year, Electrical Engineering from UPES - Dehradun has undergone Vocational Training at NTPC Limited, Barh, from 03.06.2019 to 18.07.2019.*

*We wish all success for future endeavors.*

(ABHISHEK ANAND)  
MANAGER (HR-EDC)

अभिषेक  
Abhishek  
महोदय (मानव संसाधन)  
Manager (HR-EDC)  
एनटीपीसी लि. बाढ़/NTPC Ltd., Barh

बाढ़ सुपर थर्मल पावर प्रोजेक्ट, पोस्ट : एनटीपीसी बाढ़, जिला : पटना-803215 (बिहार) दूरभाष : 06132-240011/12, फैक्स : 06132-240010, 240014/240067  
Barh Super Thermal Power Project, Post : NTPC Barh, District : Patna-803215 (Bihar) Phone : 06132-240011/12, Fax : 06132-240010, 240014/240067  
पंजीकृत कार्यालय : एनटीपीसी भवन, स्कोप कॉम्प्लेक्स, 7 इंस्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली-3/ Regd. Off.: NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi-3



## Training Certificate

This is to certify that **Ms. Mandavi Trivedi** student University of Petroleum & Energy Studies, Dehradun has successfully completed Internship Training in the field "**Electrical**" at Adani Dahanu Thermal Power Station of Adani Electricity Mumbai Ltd. for the period 01<sup>st</sup> June, 2019 to 16<sup>th</sup> July, 2019.

During Internship period, we found her sincere, hardworking, and result oriented. He worked well as part of a team during her tenure. We take this opportunity to wish all the best for her future assignment.



A handwritten signature in black ink, appearing to be "D. R. Mantri".

**D. R. Mantri**  
In-Charge (Training)




## **Training Certificate**

This is to certify that Mr. Ritik Sharma student University of Petroleum & Energy Studies, Dehradun has successfully completed Internship Training in the field "*Electrical*" at Adani Dahanu Thermal Power Station of Adani Electricity Mumbai Ltd. for the period 28<sup>th</sup> May, 2019 to 12<sup>th</sup> July, 2019.

During Internship period, we found him sincere, hardworking, and result oriented. He worked well as part of a team during his tenure. We take this opportunity to wish all the best for his future assignment.



  
D. R. Mantri  
In-Charge (Training)

Adani Electricity Mumbai Ltd  
(Formerly Reliance Electric Generation & Supply Ltd)  
Dahanu Thermal Power Station  
Dahanu Road  
Palghar 401 608  
Maharashtra, India  
CIN: U74999MH2008PTC186B77

Tel +91 2528 22 5000-09  
Fax +91 2528 22 2576  
info.mumbaielectricity@adani.com  
www.adanielectricity.com

Registered Office: Devidas Lane, Off SVP Road, Near Devidas Telephone Exchange, Borivali (W), Mumbai 400 103, Maharashtra, India





# SJVN Limited

(A Joint Venture of Govt. of India & Govt. of H.P.)

A Mini Ratna & Schedule 'A' PSU

**RAMPUR HYDRO POWER STATION (412 MW)**

(An IS/ISO-9001, IS/ISO-14001 & IS-18001 Certified)

**Project Office :**

Bayal, P.O. Koyal

Teh. Nirmand, Distt. Kullu-172023

Tele : 01904-265250

Fax : 01904-265251

Website : www.sjvn.nic.in

E-mail: rhep.pna@gmail.com

Ref. No.: SJVN/RHPS/HR/S3- 3268

Dated : 12.07.2019

**To Whomsoever It May Concern**

This is to certify that Sh. Nitin Kumar, student of 6<sup>th</sup> semester, B. Tech. (E.E) UPES; Dehradun has successfully undergone Industrial/Summer Training in Rampur Hydro Power Station, 412 MW, Bayal, Distt. Kullu (H.P) w.e.f 27<sup>th</sup> May, 2019 to 12<sup>th</sup> July, 2019.

He was found to be sincere and hard working during his training period.

Narinder Kumar  
(Narinder Kumar)  
Sr. AGM (Law-HR)

Regd. and Corporate Office : SJVN Ltd. Corporate Complex, Shakti Sadan, Shanan, Shimla (HP)-171006

Expediting Office : IRCON Building, Ground Floor, C-4, District Centre, Saket, New Delhi-110017

Fax No. 011-41659204 / 41659214, EPBAX : 41659210 / 41659217





## इंडियन ऑयल कॉर्पोरेशन लिमिटेड

रिफाइनरी प्रभाग : गुवाहाटी रिफाइनरी

नूनमाटी, गुवाहाटी-७८१०२० (असम)

**Indian Oil Corporation Limited**

Refineries Division : Guwahati Refinery

Noonmati, Guwahati- 781020, Assam.

Fax : 0361-2657250, 2657251

EPABX : 0361-2597000

Internet Site : www.iocl.com



Guwahati Refinery

### To Whom It May Concern


This is to certify that BHANUMAAN KUMAR(2019130598), a student of 6th Semester in B.Tech in Electrical Engineering from University of Petroleum & Energy Studies, Dehradun, Uttarakhand has undertaken internship at Indian Oil Corporation Limited, Guwahati Refinery from 01-06-2019 to 20-07-2019.

During the internship, he/ she has been found to be punctual and diligent. After completion of the internship, he/ she has submitted an Industrial Training/Project Report at Indian Oil Corporation Limited, Guwahati Refinery

We wish him/ her all success in life.

Dated: 15-07-2019

Place : Guwahati Refinery

  
15/07/19  
Mohit Kumar Basumatary  
AM(L&D)  
मोहित के. बसुमातारी/Mohit K. Basumatary  
आसिस्टन्ट मॅनेजर/Assistant Manager  
गुवाहाटी रिफाइनरी, नूनमाटी, गुवाहाटी-७८१०२०  
IOCL Guwahati Refinery Noonmati, Guwahati-20





JSHL:HRD:AKS:TRG:2019  
17th July, 2019

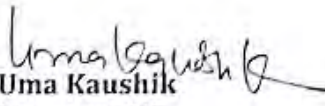
**TO WHOM IT MAY CONCERN**

This is to certify that **Mr. Ankit Kumar Singh**, a student of B.Tech Electrical Engineering, UPES University of Petroleum and Energy Studies, Dehradun, has completed his Summer Training in our organization from **3rd June, 2019 to 17th July, 2019**.

He demonstrated keen interest in learning through observation and practice. During the period of training, we found his performance to be Very Good.

We wish him all the success in his future endeavors.

For Jindal Stainless (Hisar) Limited

  
**Uma Kaushik**  
Manager - HR



**Jindal Stainless (Hisar) Limited**

Head Office: 1272554HR2013PLC047903  
Jindal Centre: 12, Bhikaji Cama Place, New Delhi - 110 065, India  
Hisar Office: 73/4 Jindal Marg, Hisar - 125025 (Haryana), India  
P: +91-1562-222471-83 F: +91-1562-220499  
E: info@jssindal.com, www.jssindal.com





27/08/2019

Certificate of Completion of Internship


This is to certify that Mr. Sparsh Ram Tripathi from University of Petroleum and Energy Studies, Dehradun, Uttarakhand has completed Internship / Project in ABB India Ltd, Faridabad Motors as partial fulfillment of the University course requirements from 27/May/2019 to 23/Aug/2019.

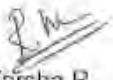
During this period Sparsh Ram Tripathi has completed a project on "Market Analysis" under the guidance of Mr. Vivek Tiwari (Manager, MOMG) Faridabad Motors.

During this period, he proved to be resourceful, hardworking and a fast learner.

We wish him all the best for his future endeavors.

For ABB India Ltd,

  
Raja Vasudevan  
Delivery Manager – Talent Acquisition

  
Varsha R  
Delivery Manager-Compensation and Benefits





MTC/2019/477

July 8, 2019

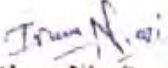
**TO WHOM IT MAY CONCERN**

This is to certify that **Ms. ANTIMA KANWAR**, a student of 3<sup>rd</sup> year **B.Tech. (Electrical Engineering)** from **University of Petroleum and Energy Studies (UPES), Dehradun** had undergo vocational training in our organization from **20-05-2019 to 05-07-2019** in Solar Photovoltaics as a part of her academic curriculum

Her performance during the training period was found to be good

We wish all success in her future endeavors.

For Vivaan Solar., Haridwar

  
(IrumNiazi)

**Manager- Training and Development**

Vivaan Solar

Haridwar, P.O Haridwar 232 217, Haridwar (Uttarakhand)

T : +915446252071 / 254791-96 | F : +915446 252107 / 252427 | E : [vivaansolar.com](mailto:vivaansolar.com) | W : [www.vivaansolar.com](http://www.vivaansolar.com)

Registered Office: Hira Complex, 2<sup>nd</sup> floor, RanspurMada, Haridwar, Uttarakhand 240 401, India | T : +9122664626

Corporate ID No. L27020MH1958PLC011238



Date: 16-07-2019

TO WHOM IT MAY CONCERN

This is to certify that Mr. Tarun Singh, a student of B.tech [Electrical] 2016-20 of University of Petroleum and Energy Studies, has done his internship with Kreate Energy (I) Pvt Ltd on project "RE and Demand Forecasting" from 27th May` 19 to 17th July` 19.

Throughout his work tenure with us, his performance has found satisfactory. We wish him every success in life.

For Kreate Energy (i) Pvt Ltd.

*Sonal*  
*16/07/2019*  
Authorized Signature







**HRD:108:10004507**

**11-Jul-2019**

**TO WHOM IT MAY CONCERN**

This is to certify that Mr. Prince Kumar, a 3rd year B.Tech. student of University of Petroleum & Energy Studies, underwent Vacation Training in System Control of CESC Limited from 27-MAY-19 to 10-JUL-19.

During the period of training his conduct was good and progress was satisfactory.

A handwritten signature in black ink, appearing to be "Sru", is written over a horizontal line.

Dy. General Manager





**HRD:108:10004506**

**11-Jul-2019**

**TO WHOM IT MAY CONCERN**

This is to certify that Mr. Akash Kumar, a 3rd year B.Tech. student of University of Petroleum & Energy Studies, underwent Vacation Training in System Control of CESC Limited from 27-MAY-19 to 10-JUL-19.

During the period of training his conduct was good and progress was satisfactory.

A handwritten signature in blue ink, appearing to be "S. K. S.", is written above the title.

Dy. General Manager





रिफाइनरीज़ प्रभाग  
Refineries Division

HR/TRG/SummerTrg/FWC/3013/2019-20/781

इंडियन ऑयल कॉर्पोरेशन लिमिटेड

रिफाइनरीज़ प्रभाग : स्कोप कॉम्प्लेक्स, कोर-2

7, Institutional Area, Lodhi Road, New Delhi-110 003

Indian Oil Corporation Limited

Refineries Division : SCOPE Complex, Core-2

7, Institutional Area, Lodhi Road, New Delhi-110 003

वेबसाईट : www.iocl.com ई-मेल : refineries@indianoil.in

फोन : +91-11-24362141 फैक्स : +91-11-24361398



Date: July, 15, 2019

**TO WHOMSOEVER IT MAY CONCERN**

*This is to certify that Mr. Kunal Negi, a student of B. Tech (Electrical) from University of Petroleum & Energy Studies, Dehradun has undergone Summer Internship in Project Department of Indian Oil Corporation Ltd., New Delhi for a period from 27-May-2019 to 12-July-2019 under the guidance of Mr. S K Das, General manager (PJ).*

*During the course of his training, he has successfully completed a project titled "Electrical Supply System of Process Plant (BS-VI, Haldia Refinery)".*

*We admire his zeal to learn more and found him to be keen on acquiring insights into organizational systems & procedures. Besides, he is enthusiastic in applying the concepts and theories that are followed at Indian Oil Corporation Ltd.*

*We wish him all success in his future career.*

*Mantosh* 15/7/2019  
**Mantosh Hansda**

**Asstt. Manager (L&D)**

मंतोष हंसदा / MANTOSH HANSDA  
असिस्टेंट मैनेजर (एल.आर.ए. एंड डी.) / Assistant Manager (L&D)  
इंडियन ऑयल कॉर्पोरेशन लिमिटेड  
INDIAN OIL CORPORATION LIMITED  
रिफाइनरीज़ प्रभाग / Refineries Division  
स्कोप कॉम्प्लेक्स, कोर-2, इन्स्टीट्यूशनल एरिया  
SCOPE Complex, Core-2, Institutional Area  
लोधी रोड, नई दिल्ली / Lodhi Road, New Delhi-110 003

पंजीकृत कार्यालय : जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व), मुम्बई - 400 051, महाराष्ट्र (भारत)  
Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai - 400 051, Maharashtra (India)

CIN : L 23201 MH1959 GOI 011388





एक महारत्न कम्पनी

संदर्भ संख्या / Ref No

एन टी पी सी लिमिटेड

(भारत सरकार का उद्यम)

**NTPC Limited**

(A Government of India Enterprises)

बाढ़ / Barh

दिनांक / Date

4400/BARH/EDC/VT: 2019/41

08.06.2019

## CERTIFICATE

*This is to certify that Prashant Kumar, a student of 3rd Year, Electrical and Electronics Engineering from UPES - Dehradun has undergone Vocational Training at NTPC Limited, Barh, from 03.06.2019 to 02.07.2019.*

*We wish all success for future endeavors.*

(ABHISHEK ANAND)  
MANAGER (HR-EDC)

अभिषेक आनन्द  
Abhishek Anand  
प्रबंधक (मानव संसाधन, वि.के.)  
Manager (HR-EDC)  
एनटीपीसी लि. बाढ़ / NTPC Ltd., Barh

बाढ़ सुपर थर्मल पावर प्रोजेक्ट, पोस्ट : बाढ़, जिला : पटना - 803215 (बिहार) दूरभाष : 06132-240011/12 फैक्स : 06132-240010, 240014/240067  
Barh Super Thermal Power Project, Post : Barh, District : Patna- 803215 (Bihar) Phone : 06132-240011/12 Fax : 06132-240010, 240014/240067  
पंजीकृत कार्यालय: एनटीपीसी भवन, स्कोप कॉम्प्लेक्स, 7 इंस्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली-3/ Regd. Off.: NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi-3





उत्तराखण्ड पावर  
कारपोरेशन लि०

उत्तराखण्ड पावर कारपोरेशन लि०  
(उत्तराखण्ड सरकार का उपक्रम)  
**Uttarakhand Power Corporation Ltd.**

(A Govt. of Uttarakhand Undertaking)  
CIN : U40109UR2001SGC025867  
Email ID: hr@upcl.org, Website: www.upcl.org

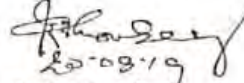
No. 2911 Dir(HR)/UPCL/Training

Date: 20/08/19

**TO WHOM SOEVER IT MAY CONCERN**

This is to certify that **Mr. Gurdarshan Singh** student of **B.Tech** from University of Petroleum & Energy Studies, Dehradun has successfully completed **6 weeks** internship training in **Uttarakhand Power Corporation Ltd.** w.e.f 28.05.2019.

During training the performance of Mr. Gurdarshan Singh has been found good.

  
20-08-19  
(K.B Choubey)  
**GM(HR)(Incharge)**





एन टी पी सी लिमिटेड  
(भारत सरकार का उद्यम)  
**NTPC Limited**  
(A Government of India Enterprise)

दादरी  
DADRI

संदर्भ संख्या / Ref. No.

08/HR-EDC/

दिनांक / Date 19.7.19

To,

Training & Placement Officer  
UPES- Dehradun (U.K)

Sub.: Completion of Vocational Training

Dear Sir/Madam,

With pleasure we would like to inform you that Ms./Mr. Ishmeet Singh S/o, D/o Sh. Bikram Singh student of Electrical Engg. - 3<sup>rd</sup> year has undergone Vocational training under Reg. No. 195071 at NTPC -Dadri w.e.f. 19.06.2019 to 18.07.2019, in reference to the letter issued by your Institution. During the training she/he has shown keen interest in familiarization of the following area(s):

Electrical Maintenance Department

We wish him/her all the Success.

  
(Authorized Signatory)

राष्ट्रीय राजधानी विद्युत स्टेशन, डा. विद्युत नगर, जिला : गौतम बुद्ध नगर, उद्देश्य : 201008 टेली- (का.) 0120-2671233, 2671284 फैक्स : 2672330  
NATIONAL CAPITAL POWER STATION, P.O.-Vidyut Nagar, Distt. Gautam Buddha Nagar-201008 Tel. : (O) 2671283, 2671284 Fax : 2672330

पंजीकृत कार्यालय : एन.टी.पी.सी. भवन, स्कोप कॉम्प्लेक्स, 7 इन्स्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली - 110003 दूरभाष /Tel.: 91-11-2436004 फैक्स /Fax: 91-11-2436050

Regd. Office : NTPC Bhawan, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi-110013 वेबसाइट /Website : www.ntpc.co.in





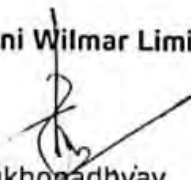
July 17, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Manoj Bohra, an Electrical Engineering student of UPES, Dehradun, has successfully completed his Summer Vacation Internship Training in our organization from 27<sup>th</sup> May'19 to 17<sup>th</sup> July'19.

We wish him all the best for his future endeavors.

**For Adani Wilmar Limited**

  
R. S. Mukhopadhyay  
**Dy. General Manager – HR & Admin.**

Adani Wilmar Ltd  
JL No 149, Debhog  
HPL Link Road  
Haldia 721 657  
West Bengal, India  
CIN: U15146GJ1999PLC035320

Tel +91 3224 25 5511 to 13  
Fax +91 3224 25 5514  
info@adaniwilmar.in  
www.adaniwilmar.com

Registered Office: Fortune House, Nr Navrangpura Railway Crossing, Ahmedabad 380 009, Gujarat, India









उत्तराखण्ड पावर कारपोरेशन लि०  
(उत्तराखण्ड सरकार का उपक्रम)  
**Uttarakhand Power Corporation Ltd.**

(A. Govt. of Uttarakhand Undertaking)  
CIN : U40109UR2001SGC025867  
Email ID: hr@upcl.org, Website: www.upcl.org

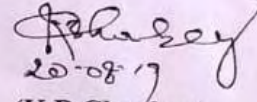
No. 2918 Dir(HR)/UPCL/Training

Date: 26/08/19

**TO WHOM SOEVER IT MAY CONCERN**

This is to certify that **Mr. Aakash Rathee** student of **B.Tech** from University of Petroleum & Energy Studies, Dehradun has successfully completed **6 weeks** internship training in **Uttarakhand Power Corporation Ltd.** w.e.f 28.05.2019.

During training the performance of Mr. Aakash Rathee has been found good.

  
20-08-19

(K.B Choubey)  
**GM(HR)(Incharge)**







# SJVN Limited

(A Joint Venture of Govt. of India & Govt. of H.P.)

A Mini Ratna & Schedule 'A' PSU

**RAMPUR HYDRO POWER STATION (412 MW)**

(An IS/ISO-9001, IS/ISO-14001 & IS-18001 Certified)

**Project Office :**

Bayal, P.O. Koyal

Teh. Nirmand, Distt. Kullu-172023

Tele : 01904-265250

Fax : 01904-265251

Website : [www.sjvn.nic.in](http://www.sjvn.nic.in)

E-mail: [rhep.pna@gmail.com](mailto:rhep.pna@gmail.com)

Ref. No.: SJVN/RHPS/HR/S3-3267

Dated : 12.07.2019

**To Whomsoever It May Concern**

This is to certify that Sh. Akshat Singh, student of 6<sup>th</sup> semester, B. Tech. (E.E) UPES, Dehradun has successfully undergone Industrial/Summer Training in Rampur Hydro Power Station, 412 MW, Bayal, Distt. Kullu (H.P) w.e.f 27<sup>th</sup> May, 2019 to 12<sup>th</sup> July, 2019.

He was found to be sincere and hard working during his training period.

*Narinder Kumar*  
(Narinder Kumar)  
Sr. AGM(Law-HR)

Regd. and Corporate Office : SJVN Ltd. Corporate Complex, Shakti Sadan, Shanan, Shimla (HP)-171006

Expediting Office : IRCON Building, Ground Floor, C-4, District Centre, Saket, New Delhi-110017

Fax No. 011-41659204 / 41659214, EPBAX : 41659210 / 41659217



**SIMULATOR TRAINING CENTRE**  
**HUMAN RESOURCE DEVELOPMENT & TRAINING DIVISION**

ANPARA THERMAL POWER PROJECT  
ANPARA, SONEBHADRA (U.P.)

No. 328 /HRD&TD/ATPS/T-4

Dated : 25/07/2019

**Certified that**

Mr. Ishu Yadav S/o Ashok Kumar Singh student of B.Tech III<sup>rd</sup> Year in Electrical Engineering from, University of Petroleum and energy studies (UPES) has under gone summer training under E.M.D-I, B.T.P.S, Anpara for the period 01-06-2019 to 12-07-2019.

**PERFORMANCE : EXCELLENT/VERY GOOD/GOOD/STATISFACTORY/POOR**  
We are pleased to wish the budding Engineer a bright future & career ahead.

राष्ट्र हित में बिजली बचाएँ

**Executive Engineer**  
**HRD&TD, ATP Anpara**

Executive Engineer

Anpara Thermal Power Project  
Sonebhadra, U.P.





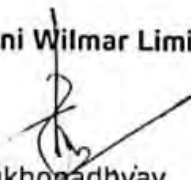
July 17, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Manoj Bohra, an Electrical Engineering student of UPES, Dehradun, has successfully completed his Summer Vacation Internship Training in our organization from 27<sup>th</sup> May'19 to 17<sup>th</sup> July'19.

We wish him all the best for his future endeavors.

**For Adani Wilmar Limited**

  
R. S. Mukhopadhyay  
**Dy. General Manager – HR & Admin.**

Adani Wilmar Ltd  
JL No 149, Debhog  
HPL Link Road  
Haldia 721 657  
West Bengal, India  
CIN: U15146GJ1999PLC035320

Tel +91 3224 25 5511 to 13  
Fax +91 3224 25 5514  
info@adaniwilmar.in  
www.adaniwilmar.com

Registered Office: Fortune House, Nr Navrangpura Railway Crossing, Ahmedabad 380 009, Gujarat, India



Date: 16-07-2019

TO WHOM IT MAY CONCERN

This is to certify that Mr. Rahul Kumar, a student of B.tech [Electrical] 2016-20 of University of Petroleum and Energy Studies (Dehradun), has done his internship with Kreate Energy (I) Pvt Ltd on project "RE and Demand Forecasting" from 27th May` 19 to 17th July` 19.

Throughout his work tenure with us, his performance has found satisfactory. We wish him every success in life.

For Kreate Energy (I) Pvt Ltd.

*Sonal*  
16/7/2019  
Authorized Signature







## पावर ट्रांसमिशन कारपोरेशन ऑफ उत्तराखण्ड लि०

(उत्तराखण्ड सरकार का उपक्रम)

मानव संसाधन एवं प्रशासनिक विभाग

विद्युत भवन, नजदीक-आई०एस०बी०टी० क्रासिंग, सहारनपुर रोड, माजरा, देहरादून-248002

दूरभाष नं० 0135-2645249 फैक्स नं० 0135-2645249 email:- hr@ptcul.org

No. 225 /HR&Admn./PTCUL/H-8

Date-31.08.2019

### TRAINING COMPLETION CERTIFICATE

This is to certify that Shri Arvind Kumar Dhakar student of B.Tech (Electrical Engineering) 6<sup>th</sup> Semester University of Petroleum and Energy Studies, Dehradun has successfully completed his Summer Training based on the topic "State Load Despatch Center" under the guidance of Executive Engineer (SLDC), Project, PTCUL, Dehradun from 02-06-2019 to 16-07-2019.

His behaviour and performance during the Training period was good.

I wish him all success for his future Endeavours.

(A.K. Juyal)

Dy. General Manager(HR)

No. /HR&Admn./PTCUL/H-8 On dated:

Copy to following for information:-

1. Executive Engineer (SLDC), Project, PTCUL, Dehradun.
2. Senior Manager Career Service, University of Petroleum and Energy Studies, Dehradun.
3. Shri Arvind Kumar Dhakar student of B.Tech (Electrical Engineering) 6<sup>th</sup> Semester University of Petroleum and Energy Studies, Dehradun.

(A.K. Juyal)

Dy. General Manager (HR)



Scanned with  
CamScanner





## "CERTIFICATE OF PARTICIPATION"



ISO 29990: 2010



ISO Certificate No. 1018ISO2972

This is to certify that

**Anurag**

has successfully completed the training programme on

### Industrial Internship Certification Program (IICP)

from 10 JUNE 2019 - 25 JULY 2019

at G. L. Bajaj Institute of Technology and Management, Greater Noida  
an Electric Vehicle Summer Bootcamp by Autobot India.

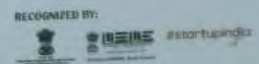
Ashwini Tiwary  
Director  
Autobot India

Awanish Tiwari  
Head (Training)  
Autobot India



Autobot Engineers India Pvt. Ltd.

Issued On - 25-07-2019







JSHL:HRD:RJ:TRG:2019  
17th July, 2019

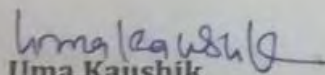
**TO WHOM IT MAY CONCERN**

This is to certify that **Mr. Rishab Jain**, a student of B.Tech Electrical Engineering, UPES University of Petroleum and Energy Studies, Dehradun, has completed his Summer Training in our organization from **3rd June, 2019 to 17th July, 2019**.

He demonstrated keen interest in learning through observation and practice. During the period of training, we found his performance to be Very Good.

We wish him all the success in his future endeavors.

For Jindal Stainless (Hisar) Limited

  
**Uma Kaushik**  
Manager - HR



**Jindal Stainless (Hisar) Limited**

CIN: L27200HR2011PLC046003

Corporate Office: Jindal Centre, 12, Bhikaji Cama Place, New Delhi - 110 066, India

Registered Office: G.P. Jindal Marg, Hisar - 125005 (Haryana), India

T: +91-1662-222471-83, F: +91-1662-220499

E: info@jshl.com, www.jshl.com





Ref. No. Head (HR): Trg: 2019-20

19<sup>th</sup> Jul, 2019

**TO WHOMSOEVER IT MAY CONCERN**

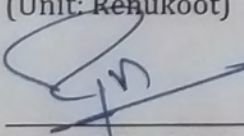
This is to certify that **Mr. Aakash Malik S/o Mr. Narender Malik** (Third Year Student of University of Petroleum and Energy Studies, Dehradun) has completed summer training period from 27<sup>th</sup> May, 2019 to 19<sup>th</sup> Jul, 2019 in **Production Department** at Birla Carbon, Renukoot.

His topic of summer training was **"Rubber Properties with Carbon Black"**.

During the tenure of his summer internship in our organization, we found him sincere, hardworking, and devoted with full enthusiastic participation in concerned department activities.

We wish to him all the success in his life.

For Birla Carbon India Pvt. Ltd.  
(Unit: Renukoot)

  
Rakesh Vashisth  
(Assistant Manager - HR)

Birla Carbon India Private Limited  
(Formerly known as SKI Carbon Black (India) Private Limited)  
Unit : Renukoot

Murdhwa Indl. Area, P.O. Renukoot, Dist. Sonbhadra - 231 217, U.P., India

T : +91 5446 252388 - 91 / 255020 | F : +91 5446 252387 | W : [www.birlacarbon.com](http://www.birlacarbon.com) | CIN : U23201MH2013PTC241741

Marketing Office 910 - 911, Kailash Building, Kasturba Gandhi Marg, New Delhi - 110 001 | T : +91 11 2335 1069 / 71 | F : +91 11 2335 0594  
Regd. Office Aditya Birla Centre, S. K. Ahire Marg, Worli, Mumbai - 400 030, India | T : +91 22 6652 5000



## SUMMER INTERNSHIP COMPLETION CERTIFICATE

Date: 12 July, 2019

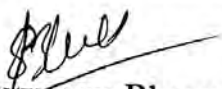
### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Abhishek Kumar Agarwal**, a student of 6<sup>th</sup> semester studying at **University of Petroleum and Energy studies, Dehradun** pursuing his education in the discipline of **Chemical Engineering** has successfully completed his Internship between **May 27, 2019** and **July 12, 2019** at our Paradeep Works.

We are happy to inform you of the keen interest that he demonstrated in learning the operations in the sections assigned to him at the Plant.

We wish him all success in his future endeavors.

For M/s. Paradeep Phosphates Ltd.

  
**Suryansu Bhargab**  
Deputy General Manager – System

### **PARADEEP PHOSPHATES LIMITED**

CIN No.: U241290R1981PLC001020

P.O: PPL Township Paradeep - 754 145 Dist. Jagatsinghpur, Odisha, India.

Tel: +06722 259 600 Fax: +06722 229 625

[www.paradeepphosphates.com](http://www.paradeepphosphates.com)

Registered Office: Bayan Bhawan, Pandit J N Marg, Bhubaneswar - 751001





# Certificate of Fellowship

*This is to certify that*

**Abhishek Kumar**

*from University Of Petroleum And Energy Studies,  
has successfully completed*

**FOSSEE SUMMER FELLOWSHIP 2019**  
*from 27 May 2019 to 12 July 2019 under FOSSEE  
(Free/Libre and Open Source Software in Education).*

*During this tenure, he/she had worked on  
Development of equilibrium reactor for chemical process simulation in OpenModelica.  
This work is available at <https://fossee.in/fellowship/2019>*

*Prof. Kannan Moudgalya  
PI, FOSSEE, IIT BOMBAY*



ed7f7



**MHRD**  
Govt. of India

Certificate issued by FOSSEE, IIT Bombay. To verify, scan the QR code or visit: <https://fossee.in/certificates/verify/>  
This is an auto-generated certificate. No signature is required.





**F/17/TRG/007**

**24<sup>th</sup> June 2019**

**Certificate of Vocational Training**

This is to certify that, **Mr. Abhishek Sharma**, student of 6<sup>th</sup> semester B.Tech. Chemical Engineering (CE + RP) from University of Petroleum & Energy Studies, Dehradun has undertaken his vocational training for duration of 02 weeks from **10<sup>th</sup> June 2019 to 24<sup>th</sup> June 2019**.

During the tenure, he was under the guidance of the Process department of our organization for a project report on '**Brief Overview of Delayed Coker Unit**'.

His conduct and behavior was found good. We wish him all the success in his future endeavors.

**For Bharat Oman Refineries Limited**

**Vinay V. Varier**  
**Deputy Manager (HR)**



नुमालीगढ़ रिफाइनरी लिमिटेड

भारत सरकार का उपक्रम

नूगलीगड़ रिफाइनरी लिमिटेड

ভাৰত চৰকাৰৰ এক প্ৰতিষ্ঠান

NUMALIGARH  
REFINERY  
LIMITED

A GOVERNMENT OF INDIA ENTERPRISE



Ref: NRL/T&D/01

Date: 27/06/2019

TO WHOM IT MAY CONCERN

This is to certify that **Ahmad Muqueet Rayeen** student of B. Tech Chemical Engg + RP.6<sup>th</sup> Sem. from University of Petroleum and Energy Studies had undergone Summer Internship at Numaligarh Refinery Limited.

He has made the report on "Brief Overview of CDU, VDU, HCU, H2U & MSP" at Numaligarh Refinery Limited during the month of June'19. He has successfully completed the Internship and submitted the report.

During the Training period **Ahmad Muqueet Rayeen** was found to be sincere and good in his conduct.

We wish him all success in life.

  
Asish Baruah  
CM (T&D)  
मुख्य प्रबंधक (एंड टी) / CM (T&D)  
नुमालीगढ़ रिफाइनरी लिमिटेड / Numaligarh Refinery Limited  
गोलाघाट, असम - 785 699 / Golaghat, Assam - 785 699

पोस्ट: एन. आर. प्रोजेक्ट, जिला: गोलाघाट, असम, पिन-785699  
P.O. : N.R. Project, District : Golaghat, Assam, PIN - 785699

Registered Office:

122 ए, जी एस रोड, क्रिश्चनवस्ती, गुवाहाटी - 781005 (असम), दूरभाष: 0361-2203140/2203147, फेक्स: 0361-2203146, वेबसाइट: www.nrl.co.in  
122A, G.S. Road, Christianbasti, Guwahati - 781005 (Assam), Phone: 0361-2203140/2203147, Fax: 0361-2203146, Website: www.nrl.co.in



KNPL/ADMIN/JNP/2019/07/HR45

July 12, 2019

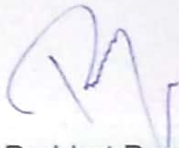
**To Whomsoever It May Concern**

This is to certify that Mr. **Akhand Pratap Singh**, Third Year Student of B.Tech. (Chemical Engg) from University of Petroleum and Energy Studies, Dehradun, Uttarkhand has undergone Summer Internship programme from June 10, 2019 to July 10, 2019 on the following Project assigned in QC Department at our Jainpur Plant, Kanpur Dehat.

**"Stability Analysis of Neromin Products"**

His performance during the Internship was Excellent.

For M/s Kansai Nerolac Paints Limited,



Prabhat Pandey  
Head HR ER

Regd. Office :  
NEROLAC HOUSE  
Ganpatrao Kadam Marg,  
Lower Parel, Mumbai - 400013 India

[www.nerolac.com](http://www.nerolac.com)





# हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड

(भारत सरकार उपक्रम) पंजीकृत कार्यालय : 17, जमशेदजी टाटा रोड, मुंबई - 400 020.

## HINDUSTAN PETROLEUM CORPORATION LIMITED

(A GOVERNMENT OF INDIA ENTERPRISE) REGISTERED OFFICE : 17, JAMSHEDJI TATA ROAD, MUMBAI - 400 020.

मुंबई रिफाइनरी, पो. ऑ. बॉक्स नं. 18820, बी. डी. पाटील मार्ग, माहुल, मुंबई - 400 074.

MUMBAI REFINERY, P.O. BOX NO. 18820, B. D. PATIL MARG, MAHUL, MUMBAI - 400 074

टेलीफोन : TELEPHONE : 2507 6000, फॅक्स : FAX : 2554 2008, तार - हिनरिफ, TELEGRAM - HINREF

CIN : L23201MH1952GOI008858

July 19, 2019

### TO WHOMSOEVER IT MAY CONCERN

This is to Certify that Mr. Akshat Gunani, Chemical Engineering student of University of Petroleum & Energy Studies, Dehradun has successfully completed his summer internship in Technical Department of Mumbai Refinery from 22<sup>nd</sup> May'19-19<sup>th</sup> July'19.

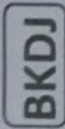
During this period, he has completed the project on "Improvisation of Hexane Manufacturing Process".

We wish him all the very best in his future endeavours.

Patil S P

Deputy General Manager HR  
Capability Building (Technical)





# BKDJ POLYMERS INDIA

Manufacturing: unsaturated Polyester Resin & FRP Material

Ref. No. 147

Date. 06/07/19

## TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. Aman Mishra Student of B.Tech (Chemical Engineering in Refining & Petrochemicals) from University of Petroleum & Energy Studies, Dehradun has Completed Industrial training in this Organisation from 24.05.2019 to 04.07.2019.

During the training, we found him very sincere, punctual on time and very hard working.

We Wish him best of luck for future prospects.

From B.K.D.J POLYMERS INDIA



Plot No. 13, Sector-15, Phase-II, HSIDC, Bawal, HR.

Email: bkdjpolymersindia@gmail.com





Linde Engineering India Pvt. Ltd. "Linde House", Near Nilamber Circle, Vasna, Vadodara.

12 July 2019

## CERTIFICATE

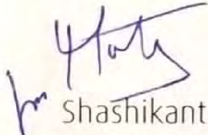
This is to certify that Mr. Ankit Kumar Jaiswal has completed his internship at Linde Engineering India Pvt. Ltd., Vadodara for a period of 1 month and 2 weeks starting from 27<sup>th</sup> May 2019 to 12<sup>th</sup> July 2019.

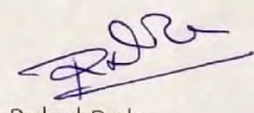
During his internship, he was quite prompt in completing various tasks and activities assigned to him by his mentors from the Systems Engineering department under the guidance of Mr. Dipankar Karmakar and Mr Jinal Sevak. He was introduced to such concepts as, PFD, P&ID, Wet Air Oxidation, Pre-commissioning and Commissioning, valves and pressure relief devices, among others.

During his internship, he was found to be hard working and sincere in his approach.

We wish him all the best for his future.

For Linde Engineering India Pvt. Ltd.

  
Shashikant Patange  
Head - Human Resources

  
Rahul Dole  
Head - Systems Engineering



Linde Engineering India Pvt. Ltd.  
Linde House,  
Near Nilamber Circle,  
Vasna - Gotri Road, Vasna,  
Vadodara- 391410, Gujarat, India  
Phone +91 (265) 305 6789  
Fax +91 (265) 298 1757  
Website [www.linde-india.com](http://www.linde-india.com)  
Email Id: [india@linde-le.com](mailto:india@linde-le.com)  
Corporate Identity Number: U64203GJ1987PTC097873





Corporate Identification Number (CIN): L24220MH1945PLC004598  
For Shares related queries, email to [investor.relations@asianpaints.com](mailto:investor.relations@asianpaints.com)  
For Consumer queries/complaints/Dealership enquiries, email to [customercare@asianpaints.com](mailto:customercare@asianpaints.com)  
For HR related queries, email to [careers@asianpaints.com](mailto:careers@asianpaints.com)  
For Media related queries, email to [proffice@asianpaints.com](mailto:proffice@asianpaints.com)

**Asian Paints Limited**  
Plot No. I, Phase-I, IMT, HSIIDC  
Rohtak-124027 (Haryana)  
Tel No. 01262-304610, 4611  
Fax No. 01262-304603  
[www.asianpaints.com](http://www.asianpaints.com)

Ref.No./270619/001

Date: June 27, 2019

### Certificate

This is to certify that Mr. **Archit** has successfully completed his four week Summer Internship in our organization from 27<sup>th</sup> May to 27<sup>th</sup> June, 2019.

He undertook a project titled Study on The Emulsion Conveying rate under the guidance of Mr. Aditya Sinha.

His conduct and performance during the training was satisfactory. We wish him all the best in his career ahead.

For Asian Paints Limited

**Eeshita Bajpai**  
Manager – HR  
Rohtak Plant



## SUMMER INTERNSHIP COMPLETION CERTIFICATE

Date: 12 July, 2019

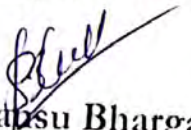
### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Ashish Fanswal**, a student of 6<sup>th</sup> semester studying at **University of Petroleum and Energy studies, Dehradun** pursuing his education in the discipline of **Chemical Engineering** has successfully completed his Internship between **May 27, 2019 and July 12, 2019** at our Paradeep Works.

We are happy to inform you of the keen interest that he demonstrated in learning the operations in the sections assigned to him at the Plant.

We wish him all success in his future endeavors.

For M/s. Paradeep Phosphates Ltd.

  
**Suryansu Bhargab**  
Deputy General Manager – System

### **PARADEEP PHOSPHATES LIMITED**

CIN No.: U241290R1981PLC001020

P.O: PPL Township Paradeep - 754 145 Dist. Jagatsinghpur, Odisha, India.

Tel: +06722 259 600 Fax: +06722 229 625

[www.paradeepphosphates.com](http://www.paradeepphosphates.com)

Registered Office: Bavan Bhausa, Road, U.M. More, Bhubaneswar - 751001





**KANSAI  
NEROLAC**  
PAINTS LIMITED

B-1, B-2, G- 32, 33, 34,  
UPSIDC Industrial Area, Jainpur,  
Kanpur Dehat-209 311 (Uttar Pradesh)  
Tel : +05111-220231 to 220239  
Fax : +05111-220235  
Corporate Identity No.  
L24202MH1920PLC000825

KNPL/ADMIN/JNP/2019/06/HR15

1<sup>st</sup> July, 2019

### **To Whomsoever It May Concern**

This is to certify that Ms. Atisha Gupta Third Year Student of B. Tech Chemical Engineering from University of Petroleum & Energy Studies, Dehradun has undergone Summer Internship programme from 20<sup>th</sup> May, 2019 to 29<sup>th</sup> June, 2019 on the following Project assignment in Decorative Process –Production Department at our Jainpur Plant, Kanpur Dehat.

**"To Improve the Yield of NSE Black"**

Her performance during the Internship was Excellent.

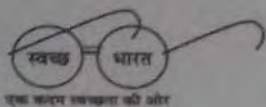
*For M/s Kansai Nerolac Paints Limited,*

**Prabhat Pandey**  
Head HR ER

Regd Office  
NEROLAC HOUSE  
Ganpatrao Kadam Marg,  
Lower Parel Mumbai - 400013 India

[www.nerolac.com](http://www.nerolac.com)





इंडियन ऑयल कॉर्पोरेशन लिमिटेड  
मथुरा रिफाइनरी, मथुरा-281 005, (उ. प्र.) भारत

Indian Oil Corporation Limited  
Mathura Refinery, Mathura-281 005 (U.P.) India

Tel. : 2480999, 2417114

Website : www.iocl.com



रिफाइनरीज़ प्रभाग

Refineries Division

HR/TRG/MRsummerTrg/2019-20/4050

Date-29-June-2019

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that MR. **Atul Verma** is a student of **Chemical Engineering** at **University Of Petroleum & Energy Studies, Dehradun** has undergone Summer Internship In **Chemical Engineering** Department of Indian Oil Corporation Ltd For a period from 1-June-2019 to 29-June-2019.

During the course of his training he has successfully completed a research project titled "**Overview Of Refinery**". We found him keen on acquiring insights into organizational systems & procedures besides being enthusiastic in applying the concepts, theories and undertaking research. We wish him all success in his career.

*Rajendra Prasad*  
29/06/2019

**RAJENDRA PRASAD-AM(L&D)**

राजेन्द्र प्रसाद  
Rajendra Prasad  
सहायक प्रबंधक (अधि. एवं विकास)  
Assistant Manager (LRN & DEV)  
इंडियन ऑयल कॉर्पोरेशन लि.  
Indian Oil Corporation Ltd.  
मथुरा रिफाइनरी, मथुरा - 281005  
Mathura Refinery, Mathura-281005





(Formerly known as Bengal Cracker Complex Limited)

Plant :  
Post Box No.-12, Durgachak,  
Haldia , Dist.-Purba Medinipore  
West Bengal, Pin-721602, India  
TEL. : + 91(03224) 274007/384/400/876,  
WEBSITE:www.haldiapetrochemicals.com  
CIN U24100WB2015PLC205383

19.07.2019

## To Whom It May Concern

This is to certify that Mr. Bhavish Kumar Reddy Koteru, student of University of Petroleum and Energy Studies, Department of Chemical Engineering, has undergone summer training between 24.06.2019 and 19.07.2019 at our Haldia Plant.

He is being awarded this certificate on satisfactory completion of his training.

We wish him all success in his future endeavours.

**Debabrata Burman**

**General Manager – HR (Admin & Training)**



July 30, 2019

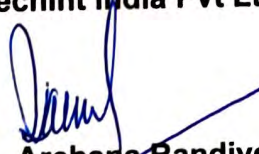
**WHOMSOEVER IT MAY CONCERN**

This is to certify that **MR. B. M. VISHAL**, student of **UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN, UTTARAKHAND** has undergone Internship training in "**Process Department**" at Techint India Pvt. Ltd., Thane, Maharashtra from **1<sup>st</sup> July 2019 to 30<sup>th</sup> July 2019**.

We wish him every success for his future endeavours.

Very truly yours,

**Techint India Pvt Ltd.**



**Archana Randive**

**General Manager (HR & Facilities)**



7/12/2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Chirag Tater** from **University of Petroleum & Engineering Studies, (UPES), Dehradun** has successfully completed his Summer Internship Project at **Reliance Industries Limited, PMD PY in Chemical department from 5/20/2019 to 7/12/2019** and worked on the project **"CP4 Capacity enhancement"**.

We wish Mr. Chirag Tater all success for his future.

Yours faithfully,

For Reliance Industries Ltd.,



AUTHORISED SIGNATORY





**Bharat Petroleum Corporation Limited**  
**Refinery Learning Centre**  
**Mumbai Refinery**

This is to certify that Mr./Ms. DARSHIL JAIN

has completed Internship Training at BPCL, Mumbai Refinery, Mahul  
during the period 27<sup>th</sup> MAY 2019 to 28<sup>th</sup> JUNE 2019


and has submitted the Project Report on :

MASS, HEAT AND PRESSURE BALANCE OF REACTOR - REGENERATOR  
EFFICIENCY OF WET GAS COMPRESSOR

His / Her overall performance was very good / good / satisfactory.

Attendance during the above period was regular / irregular.

Date : 28<sup>th</sup> JUNE 2019

  
DGM (I&D / Admin) MR





# Certificate of Fellowship

*This is to certify that*

*Deepanshu Kishnani*

*from University Of Petroleum And Energy Studies,  
has successfully completed*

*FOSSEE SUMMER FELLOWSHIP 2019  
from 27 May 2019 to 12 July 2019 under FOSSEE  
(Free/Libre and Open Source Software in Education).*

*During this tenure, he/she had worked on  
Development of Thermodynamic models for chemical process simulator in OpenModelica.  
This work is available at <https://fossee.in/fellowship/2019>*

*Prof. Kannan Moudgalya  
PI, FOSSEE, IIT BOMBAY*



4d36e



**MHRD**  
Govt. of India

Certificate issued by FOSSEE, IIT Bombay. To verify, scan the QR code or visit: <https://fossee.in/certificates/verify/>  
This is an auto-generated certificate. No signature is required.





Color & Comfort

Date: 31<sup>st</sup> July 2019

**Industrial Training Certificate**

This is to certify that **Mr. Devesh Panwar**, a Chemical Engineering student of University of Petroleum and Energy Studies, Dehradun has successfully completed his Training project on "**NTNK productivity improvement and Utility energy consumption reduction**" in our Company for the period from 01<sup>st</sup> June to 31<sup>st</sup> July 2019.

During the training period his overall conduct, approach towards the work was found satisfactory.

We value his contribution to progress of our organization and wish him success in future.

**For DIC India Ltd.**

**Manish Dwivedi**

**Corporate General Manager – HR**

**DIC INDIA LIMITED**

C-55, A&B, Phase II, Noida 201 305, Distt. Gautam Budh Nagar (U.P.)

Phone : (0120) 4868500, Fax : (0120) 4868545

E-mail : noida@dic.co.in

CIN No. L24223WB1947PLC015202 • GSTIN : 09AABCC0703C1ZF

Website : dicindia ltd.co

Registered Office : Transport Depot Road, Kolkata - 700 088





## TRIUNE ENERGY SERVICES

REF: TESPL/HR/PRAJ/008/2019/1204

July 26<sup>th</sup>, 2019


### TO WHOMSOEVER IT MAY CONCERN

This letter is to certify that Mr. Gaurav Kumar has successfully completed his internship program of eight weeks with Triune Energy Services Pvt. Ltd. His internship tenure was from 01<sup>st</sup> June 2019 to 26<sup>th</sup> July 2019. He has worked with Business Development and Process Department and was actively & diligently involved in the projects and tasks assigned to him.

During the span, we found him punctual and hardworking person. His learning powers are good and he picks up swiftly. His feedback and evaluation proved that he learned keenly.

We wish him a bright future.

for Triune Energy Services Pvt. Ltd.

  
Nisha Dudeja  
Sr. Manager- HR



## SUMMER INTERNSHIP LETTER

12/July/2019

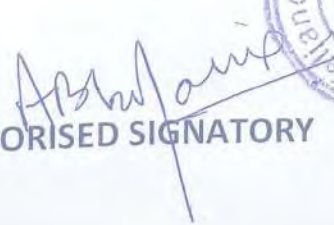
### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Hemendra Dave** from **University of Petroleum & Engineering Studies, Dehradun** has successfully completed his Summer Internship Project at **Reliance Industries Limited, Jamnagar** in **SEZ Operations** from **20/May/2019 to 12/July/2019** and worked on the project **"Study of Caustic Wash system in Alky Unit"**.

We wish Mr. Hemendra Dave all success for his future.

Yours faithfully,

For **Reliance Industries Ltd.**

  
**AUTHORISED SIGNATORY**







Ref. HMEL/HR/VIT/2019-20/025

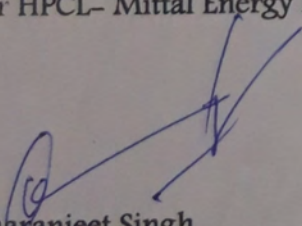
July 19, 2019

## CERTIFICATE

This is to certify that **Mr. Himanshu Goyal** S/o **Sh. Vinod Kumar Goyal**, a student of B.Tech in Chemical Engineering (3<sup>rd</sup> Year) UPES, Dehradun has successfully completed his Vocational Internship Training on "**Overview of Refinery**" at **HPCL-Mittal Energy Limited** from **7 June 2019 to 18 July 2019**.

We wish him good luck in all his future endeavors.

For HPCL- Mittal Energy Ltd.

  
**Charanjeet Singh**  
Assistant General Manager  
Human Leadership

**HPCL-Mittal Energy Limited**



# Training Completion Certificate

*This is to certify that Mr/Ms. Himanshu Kandari a student of "University of Petroleum And Energy Studies, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 29.05.2019 to 28.06.2019. He/She has successfully completed his/her project work on "Oil Field Chemicals And Their Uses In Cement Slurry Designing For Oil And Gas Wells". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

*Date: 01.07.2019*

*Yain*  
In Charge

Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013





इंडियन ऑयल कॉर्पोरेशन लिमिटेड

पानीपत रिफाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स

पानीपत, हरियाणा - 132140

Indian Oil Corporation Limited

Panipat Refinery & Petrochemical Complex

Panipat, Haryana - 132140

वेबसाइट : www.iocl.com; ई-मेल : panipatrefinery@indianoil.in

दूरभाष : 0180-2524001; फैक्स : 0180-2578833



रिफाइनरीज़ प्रभाग

Refineries Division

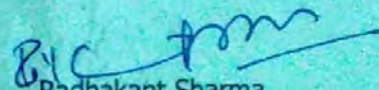
Ref. No. PR/TR/VT/16(b)/TRG-44

Date:- 05-July-2019

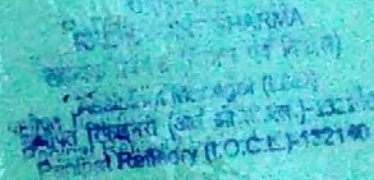
**Certificate of Vocational Training**

Name	Mr. Ishaan Chaudhary
Roll No. / College ID	R900216046
Father's Name (Shri)	C P Singh
Name of Institute / College	University of Petroleum & Energy Studies (UPES)
Address of Institute / College	Bidholi via Premnagar Dehradun-248007
Course / Discipline	B. Tech., Chemical
Period of Training	27-May-2019 to 05-July-2019
Punctuality	Very Good
Conduct	Very Good
Performance	Excellent
Project Report	Submitted

We wish him all the success in future.

  
Radhakant Sharma

Assistant Manager (Learning & Development)



पंजीकृत कार्यालय: जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व), मुम्बई-400051, महाराष्ट्र (भारत)  
Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai-400051, Maharashtra (India)  
CIN - L 23201 MH 1959 GOI 011388





Ref: NRL/T&D/01

Date: 27/06/2019

TO WHOM IT MAY CONCERN

This is to certify that **Ishaat Hussain** student of B. Tech Chemical Engg + RP.6<sup>th</sup> Sem. from University of Petroleum and Energy Studies had undergone Summer Internship at Numaligarh Refinery Limited.

He has made the report on "Brief Overview of CDU, VDU, HCU, H2U & MSP" at Numaligarh Refinery Limited during the month of June'19. He has successfully completed the Internship and submitted the report.

During the Training period **Ishaat Hussain** was found to be sincere and good in his conduct.

We wish him all success in life.

Asish Baruah

CM (T&D)

আশিষ বরুয়া, ASHISH BARUAH

মুখ্য প্রবন্ধক (টি এন্ড ডি)/ CM (T&D)

নুমালীগড় রিফাইনরী লিমিটেড / Numaligarh Refinery Limited  
গোলাঘাট, অসম - 785 699 / Golaghat, Assam - 785 699

পোস্ট: এন. আর. প্রজেক্ট, জিলা: গোলাঘাট, অসম, পিন-785699

P.O. : N.R. Project, District : Golaghat, Assam, PIN - 785699

Registered Office:

122 এ. জি এস রোড, ক্রিস্টিয়ানবাস্তী, গুৱাহাটী - 781005 (অসম), দুরস্বাণ: 0361-2203140/2203147, ফেক্স: 0361-2203146, ৱেবসাইট: www.nrl.co.in  
122A, G.S. Road, Christianbasti, Guwahati - 781005 (Assam), Phone. 0361-2203140/2203147, Fax: 0361-2203146, Website. www.nrl.co.in





Refinery Division

भारतीय पेट्रोलियम कॉर्पोरेशन लिमिटेड  
भारत, दिल्ली - 110001  
Indian Oil Corporation Limited  
Parsipal Refinery & Petrochemical Complex  
Parsipal, Haryana - 132140  
Website : www.iocl.com ई-मेल : parsipalrefinery@ioclindia.in  
फ़ोन : 0180-2524001 फ़ैक्स : 0180-2578833



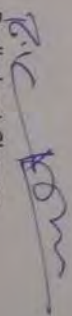
Ref. No. PR/TR/VT/16(b)/TRG-96

Date:- 05-July-2019

### Certificate of Vocational Training

Name	Mr. Jayesh Budhwar
Roll No. / College ID	500052727
Father's Name (Shri)	Kuldeep Singh
Name of Institute / College	University of Petroleum & Energy Studies (UPES)
Address of Institute / College	Bidholi via Premnagar Dehradun-248007
Course / Discipline	B. Tech, Chemical
Period of Training	27-May-2019 to 05-July-2019
Punctuality	Good
Conduct	Good
Performance	Good
Project Report	Submitted

We wish him all the success in future.

  
Radhakant Sharma

Assistant Manager (Learning & Development)

**RADHAKANT SHARMA**  
रधकान्त शर्मा (लर्निंग एंड डेवेलपमेंट)  
Assistant Manager (L&D)  
पर्सिपल (पेट्रोकेम) (आई.ओ.सी.) 132140  
Parsipal Refinery (I.O.C.L.) 132140





## TRIUNE ENERGY SERVICES

REF: TESPL/HR/PRAJ/008/2019/1203

July 26<sup>th</sup>, 2019

### TO WHOMSOEVER IT MAY CONCERN

This letter is to certify that Ms. Kanchan Gusain has successfully completed her internship program of eight weeks with Triune Energy Services Pvt. Ltd. Her internship tenure was from 01<sup>st</sup> June 2019 to 26<sup>th</sup> July 2019. She has worked with Business Development and Process Department and was actively & diligently involved in the projects and tasks assigned to her.

During the span, we found her punctual and hardworking person. Her learning powers are good and she picks up swiftly. Her feedback and evaluation proved that she learned keenly.

We wish her a bright future.

for Triune Energy Services Pvt. Ltd.

Nisha Dudeja  
Sr. Manager- HR

### **Triune Energy Services Pvt. Ltd.**

Regd. Office: B-1/H4A, Mohan Co-op. Industrial Estate, Mathura Road, New Delhi-110044, India

CIN - U74140DL2006PTC151037

Tel: +91-11-41212000 Fax: +91-11-41212220, 41212221, Web: [www.triunengineering.com](http://www.triunengineering.com), E-mail: [tespl@triune.co.in](mailto:tespl@triune.co.in)



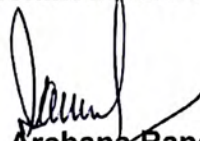
June 28, 2019

**WHOMSOEVER IT MAY CONCERN**

This is to certify that **MR. KARAN MATHPAL**, student of **UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN, UTTARAKHAND** has undergone Internship training in "**Process Department**" at Techint India Pvt. Ltd., Thane, Maharashtra from **3<sup>rd</sup> June 2019 to 28<sup>th</sup> June 2019**.

We wish him every success for his future endeavours.

Very truly yours,  
**Techint India Pvt Ltd.**



**Archana Randive**  
**General Manager (HR & Facilities)**



Ref: NRL/T&D/01

Date: 27/06/2019

TO WHOM IT MAY CONCERN

This is to certify that **Kunal Sindher** student of B. Tech Chemical Engg + RP.6<sup>th</sup> Sem. from University of Petroleum and Energy Studies had undergone Summer Internship at Numaligarh Refinery Limited.

He has made the report on "Brief Overview of CDU, VDU, HCU, H2U & MSP" at Numaligarh Refinery Limited during the month of June'19. He has successfully completed the Internship and submitted the report.

During the Training period **Kunal Sindher** was found to be sincere and good in his conduct.

We wish him all success in life.

  
Asish Baruah  
आशिष बारुआ / ASHISH BARUAH  
मुख्य प्रबंधक (टी एंड डी) / CM (T&D)  
नुमालीगढ़ रिफाइनरी लिमिटेड / Numaligarh Refinery Limited  
गोलाघाट, असम - 785 699 / Golaghat, Assam - 785 699

पोस्ट: एन. आर. प्रोजेक्ट, जिला: गोलाघाट, असम, पिन-785699  
P.O. : N.R. Project, District : Golaghat, Assam, PIN - 785699

Registered Office:

122 ए. जी एस रोड, क्रिश्चनबस्ती, गुवाहाटी - 781005 (असम), दूरभाष: 0361-2203140/2203147, फेक्स: 0361-2203146, वेबसाइट: www.nrl.co.in  
122A, G.S. Road, Christianbasti, Guwahati - 781005 (Assam), Phone: 0361-2203140/2203147, Fax: 0361-2203146, Website: www.nrl.co.in



**SUMMER INTERNSHIP LETTER**

12.07.2019

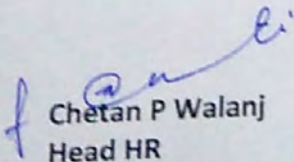
TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Lalit Gupta from University of Petroleum & Engineering Studies, (UPES), Dehradun has successfully completed his Summer Internship Project at Reliance Industries Limited, Nagothane Manufacturing Division in CTS from 20<sup>th</sup> May 2019 to 12<sup>th</sup> July 2019 and worked on the project "Study of Conveying coolers E-601 & E-604 adequacy & propose new datasheets/modifications in case of design inadequacy".

We wish Mr. Lalit Gupta all success for his future.

Yours faithfully,

For Reliance Industries Ltd.,



Chetan P Walanj  
Head HR





22<sup>nd</sup> July, 2019

**To Whom It May Concern**

This is to certify that Ms. Maitree Jha, a student of UPES University, has undergone 6 weeks Summer Internship in our organization from 10<sup>th</sup> June, 2019 to 22<sup>nd</sup> July, 2019.

She had successfully completed the project on **Calculation of Heat on Cooling Tower and improving its efficiency.**

During the above period, Ms. Maitree had shown keen interest in learning the things.

We wish her all the success in for future endeavour.

For Gracim Industries Limited,

A handwritten signature in black ink, appearing to be 'Ashim Dutta', is written over a horizontal line.

Ashim Dutta  
Assistant General Manager – HR

**Gracim Industries Limited**  
Chemical Division - Renukoot  
P.O.: Renukoot - 231 217,  
Distt.: Sonabhadra (U.P.) India

**Telephone** +91- 5446 - 252044/55/75  
**Fax** +91- 5446 - 252088

**Website** www.gracim.com  
**E-mail** gracim.renukoot@adityabirla.com  
**CIN** L17124MP1947PLC000410  
**PAN** AAACG44648

Regd. Office - Birlagram, Nagda - 456331, M.P., India



## SUMMER INTERNSHIP COMPLETION CERTIFICATE

Date: 12 July, 2019

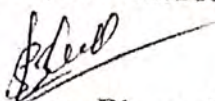
### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms.Mansi Gautam**, a student of 6<sup>th</sup> semester studying at **University of Petroleum and Energy studies, Dehradun** pursuing her education in the discipline of **Chemical Engineering** has successfully completed her Internship between **May 27, 2019** and **July 12, 2019** at our Paradeep Works.

We are happy to inform you of the keen interest that she demonstrated in learning the operations in the sections assigned to her at the Plant.

We wish her all success in her future endeavors.

For M/s. Paradeep Phosphates Ltd.

  
**Suryansu Bhargab**  
Deputy General Manager – System

#### **PARADEEP PHOSPHATES LIMITED**

CIN No.: U241290R1981PLC001020

P.O: PPL Township Paradeep - 754 145 Dist. Jagatsinghpur, Odisha, India.

Tel: +06722 259 600 Fax: +06722 229 625

[www.paradeepphosphates.com](http://www.paradeepphosphates.com)

Registered Office: Bayan Bhawan, Pandit J N Marg, Bhubaneswar - 751001





## INDIA GLYCOLS LIMITED



A-1, Industrial area, Bazpur Road, Kashipur - 244713, Distt. U. S. Nagar (Uttarakhand)  
Phone : +91 - 05947 - 269000 / 269500, 275320, +91 - 9411108202-3, Fax : +91 - 05947-275315, 275312

### TO WHOM SO EVER IT MAY CONCERN

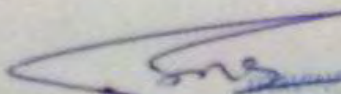
This is to certify that Ms./Mr. Mahit Kala, 4th year student of B.Tech (chem) from University of Petroleum & Energy Studies Dehradun underwent training on Distillation Column at Surfactant Division Department in our organization commencing from May 25, 19 to June 24, 2019 as a part of her/his course curriculum.

She/He has successfully completed her/his training. During the training, we found her/him sincere, hardworking & dedicated to the assignment.

We wish her/him all the success in his future endeavors.

For INDIA GLYCOLS LIMITED

For India Glycols Limited

  
Authorised Signatory



Ref.: NTL/HRD/03/2019-20

08<sup>th</sup> August 2019

**Vikash Bisht,**  
University of Petroleum and Energy Studies (UPES)  
P.O. Bidholi Via-Prem Nagar,  
Dehradun-248007

This is to certify that **Vikash Bisht**, a student of **B.Tech (Chemical Branch)** Roll No. R900216116 has completed 45 Days summer training from 10<sup>th</sup> June 2019 to 05<sup>th</sup> July 2019 in Chemical Department of our company in which he learned the process of paper making. His performance during the training was exemplary and he showed great interest in learning.

His behavior and conduct during the training period was appreciable.

We wish him a successful and bright future ahead.

For Naini Tissues Ltd.



Omveer Chauhan  
Sr. Manager \_HR

## Naini Tissues Limited

An ISO 9001:2008; ISO 14001:2004; OHSAS 18001:2007 Certified Company

**Corporate Office:** Station Road, Kashipur-244713 (Uttarakhand) Tel.: +91 (5947) 279331, 275872  
**Works :** 7<sup>th</sup> Km. Stone, Moradabad Road, Kashipur-244713 (Uttarakhand) Tel.: +91 (5947) 275913/14/15

[info@nainigroup.com](mailto:info@nainigroup.com) | [www.nainigroup.com](http://www.nainigroup.com)



TRG/VT/2018-19(W)/30

June 27, 2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms Nivedita Singh, a student of B.Tech (Chemical Engineering) from University of Petroleum and Energy Studies (UPES), Dehradun, completed her Practical Training in Process Department of our organization from May 20, 2019 to June 27, 2019. She has undertaken her training assignment on "Pipeline Design and Optimisation".

During the course of training, Ms Nivedita has been regular and punctual. She has taken keen interest in her assignment and her performance on evaluation has been found to be "Excellent."

*(Signature)*  
27/6

(M Y Ali)

General Manager (Training)



सर्व शिक्षा अभियान



July 30, 2019

### To Whomsoever It May Concern

This is to certify that Ms. Nivedita Singh D/O Mr. Dinesh Kumar Chauhan of B.Tech -3<sup>rd</sup>Year (Chemical Engineering) student of UPES, Dehradun successfully completed her Project training in our production department at Gajraula, from 1<sup>st</sup> July 2019 to 26<sup>th</sup> July 2019.

During her tenure, we found her hard working, sincere and dedicated with a learning attitude.

We wish her all the success for her future career.

From Jubilant Life Sciences Ltd.



**Kapil Joshi**  
Deputy Manager HR

A Jubilant Bhartla Company

OUR VALUES



**Jubilant Life Sciences Limited**  
Bhartiagram, Gajraula  
Distt. Amroha - 244 233, UP, India  
Tel: +91 5924 252351, 252353-60  
Fax: +91 5924 252352  
www.jubl.com

Corporate Office:  
I-A, Sector 16-A,  
Noida-201 301, UP, India  
Tel: +91 120 4361000  
Fax: +91 120 4234895-96

Regd Office:  
Bhartiagram, Gajraula  
Distt. Amroha - 244 223,  
UP, India  
CIN : L24116UP1978PLC004624





रिफाइनरी प्रभाग  
Refineries Division

इंडियन ऑयल कॉर्पोरेशन लिमिटेड  
गुजरात रिफाइनरी, डाकघर : जवाहरनगर  
जिला - वडोदरा, गुजरात - 391 320.

Page 1 of 1

Indian Oil Corporation Limited  
Gujarat Refinery, P.O. Jawaharnagar,  
Dist. : Vadodara, Gujarat - 391 320.



दूरभाष : +91-265-2237106 फैक्स : +91-265-2233326  
ई-मेल : gujaratrefinery@indianoil.in वेबसाइट : www.iocl.com


JR/TD/2019/0144

Date: 21/06/2019

## Certificate

This is to certify that **Mr. Onkar Sharma**, student of **Chemical Engineering** programme from **University of Petroleum & Energy Studies, Dehradun**, has undergone Industrial Training at Indian Oil Corporation Limited, Gujarat Refinery, Vadodara from **27/05/2019 to 21/06/2019** as a part of the course curriculum.

He/She has successfully completed the training and submitted a report with his/her overall performance being **Excellent**.

  
21/06/19  
**VIJENDER KUMAR**  
**AM(MS,L&D)**  
विजेंद्र कुमार  
**VIJENDER KUMAR**  
सहायक प्रबंधक (प्रबंधक सेवार्थ अधिविनय विकास)  
Assistant Manager (MS, L&D)  
गुजरात रिफाइनरी, आई.ओ.सी.एल., वडोदरा  
Gujarat Refinery, IOCL, Vadodara

पंजीकृत कार्यालय : जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व) मुम्बई, महाराष्ट्र - 400 051. (भारत)  
<https://jrefservapptraining/certificate.aspx?name=JR%2F%2FD%2F2019%2F0144&date=21/06/2019>

CIN-L23201 MH1959 GOI 011388





नेशनल फर्टिलाइजर्स लिमिटेड

(भारत सरकार का उपक्रम)  
नंगल इकाई, नया नंगल 140 126 (पंजाब)

NATIONAL FERTILIZERS LIMITED

(A GOVERNMENT OF INDIA UNDERTAKING)

NANGAL UNIT, NAYA NANGAL (PUNJAB) 140 126

(An ISO-9001:2008, ISO-14001:2004 & OHSAS-18001:2007 Unit)



फैक्स-01887-220541

एसटीडी कोड नं- 01887

ईपीएबीएक्स नं. - 220510

वेबसाइट-

nationalfertilizers.com

No. NFL/NGL/HRD/VT/2019

FAX: 01887-220541

STD No. 01887

EPABX No. 220510

Website :

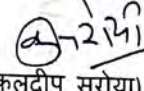
nationalfertilizers.com

Dated : 11.07.2019

### CERTIFICATE OF TRAINING

This is to certify that **Mr./Ms PARAL SAINI S/D/o Shri AMRIT SAINI** student of **B.TECH(CHEM.)** from **UPES, DEHRADUN** has undergone his/her vocational training from **04.06.2019 to 06.07.2019** in **PRODUCTION** Department at this organization.

He took keen interest in his/her training and his/her conduct and performance was found to be **VERY GOOD**. We wish him/her all the best for his/her bright future.

  
(कुलदीप सरोया)

सहायक प्रबंधक (समन्वय)

Human Resource Development Deptt.  
National Fertilizers Limited, Nangal Unit  
Naya Nangal (Pb.) 140126

कारपोरेट कार्यालय : ए-11, सेक्टर 24, नोएडा, गौतम बुद्ध नगर, उत्तर प्रदेश पिन 201 301 ☎: 0120-2412294, 2412445 एवं 3092201 से 08, फैक्स 2412397  
CORPORATE OFFICE : A-11, SECTOR 24, NOIDA, GAUTAM BUDDH NAGAR (UP) - 201 301, ☎: 0120-2412294, 2412445 & 309221 to 08, FAX : 2412397  
रजि.कार्यालय : स्कोप कॉम्प्लेक्स, कोर-III, 7, इंस्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली - 110 003, ☎: 011-24360066, फैक्स 24361553, सीआईएन: L74899DL1974GO1007417  
REGD. OFFICE : SCOPE COMPLEX, CORE-III, 7 INSTITUTIONAL AREA, LODHI ROAD, NEW DELHI - 110 003, ☎: 011-24360066, FAX: 24361553, CIN: L74899DL1974GO1007417  
Website: www.nationalfertilizers.com



**23<sup>rd</sup> Nov,2018**

**Ms. Sakshi Jain  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Sakshi,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019.

You are requested to report to the HR Department at Palej, . The address is mentioned below

Ms.Esha Nikam,  
Phillips Carbon Black Limited,  
N.H - 8, Palej, Dist- Bharuch,  
Gujarat- 392222  
Contact Number : 9096382281.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

**Your's sincerely  
FOR PHILLIPS CARBON BLACK LIMITED**



**Reena Singh  
Divisional Head – Learning & Development**





**RP-Sanjiv Goenka  
Group**  
Growing Legacies



PHILLIPS CARBON BLACK LIMITED

**23<sup>rd</sup> Nov, 2018**

**Mr. Saman Fatma  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Saman,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019.

You are requested to report to the HR Department at Mundra, . The address is mentioned below

Mr. Vikas Hathi,  
Phillips Carbon Black Limited  
Survey No. 47, SH – 46,  
Mokha,  
Mundra, Kutch,  
Gujarat- 370 421  
Contact Number : 8980011499.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

**Your's sincerely  
FOR PHILLIPS CARBON BLACK LIMITED**

**Reena Singh  
Divisional Head – Learning & Development**



**23<sup>rd</sup> Nov,2018**

**Mr. Ranish Mukherji  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Ranish,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019.

You are requested to report to the HR Department at Palej, . The address is mentioned below

Ms.Esha Nikam,  
Phillips Carbon Black Limited,  
N.H - 8, Palej, Dist- Bharuch,  
Gujarat- 392221  
Contact Number : 9096382281.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

**Your's sincerely  
FOR PHILLIPS CARBON BLACK LIMITED**



**Reena Singh  
Divisional Head – Learning & Development**



**23<sup>rd</sup> Nov, 2018**

**Mr. Amrit Apurva  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Amrit,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1st June, 2019 to 31st July, 2019.

You are requested to report to the HR Department at Palej, The address is mentioned below

Ms. Esha Nikam,  
Phillips Carbon Black Limited,  
N.H - 8, Palej, Dist- Bharuch,  
Gujarat- 392220  
Contact Number : 9096382281.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

**Your's sincerely  
FOR PHILLIPS CARBON BLACK LIMITED**



**Reena Singh  
Divisional Head – Learning & Development**



**23<sup>rd</sup> Nov, 2018**

**Ms. Sonali Garg  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Sonali,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1<sup>st</sup> June, 2019 to 31st July, 2019.

You are requested to report to the HR Department at Mundra, . The address is mentioned below

Mr. Vikas Hathi,  
Phillips Carbon Black Limited  
Survey No. 47 , SH – 46,  
Mokha,  
Mundra, Kutch.  
Gujarat- 370 421  
Contact Number : 8980011499.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

**Your's sincerely  
FOR PHILLIPS CARBON BLACK LIMITED**



**Reena Singh  
Divisional Head – Learning & Development**



**23<sup>rd</sup> Nov,2018**

**Mr. Ankit Akash  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Ankit,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July,2019.

You are requested to report to the HR Department at Mundra, . The address is mentioned below

Mr.Vikas Hathi,  
Phillips Carbon Black Limited  
Survey No. 47 , SH – 46,  
Mokha,  
Mundra, Kutch,  
Gujarat- 370 421  
Contact Number : 8980011499.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

**Your's sincerely  
FOR PHILLIPS CARBON BLACK LIMITED**



**Reena Singh  
Divisional Head – Learning & Development**



23<sup>rd</sup> Nov, 2018

Mr. Nipun Shah  
University of Petroleum and Energy Studies  
Dehradun – 248007

Dear Nipun,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019.

You are requested to report to the HR Department at Kochi, . The address is mentioned below

Mr. Nandagopal G,  
Phillips Carbon Black Ltd,  
Brahmapuram P.O, Karimugal,  
Kochi - 682305  
Contact Number : 9946699832.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

Yours sincerely  
FOR PHILLIPS CARBON BLACK LIMITED



Reena Singh  
Divisional Head – Learning & Development



**23<sup>rd</sup> Nov,2018**

**Mr. Naman Dudeja  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Naman,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019.

You are requested to report to the HR Department at Kochi, . The address is mentioned below

Mr. Nandagopal G,  
Phillips Carbon Black Ltd,  
Brahmapuram P.O, Karimugal,  
Kochi - 682304  
Contact Number : 9946699832.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

**Your's sincerely  
FOR PHILLIPS CARBON BLACK LIMITED**



**Reena Singh  
Divisional Head – Learning & Development**



**23<sup>rd</sup> Nov,2018**

**Ms. Monamie Basu  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Monamie,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July,2019.

You are requested to report to the HR Department at Kochi, . The address is mentioned below

Mr.Nandagopal G,  
Phillips Carbon Black Ltd,  
Brahmapuram P.O, Karimugal,  
Kochi - 682303  
Contact Number : 9946699832.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

**Your's sincerely  
FOR PHILLIPS CARBON BLACK LIMITED**



**Reena Singh  
Divisional Head – Learning & Development**



**23<sup>rd</sup> Nov,2018**

**Ms. Ishita Juneja  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Ishita,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1st June, 2019 to 31<sup>st</sup> July, 2019.

You are requested to report to the HR Department at Durgapur, . The address is mentioned below

Mr.Mahender Pal Singh,  
Phillips Carbon Black Limited, 27,  
R.N Mukherjee Road, Durgapur - 713201,  
Dist. Burdawan,  
West Bengal  
Contact Number : 9593109109.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.


We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

**Your's sincerely  
FOR PHILLIPS CARBON BLACK LIMITED**



Reena Singh

**Divisional Head – Learning & Development**



**23<sup>rd</sup> Nov, 2018**

**Mr. Arham Mirza  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Arham,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019.

You are requested to report to the HR Department at Durgapur, . The address is mentioned below

Mr. Mahender Pal Singh,  
Phillips Carbon Black Limited, 27,  
R.N Mukherjee Road,  
Durgapur - 713201,  
Dist. Burdawan,  
West Bengal  
Contact Number : 9593109109.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

**Your's sincerely  
FOR PHILLIPS CARBON BLACK LIMITED**



**Reena Singh  
Divisional Head – Learning & Development**



**23<sup>rd</sup> Nov,2018**

**Mr. Devraja Devnarayan  
University of Petroleum and Energy Studies  
Dehradun – 248007**

Dear Devraja,

We are pleased to engage you as a Summer Trainee for a period of two months i.e. from 1<sup>st</sup> June, 2019 to 31st July,2019.

You are requested to report to the HR Department at Durgapur, . The address is mentioned below

Mr.Mahender Pal Singh,  
Phillips Carbon Black Limited, 27,  
R.N Mukherjee Road, Durgapur - 713201,  
Dist. Burdawan,  
West Bengal  
Contact Number : 9593109109.

During the tenure of the training, you will be paid a consolidated stipend of Rs. 7,000/- every month.

We will provide you the accommodation & food facility during the mentioned tenure of your summer internship.

We wish you all the best for the assignment.

Please sign and return the duplicate copy of the letter as a token of your acceptance.

Thanking You,

Your's sincerely

**FOR PHILLIPS CARBON BLACK LIMITED**



**Reena Singh**

**Divisional Head – Learning & Development**



**26<sup>th</sup> November, 2019**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Ms. Monamie Basu has completed her training with Phillips Carbon Black Limited from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019 in Production Department at Kochi.

During this period, she has done her training on “Plant Water Optimization” under the guidance of Mr. Kevin Simon, Senior Manager - Production.

She has done her work in a dedicated and sincere manner and we wish her Good Luck in her future endeavours.

**Thanking you,  
For Phillips Carbon Black Limited**



**Reena Singh  
Divisional Head – Learning & Development**



**26<sup>th</sup> November,2019**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Ms. Ishita Juneja has completed her training with Phillips Carbon Black Limited from 1<sup>st</sup> June,2019 to 31<sup>st</sup> July,2019 in Production Department at Durgapur.

During this period, she has done her training on "Steam Balancing of the Plant " under the guidance of Mr.Sanjib Chowdhury, Senior Manager - Production.

She has done her work in a dedicated and sincere manner and we wish her Good Luck in her future endeavours.

**Thanking you,  
For Phillips Carbon Black Limited**



**Reena Singh  
Divisional Head – Learning & Development**



26<sup>th</sup> November, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Naman Dudeja has completed his training with Phillips Carbon Black Limited from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019 in Production Department at Kochi.

During this period, he has done his training on "Compressed Air Optimization" under the guidance of Mr. Kevin Simon, Senior Manager - Production.

He has done his work in a dedicated and sincere manner and we wish him Good Luck in his future endeavours.

Thanking you,  
For Phillips Carbon Black Limited



**Reena Singh**  
Divisional Head – Learning & Development



26<sup>th</sup> November, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Nipun Shah has completed his training with Phillips Carbon Black Limited from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019 in Production Department at Kochi.

During this period, he has done his training on "Bagfilter Hopper Temperature Control" under the guidance of Mr. Kevin Simon, Senior Manager - Production.

He has done his work in a dedicated and sincere manner and we wish him Good Luck in his future endeavours.

Thanking you,  
For Phillips Carbon Black Limited



**Reena Singh**  
Divisional Head – Learning & Development



**26<sup>th</sup> November, 2019**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Arham Mirza has completed his training with Phillips Carbon Black Limited from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019 in Process Technology Department at Durgapur.

During this period, he has done his training on "Study on APH (all reactors) to calculate HTC, fouling factor and prepare a comparison analysis/report on APH performance With respect to different grade production " under the guidance of Mr. Arka Bose, Manager – Process Technology.

He has done his work in a dedicated and sincere manner and we wish him Good Luck in his future endeavours.

**Thanking you,  
For Phillips Carbon Black Limited**



**Reena Singh  
Divisional Head – Learning & Development**



**26<sup>th</sup> November,2019**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Devraja Devnarayan has completed his training with Phillips Carbon Black Limited from 1<sup>st</sup> June,2019 to 31<sup>st</sup> July,2019 in Production Department at Durgapur.

During this period, he has done his training on "Study on OPH (all reactors ) to calculate HTC Grade wise" under the guidance of Mr.Sudipta Bera, Deputy Manager - Production.

He has done his work in a dedicated and sincere manner and we wish him Good Luck in his future endeavours.

**Thanking you,  
For Phillips Carbon Black Limited**



**Reena Singh  
Divisional Head – Learning & Development**

---

**Phillips Carbon Black Limited  
Corporate Office**

RPSG House, 2/4 Judges Court Road, 4th Floor,  
Kolkata - 700 027, India.

T: +91 33 4087 0500/ 0600

**Phillips Carbon Black Limited  
Registered Office**

Duncan House, 31 N S Road, Kolkata - 700001,India  
T: +91 33 6625 1461-64.

Fax: +91 33 2248 0140/ 2243 6681

E-mail: [pcbl@rpsg.in](mailto:pcbl@rpsg.in). U: [www.pcbltd.com](http://www.pcbltd.com)

CIN: L23109WB1960PLCO24602



26<sup>th</sup> November, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Ankit Akash has completed his training with Phillips Carbon Black Limited from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019 in Production Department at Mundra.

During this period, he has done his training on "Gradewise Pellet Quality optimization in Line - 3" under the guidance of Mr. Vinod Chunilal Patel, Chief Manager - Production.

He has done his work in a dedicated and sincere manner and we wish him Good Luck in his future endeavours.

Thanking you,  
For Phillips Carbon Black Limited



**Reena Singh**  
Divisional Head – Learning & Development



26<sup>th</sup> November, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Ms. Sonali Garg has completed his training with Phillips Carbon Black Limited from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019 in Production Department at Mundra.

During this period, she has done her training on "Correction of air & steam leakages in Plant and to suggest preventive actions" under the guidance of Mr. Vinod Chunilal Patel, Chief Manager - Production.

She has done her work in a dedicated and sincere manner and we wish her Good Luck in her future endeavours.

Thanking you,  
For Phillips Carbon Black Limited



**Reena Singh**  
**Divisional Head – Learning & Development**



26<sup>th</sup> November, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Amrit Apurva has completed his training with Phillips Carbon Black Limited from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019 in Production Department at Palej.

During this period, he has done his training on "A study of consistent pellet hardness in Line 02" under the guidance of Mr. Lakshya Gupta, Deputy Manager - Production.

He has done his work in a dedicated and sincere manner and we wish him Good Luck in his future endeavours.

Thanking you,  
For Phillips Carbon Black Limited



**Reena Singh**  
Divisional Head – Learning & Development



26<sup>th</sup> November, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Ms. Sakshi Jain has completed her training with Phillips Carbon Black Limited from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019 in Technical Services & Business Development Department at Palej.

During this period, she has done her training on "Analysis Reason of FPV Value and its improvement" under the guidance of Mr. Dharmesh Solanki, Senior Manager - Technical Services & Business Development.

She has done her work in a dedicated and sincere manner and we wish her Good Luck in her future endeavours.

**Thanking you,  
For Phillips Carbon Black Limited**



**Reena Singh  
Divisional Head – Learning & Development**



## SUMMER INTERNSHIP COMPLETION CERTIFICATE

Date: 12 July, 2019

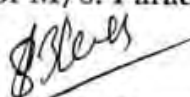
### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Pranay Jain**, a student of 6<sup>th</sup> semester studying at **University of Petroleum and Energy studies, Dehradun** pursuing his education in the discipline of **Chemical Engineering** has successfully completed his Internship between **May 27, 2019** and **July 12, 2019** at our Paradeep Works.

We are happy to inform you of the keen interest that he demonstrated in learning the operations in the sections assigned to him at the Plant.

We wish him all success in his future endeavors.

For M/s. Paradeep Phosphates Ltd.

  
**Suryansu Bhargab**  
Deputy General Manager – System

### **PARADEEP PHOSPHATES LIMITED**

CIN No.: U241290R1981PLC001020

P.O: PPL Township Paradeep - 754 145 Dist. Jagatsinghpur, Odisha, India.

Tel: +06722 259 600 Fax: +06722 229 625

[www.paradeepphosphates.com](http://www.paradeepphosphates.com)

Registered Office: Bayan Bhawan, Pandit J N Marg, Bhubaneswar - 751001





ACC Limited  
P.O. Jamul Cement Works  
Dist. Durg - 490 024  
Chhattisgarh, India

Phone +91 788 2285081 - 83  
Fax +91 788 2282585  
www.acclimited.com

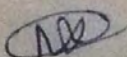
JML/HR/22/VOC/157  
July 20, 2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Pratik Patil, B. Tech in Chemical Engineering, VII<sup>th</sup> Semester student of University of Petroleum and Energy Studies, Dehradun had undergone **Summer Internship** at our Works from 27.05.2019 to 19.07.2019 on non-stipend basis as partial fulfilment of his Curriculum.

We wish all success in his future endeavour.

For ACC Limited,

  
**Nitin Yadav**  
Manager- HR  
Jamul Cement Works  
**ACC LIMITED**  
Jamul Cement Works  
Jamul, Distt.-Durg (C G ;  
PIN-490024



# Tablets (India) Limited

CIN U24231TN1938PLC002883  
179, T.H. ROAD, CHENNAI - 600 081.  
PHONE: 4596 3300  
FAX : 25916767



**TABLETS**

अयं मे विश्व भेषज :

Date : 24<sup>th</sup> June 2019

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.Praveen Nagar**, B.Tech-Chemical Engineering Student of University of Petroleum & Energy Studies, Dehradun, has undergone inplant training at our factory from 03.06.2019 to 22.06.2019 as a part of his B.Tech curriculum.

During the period of training he has been exposed to inplant aspects of Pharmaceutical Manufacturing and Analytical process involved.

During this period of his training we found him to be sincere and dedicated.

We wish him all success in his future endeavors.

For Tablets (India) Limited

V. Sekar  
General Manager – Personnel

Offices	• BOMBAY	• DELHI	• KOLKATA	• LUCKNOW	• BANGALORE	• ERNAKULAM	• VIJAYAWADA	• CHANDIGARH	• BHUBANESHWAR	• PATNA	• JAIPUR
Phone	22674020	25599135	22405442	2207513	26761133	2378467	2568187	2692247	2404754	2350333	2280392
	22673512	25599141	22802137	2206723	2768282		2567656	401019		2362020	2280042
			25637530		26761313						
			25838483								
Fax	022-22672176	011-25517757	033-25838482	0522-2208723	080-26760188	0484-2378468	0866-2568187	0172-2663114	0674-2402884	0612-2369077	0141-2280114

(REGD. OFFICE : 72, MARSHALLS ROAD, CHENNAI - 600 008. PH. : +91-44-42050000, FAX : +91-44-28589090)



KNPL/ADMIN/JNP/2019/06/HR16

1<sup>st</sup> July, 2019

**To Whomsoever It May Concern**

This is to certify that Mr. Pulkit Bhargva Third Year Student of B. Tech Chemical Engineering from University of Petroleum & Energy Studies, Dehradun has undergone Summer Internship programme from 20<sup>th</sup> May, 2019 to 29<sup>th</sup> June, 2019 on the following Project assignment in Decorative Process –Production Department at our Jainpur Plant, Kanpur Dehat.

**“To Improve the Yield of Primer Batch”**

His performance during the Internship was Excellent.

For M/s Kansai Nerolac Paints Limited,



Prabhat Pandey  
Head HR ER

Regd. Office :  
NEROLAC HOUSE  
Ganpatrao Kadam Marg,  
Lower Parel, Mumbai - 400013 India

[www.nerolac.com](http://www.nerolac.com)





Ref. No. Head (HR): Trg: 2019-20

19<sup>th</sup> Jul, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr. Raghav Sikka S/o Mr. Sunil Sikka** (Third Year Student of University of Petroleum and Energy Studies, Dehradun) has completed summer training period **from 27<sup>th</sup> May, 2019 to 19<sup>th</sup> Jul, 2019** in **Production Department** at Birla Carbon, Renukoot.

His topic of summer training was **"Impact of Quality of CBFS on The Quality and Yield of Carbon Black"**.

During the tenure of his summer internship in our organization, we found him sincere, hardworking, and devoted with full enthusiastic participation in concerned department activities.

We wish to him all the success in his life.

For Birla Carbon India Pvt. Ltd.  
(Unit: Renukoot)

A handwritten signature in blue ink, appearing to be "Rakesh Vashisth", written over a horizontal line.

**Rakesh Vashisth**  
**(Assistant Manager - HR)**

**Birla Carbon India Private Limited**  
(Formerly known as SKI Carbon Black (India) Private Limited)  
Unit : Renukoot

Murdhwa Indl. Area, P.O. Renukoot, Dist. Sonbhadra - 231 217, U.P., India

T : +91 5446 252388 - 91 / 255020 | F : +91 5446 252387 | W : [www.birlacarbon.com](http://www.birlacarbon.com) | CIN : U23201MH2013PTC241741

**Marketing Office** 910 - 911, Kailash Building, Kasturba Gandhi Marg, New Delhi - 110 001 | T : +91 11 2335 1069 / 71 | F : +91 11 2335 0594

**Regd. Office** Aditya Birla Centre, S. K. Ahire Marg, Worli, Mumbai - 400 030, India | T : +91 22 6652 5000





Ref. No. Head (HR): Trg: 2019-20

19<sup>th</sup> Jul, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr. Rajat Rastogi S/o Mr. Rajeev Rastogi** (Third Year Student of University of Petroleum and Energy Studies, Dehradun) has completed summer training period **from 27<sup>th</sup> May, 2019 to 19<sup>th</sup> Jul, 2019** in **Production Department** at Birla Carbon, Renukoot.

His topic of summer training was **"Carbon Black Production Technology"**.

During the tenure of his summer internship in our organization, we found him sincere, hardworking, and devoted with full enthusiastic participation in concerned department activities.

We wish to him all the success in his life.

For Birla Carbon India Pvt. Ltd.  
(Unit: Renukoot)

A blue ink signature of Rakesh Vashisth, written over a horizontal line.

**Rakesh Vashisth**  
**(Assistant Manager - HR)**

**Birla Carbon India Private Limited**  
(Formerly known as SKI Carbon Black (India) Private Limited)  
Unit : Renukoot

Murdhwa Indl. Area, P.O. Renukoot, Dist. Sonbhadra - 231 217, U.P., India

T : +91 5446 252388 - 91 / 255020 | F : +91 5446 252387 | W : [www.birlacarbon.com](http://www.birlacarbon.com) | CIN : U23201MH2013PTC241741

**Marketing Office** 910 - 911, Kailash Building, Kasturba Gandhi Marg, New Delhi - 110 001 | T : +91 11 2335 1069 / 71 | F : +91 11 2335 0594

**Regd. Office** Aditya Birla Centre, S. K. Ahire Marg, Worli, Mumbai - 400 030, India | T : +91 22 6652 5000



KNPL/ADMIN/JNP/2019/06/HR17

1<sup>st</sup> July, 2019

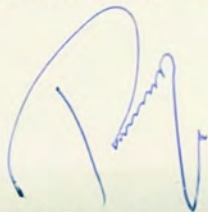
### **To Whomsoever It May Concern**

This is to certify that Mr. Ravikesh Tripathi, Third Year Student of B. Tech Chemical Engineering from University of Petroleum & Energy Studies, Dehradun has undergone Summer Internship programme from 20<sup>th</sup> May, 2019 to 29<sup>th</sup> June, 2019 on the following Project assignment in Decorative Process –Production Department at our Jainpur Plant, Kanpur Dehat.

#### **“To Improve the Grinding Time (Sand Mill) of GI Products & Decorative Solvent Products”**

His performance during the Internship was Excellent.

For M/s Kansai Nerolac Paints Limited,



**Prabhat Pandey**  
Head HR ER

Regd. Office :  
NEROLAC HOUSE  
Ganpatrao Kadam Marg,  
Lower Parel, Mumbai - 400013 India





# TechnipFMC

## TO WHOM IT MAY CONCERN

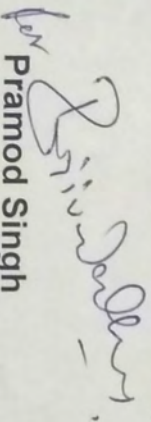
12<sup>th</sup> July 2019

This is to certify that, **Ms. Ritika Rawat** student of University of Petroleum and Energy Studies (UPES), Dehradun has undergone internship in our Process and Technology Department between **20<sup>th</sup> May 2019 to 12<sup>th</sup> July 2019**.

She has completed her training on "**Thermal Design of Shell & Tube Heat Exchangers and Air coolers**" under Process and Technology Department. She has prepared a project report under the guidance of our engineers in the above department.

We wish her all the success in her academic and professional career.

For **TECHNIP INDIA LIMITED**



**Pramod Singh**  
Head- People & Culture, Delhi



**Registered Office:**

Technip Tower,  
A - 4, Sector - 1,  
Noida - 201 301,  
Uttar Pradesh, India  
Phone: +91 120 430 1000  
Fax: + 91 120 430 1010

**Corporate Office:**

A - 602, Boomerang,  
Chandivall Farm Road,  
Andheri East, Mumbai - 400072,  
Maharashtra, India  
Phone: +91 22 6700 2000  
Fax: + 91 6695 5041

**Registered Office:**

B - 22, Okhla Industrial Area,  
Ph-I, New Delhi - 110 020, India  
CIN: U72200DL1971PLC005742  
Phone: +91 11 2681 7632  
Fax: +91 11 2681 4135  
TechnipFMC.com



## SUMMER INTERNSHIP COMPLETION CERTIFICATE

Date: 12 July, 2019

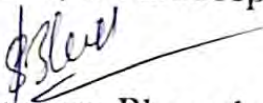
### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Robin Bahuguna**, a student of 6<sup>th</sup> semester studying at **University of Petroleum and Energy studies, Dehradun** pursuing his education in the discipline of **Chemical Engineering** has successfully completed his Internship between **May 27, 2019 and July 12, 2019** at our Paradeep Works.

We are happy to inform you of the keen interest that he demonstrated in learning the operations in the sections assigned to him at the Plant.

We wish him all success in his future endeavors.

For M/s. Paradeep Phosphates Ltd.

  
**Suryansu Bhargab**  
Deputy General Manager – System

### **PARADEEP PHOSPHATES LIMITED**

CIN No.: U241290R1981PLC001020

P.O: PPL Township Paradeep - 754 145 Dist. Jagatsinghpur, Odisha, India.

Tel: +06722 259 600 Fax: +06722 229 625

[www.paradeepphosphates.com](http://www.paradeepphosphates.com)

Registered Office: Bayan Bhawan, Pandit J N Marg, Bhubaneswar - 751001





UPL Limited, Unit - 2  
Plot No. 3405/6, G.I.D.C.  
Dist. Bharuch, Ankleshwar 393 002  
Gujarat, India.  
w: upl-ltd.com  
t: +91 2646 250578 / 250575

Date: 19<sup>th</sup> July 2019

Ref: UPL-2/HR/ANK/2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Sanyam Jain** has undergone training in Production Department as part of his Curriculum of the College from **27<sup>th</sup> May 2019 to 19<sup>th</sup> July 2019**.

During his tenure, we found him sincere and hardworking.

We wish him all success for bright future.

For UPL Limited - Unit 2

**Chintan Haranwala**  
Senior Manager  
Human Resource



Nagarjuna Road,  
Kakinada - 533 003.  
India,  
Phone : 2360390  
Fax : 0884 - 2362084, 2365020  
CIN : L24129AP2006PLC076238

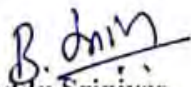


## CERTIFICATE

July 04, 2019

This is to Certify that Mr. SATYAM PANDEY(R900216093) student from UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN has done Project Work on "MATERIAL BALANCE ON AMMONIA PLANT" at NAGARJUNA FERTILIZERS AND CHEMICALS LIMITED, KAKINADA during 01.06.2019 TO 04.07.2019 as a partial fulfillment for the award of degree of Bachelor of Technology in Chemical Engineering .

For NAGARJUNA FERTILIZERS AND CHEMICALS LIMITED,

  
Boddu Srinivas  
Asst. Manager(Training)

TRAINING CENTRE  
NAGARJUNA FERTILIZERS AND CHEMICALS LIMITED  
NAGARJUNA ROAD  
KAKINADA, A.P. - 533 003

Regd. Off : Nagarjuna Hills, HYDERABAD - 500 082, India.



## SUMMER INTERNSHIP COMPLETION CERTIFICATE

Date: 12 July, 2019

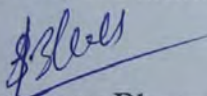
### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Shivam Shah**, a student of 6<sup>th</sup> semester studying at **University of Petroleum and Energy studies, Dehradun** pursuing his education in the discipline of **Chemical Engineering** has successfully completed his Internship between **May 27, 2019** and **July 12, 2019** at our Paradeep Works.

We are happy to inform you of the keen interest that he demonstrated in learning the operations in the sections assigned to him at the Plant.

We wish him all success in his future endeavors.

For M/s. Paradeep Phosphates Ltd.

  
**Suryansu Bhargab**  
Deputy General Manager – System

#### **PARADEEP PHOSPHATES LIMITED**

CIN No.: U241290R1981PLC001020

P.O: PPL Township Paradeep - 754 145 Dist. Jagatsinghpur, Odisha, India.

Tel: +06722 259 600 Fax: +06722 229 625

[www.paradeepphosphates.com](http://www.paradeepphosphates.com)

Registered Office: Bayan Bhawan, Pandit J N Marg, Bhubaneswar - 751001





(Formerly known as Bengal Cracker Complex Limited)

Plant :  
Post Box No.-12, Durgachak,  
Haldia, Dist.-Purba Medinipore  
West Bengal, Pin-721602, India  
TEL : + 91(03224) 274007/384/400/876,  
WEBSITE:www.haldiapetrochemicals.com  
CIN:U24100WB2015PLC205383

19.07.2019

### To Whom It May Concern

This is to certify that Mr. Shivdatta Jadhav, student of University of Petroleum and Energy Studies, Department of Chemical Engineering, has undergone summer training between 24.06.2019 and 19.07.2019 at our Haldia Plant.

He is being awarded this certificate on satisfactory completion of his training.

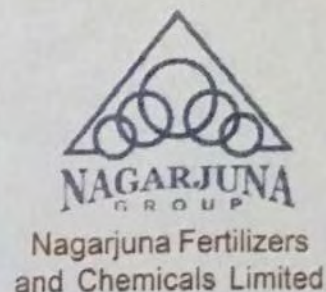
We wish him all success in his future endeavours.

Debabrata Burman

General Manager – HR (Admin & Training)



Nagarjuna Road,  
Kakinada - 533 003.  
India,  
Phone : 2360390  
Fax : 0884 - 2362084, 2365020  
CIN : L24129AP2006PLC076238

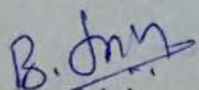


## CERTIFICATE

July 04, 2019

This is to Certify that **Mr. SHUBHAM KUMAR (R900216101)** student from **UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN** has done Project Work on **"MATERIAL BALANCE ON AMMONIA PLANT"** at **NAGARJUNA FERTILIZERS AND CHEMICALS LIMITED, KAKINADA** during **01.06.2019 TO 04.07.2019** as a partial fulfillment for the award of degree of **Bachelor of Technology in Chemical Engineering**.

For **NAGARJUNA FERTILIZERS AND CHEMICALS LIMITED,**

  
Boddu Srinivas  
Asst. Manager(Training)  
TRAINING CENTRE  
NAGARJUNA FERTILIZERS AND CHEMICALS LIMITED,  
NAGARJUNA ROAD  
KAKINADA, A.P. - 533 003

Regd. Off : Nagarjuna Hills, HYDERABAD - 500 082, India



नुमालीगढ़ रिफाइनरी लिमिटेड

भारत सरकार का उपक्रम

नुमालीगढ़ रिफाइनरी लिमिटेड

ভাৰত চৰকাৰৰ এক প্ৰতিষ্ঠান

NUMALIGARH  
REFINERY  
LIMITED

A GOVERNMENT OF INDIA ENTERPRISE



Ref: NRL/T&D/01

Date: 27/06/2019

**TO WHOM IT MAY CONCERN**

This is to certify that **Siddhant Bhardwaj** student of B. Tech Chemical Engg + RP.6<sup>th</sup> Sem. from University of Petroleum and Energy Studies had undergone Summer Internship at Numaligarh Refinery Limited.

He has made the report on “**Brief Overview of CDU, VDU, HCU, H2U & MSP**” at Numaligarh Refinery Limited during the month of June'19. He has successfully completed the Internship and submitted the report.

During the Training period **Siddhant Bhardwaj** was found to be sincere and good in his conduct.

We wish him all success in life.

Asish Baruah

আশিষ বৰুৱা / **ASHISH BARUAH**

मुख्य प्रबंधक (टी एंड डी) / CM (T&D)

नुमालीगढ़ रिफाइनरी लिमिटेड / Numaligarh Refinery Limited

गोलाघाट, असम - 785 699 / Golaghat, Assam - 785 699

पोस्ट: एन. आर. प्रोजेक्ट, जिला: गोलाघाट, असम, पिन-785699

P.O. : N.R. Project, District : Golaghat, Assam, PIN - 785699

Registered Office:

122 ए. जी एस रोड, क्रिश्चनबस्ती, गुवाहाटी - 781005 (असम). दूरभाष: 0361-2203140/2203147, फेक्स: 0361-2203146, वेबसाइट: www.nrl.co.in  
122A, G.S. Road, Christianbasti, Guwahati - 781005 (Assam), Phone: 0361-2203140/2203147. Fax: 0361-2203146. Website: www.nrl.co.in

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# Training Completion Certificate

*This is to certify that Mr./Ms. Sourabh Githala a student of "UPES, Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 03.06.2019 to 15.07.2019. He/She has successfully completed his/her project work on the topic "Wettability & Compatibility Studies of Weighted Spacers Containing Surfactants With SOBMs & Cement Slurries". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

**Date: 15-07-2019**

**In Charge**

**Students Academic Intensive Learning**

**Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013**



June 28, 2019

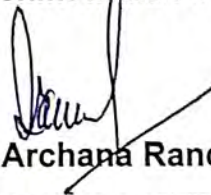
**WHOMSOEVER IT MAY CONCERN**

This is to certify that **MR. TRISHANK TANEJA**, student of **UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN, UTTARAKHAND** has undergone Internship training in "**Process Department**" at Techint India Pvt. Ltd., Thane, Maharashtra from **3<sup>rd</sup> June 2019 to 28<sup>th</sup> June 2019**.

We wish him every success for his future endeavours.

Very truly yours,

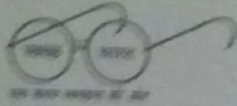
**Techint India Pvt Ltd.**



**Archana Randive**

**General Manager (HR & Facilities)**





इंडियन ऑयल कॉर्पोरेशन लिमिटेड

एओडी - डिगबोई रिफाइनरी

पो.बो. डिगबोई, पिन-786171, असम

Indian Oil Corporation Limited

AOD - Digboi Refinery

P.O. Digboi, Pin: 786171, Assam

Tel: 03751-262000

Fax: 03751-269015

E-mail: aoddigboi@indianoil.in

Website: www.ioil.com



असम ऑयल डिवीजन  
Assam Oil Division

संदर्भ / REF.NO - TRG.15/IT/ST/CERT/2019-20/20

दिनांक / DATE : 24/06/2019

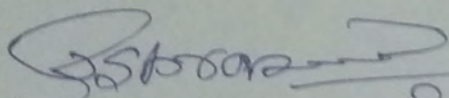
TO WHOM IT MAY CONCERN

THIS IS TO CERTIFY THAT Mr. UDIT NARAYAN MISHRA STUDENT OF B. TECH (CHEMICAL ENGINEERING) FROM UNIVERSITY OF PETROLEUM & ENERGY STUDIES, DEHRADUN HAS UNDERGONE SUMMER INTERNSHIP TRAINING AT INDIAN OIL CORPORATION LIMITED, (ASSAM OIL DIVISION) , DIGBOI, ASSAM. HE HAS SUCCESSFULLY COMPLETED HIS 1 (One) MONTH SUMMER INTERNSHIP TRAINING FROM 23.05.2019 TO 22.06.2019.

DURING THE TRAINING PERIOD HE HAS BEEN FOUND SINCERE AND HARD WORKING.

WE WISH HIM ALL THE BEST IN FUTURE.



  
(राधे श्याम प्रसाद / RADHE SHYAM PRASAD) 24/06/19

मुख्य प्रबंधक (अधिगम व विकास)  
CHIEF MANAGER (LRN & DEV)

मुख्य प्रबंधक (अधिगम व विकास)  
Chief Manager (LRN & DEV)  
आई.ओ.सी.एल. (एओडी), रिफाइनरी, डिगबोई  
I.O.C.L. (AOD), Refinery, Digboi  
डिगबोई/P.O. DIGBOI  
जिला, तिनसुकिया /Dist. Tinsukia  
पिन-786171 /Assam-786171

FOR

कार्यकारी निदेशक (ए ओ डी - डिगबोई रिफाइनरी)  
EXECUTIVE DIRECTOR (AOD - DIGBOI REFINERY)





FAX : 2562822/2560955  
Tel : 2564033/2563924  
EPABX : 2561909/2562847  
E-mail: [spcbtraining@gmail.com](mailto:spcbtraining@gmail.com)  
Website: [www.ospcbboard.org](http://www.ospcbboard.org)

## STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ODISHA]

Paribesh Bhawan, A/118, Nilakantha Nagar, Unit – VIII

**Bhubaneswar – 751 012, INDIA**

CENTRE FOR EXCELLENCE

No. 7798 /

Ind-IV-PCP(Misc)-77

Dt. 01.08.2019 /

### CERTIFICATE

This is to certify that **Shri Ketan Saini** [(R900216052 (500053807))],  
B. Tech (Chemical Engineering), University of Petroleum and Energy  
Studies (UPES), Dehradun, Uttarakhand has successfully completed  
Internship on “**Ambient Air Quality Monitoring Techniques and  
Methods**” under my guidance from **1<sup>st</sup> June, 2019 to 15<sup>th</sup> July, 2019** in  
State Pollution Control Board, Odisha, Bhubaneswar. He is sincere and  
hard working. I wish him all success.

**Dr. N. R. Sahoo**  
Chief Env. Engineer



Chief Environmental Engineer  
State Pollution Control Board  
Bhubaneswar 751012  
[www.ospcbboard.org](http://www.ospcbboard.org)





**SUMMER INTERNSHIP LETTER**

12.07.2019

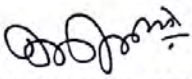
**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **VEDANT SUNDRIYAL** from **University of Petroleum and Energy Studies, Dehradun** has successfully completed his Summer Internship Project at **Reliance Industries Limited, Jamnagar** in Operations from **20.05.2019 to 12.07.2019** and worked on the project **"Water draining from crude tank to WDO tank via WDO header"**.

We wish Vedant Sundriyal all success for his future.

Yours faithfully,

For Reliance Industries Ltd.,

 12/07/2019  
AUTHORISED SIGNATORY

CIN: L17110MH1973PLC019786

P.O. Reliance Greens Sub-Post Office, Motikhavdi, Dist.: Jamnagar, - 361 142. Phone: +91-288-401 0000 / 661 0000 Website: [www.ril.com](http://www.ril.com)  
Refinery Division - Village Meghpar / Padana, Taluka Lalpur, Dist. Jamnagar, Gujarat.

Nirav T. Trivedi

Registered Office: 3rd Floor, Maker Chambers IV, 222 Nariman Point, Mumbai - 400 021, India.

11.07.2019 16:18

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July 12th, 2019

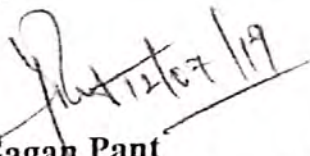
**To Whomsoever It May Concern**

This is to certify that **Mr. Vibhanshu Kaushik S/O Mr. Sandeep Kaushik of B.Tech (Chemical)** Student of **University of Petroleum and Energy Studies, Dehradun** successfully completed her Project training in our **Production Department** our **Gajraula works**, from **03<sup>th</sup> June 2019 to 12<sup>th</sup> July 2019**.

During his tenure, we found his hard working, sincere and dedicated with a learning attitude.

We wish him all the success for his future career.

For **Jubilant Life Sciences Ltd.**

  
**Gagan Pant**  
Assistant Manager HR

A Jubilant Bhartiya Company

OUR VALUES



**Jubilant Life Sciences Limited**  
Bhartiagram, Gajraula  
Distt. Amroha - 244 233, UP India  
Tel: +91 5924 252351, 252353-60  
Fax: +91 5924 252352  
[www.jubi.com](http://www.jubi.com)

Corporate Office:  
1-A, Sector 16-A,  
Noida-201 301, UP India  
Tel: +91 120 4361000  
Fax: +91 120 4234895-96

Regd Office:  
Bhartiagram, Gajraula  
Distt. Amroha - 244 223,  
UP India  
CIN - L24116UP1978PLC00462





कृमको फर्टिलाइजर्स लिमिटेड  
KRIBHCO Fertilizers Limited  
(Formerly KRIBHCO Shyam Fertilizers Limited)

ग्राम एवं पोस्ट पिपरोला  
शाहजहाँपुर-242001 (उ०प्र०)  
Village & Post Office :  
Piprola, Shahjahanpur-242001 (U.P.)  
Phone : +91-9792202401, 9792203112

KFL/V.T./2019/29

Dated: 10/07/2019

**CERTIFICATE OF INDUSTRIAL TRAINING**  
**TO WHOMSOEVER IT MAY CONCERN**

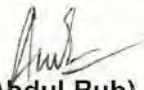
1. **Name of the Student :** Mr. Vimlesh Thakur
2. **Course :** B.Tech (Chemical Engineering)
3. **Name of the Institution :** University of Petroleum & Energy Studies, Dehradun (Uttarakha
4. **Period of Training :** 06/06/2019 to 10/07/2019
5. **Area in which training given :** Urea Process Department
6. **Training Incharge :** Mr. Subhash Priyadarshi, Asstt. General Manager (Urea Process)
7. **Title of the Project/ Assignment :** Study of Snamprogetti Urea Manufacturing Process at Kribhco Fertilizers Limited
8. **Training Report :**

Sl. No.	Attributes	Grade
1	Attendance	A
2	Punctuality	A
3	Conduct	A
4	Applied Knowledge	A
5	Initiative	A
6	Ideas/ Innovation	A
7	Accepting Responsibility	A

**For evaluation, Following grading is used :**

A for Excellent	(80% Marks & Above)
B for Very Good	(70% - 79% Marks)
C for Good	(60% - 69% Marks)
D for Average	(40% - 59% Marks)
E for Poor	Below 40% Marks

9. **Overall Rating :** 'A' Grade
10. **General Remarks :**  
During the training period, we found Mr. Vimlesh Thakur sincere, hard working & dedicated.  
  
We wish all success in his future career.

  
(Abdul Rub)  
Jt. GM (HRD)





इंडियन ऑयल कॉर्पोरेशन लिमिटेड

पानीपत रिफाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स

पानीपत, हरियाणा - 132140

Indian Oil Corporation Limited

Panipat Refinery & Petrochemical Complex

Panipat, Haryana - 132140

वेबसाइट : www.iocl.com; ई-मेल : panipatrefinery@indianoil.in

दूरभाष : 0180-2524001; फैक्स : 0180-2578833



रिफाइनरीज प्रभाग  
Refineries Division

Ref. No. PR/TR/VT/16(b)/TRG-53

Date:- 12-July-2019

**Certificate of Vocational Training**

Name	Mr. Vinamr Ratra
Roll No. / College ID	500052984
Father's Name (Shri)	Kewal Krishan Ratra
Name of Institute / College	University of Petroleum & Energy Studies (UPES)
Address of Institute / College	Bidholi via Premnagar Dehradun-248007
Course / Discipline	B. Tech., Chemical
Period of Training	03-June-2019 to 12-July-2019
Punctuality	Very Good
Conduct	Excellent
Performance	Excellent
Project Report	Submitted

We wish him all the success in future.

  
Radhakant Sharma

Assistant Manager (Learning & Development)

RADHAKANT SHARMA

सहायक प्रबंधक (सीलिंग एवं डेवलपमेंट)

Assistant Manager (L&D)

पानीपत रिफाइनरी (आई.ओ.सी.एल.)-132140

Panipat Refinery (I.O.C.L.)-132140

पंजीकृत कार्यालय: जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व), मुम्बई-400051, महाराष्ट्र (भारत)  
Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai-400051, Maharashtra (India)  
CIN - L 23201 MH 1959 GOI 011388



Ref: NRL/T&D/01

Date: 27/06/2019


TO WHOM IT MAY CONCERN

This is to certify that **Vishal Khatri** student of B. Tech Chemical Engg + RP.6<sup>th</sup> Sem. from University of Petroleum and Energy Studies had undergone Summer Internship at Numaligarh Refinery Limited.

He has made the report on “**Brief Overview of CDU, VDU, HCU, H2U & MSP**” at Numaligarh Refinery Limited during the month of June'19. He has successfully completed the Internship and submitted the report.

During the Training period **Vishal Khatri** was found to be sincere and good in his conduct.

We wish him all success in life.



Asish Baruah  
আশিষ বৰুৱা / ASHISH BARUAH  
CM (T&D)

মুখ্য প্ৰযোজক (টী এছ ডী) / CM (T&D)  
নুমালীগড় বিফাইনেৰী লিমিটেড / Numaligarh Refinery Limited  
গোলাঘাট, অসম - 785 699 / Golaghat, Assam - 785 699





CPP/HRD/ST/2019

DATE: 02.08.2019

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr.Yashaswi Sharma S/o Mr. V.K.Sharma a student of B.Tech (Chemical) 6<sup>th</sup> semester of UPES, Dehradun (U.K) has undergone 45 days summer training in **Board Process Department** of our organization **Century Pulp & Paper**, Ghanshyam Dham, Lalkua, Distt. Nainital, Uttarakhand from 14.06.2019 to 28.07.2019.

During the internship we found, **Mr.Yashaswi** is very good at behaviour and his approach towards learning the new things is excellent and appreciable.

We wish him all the very best for future endeavours.

For CENTURY PULP AND PAPER  
(Prop: Century Textiles and Industries Limited)

  
Satish Vema  
Sr.Manager-HR



CENTURY PULP AND PAPER

Ghanshyamdharm, Lalkua - 262402, Distt. - Nainital (Uttarakhand)  
Tel: +91 5945 268044 Fax: +91 5945 268047

Division of Century Textiles & Industries Ltd.

Registered Office: Century Bhavan, Dr Annie Besant Road, Worli, Mumbai 400030, Maharashtra, India.  
Tel: +91 22 24 957 000 Fax: +91 22 24 309 491/ 24361980 | centextho@centurytext.com | www.centurytextind.com  
CIN - L17120MH1897PLC000163





रिफाइनरीज़ प्रभाग  
Refineries Division

इंडियन ऑयल कॉर्पोरेशन लिमिटेड  
बरौनी रिफाइनरी, डाकघर : बरौनी ऑयल रिफाइनरी,  
जिला : बेगूसराय, बिहार - 851 114

Indian Oil Corporation Limited  
Barauni Refinery, P.O. : Barauni Oil Refinery,  
Distt. : Begusarai, Bihar - 851 114  
वेबसाइट : www.iocl.com

ई-मेल : baraunirefinery@indianoil.in  
दूरभाष : 06243-240159 / 240110  
फैक्स : 06243-240150 / 240278

ISO : 9001, 14001 & OHSAS : 18001 Certified Refinery



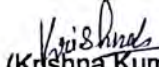
Ref: L&D/VT-CERT/19

Date: 12.07.2019

To whom it may concern


It is to certify that Mr. YASHESH RAO, Roll No. R900216123 a student of Chemical Engineering discipline from UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN has been undergone Industrial Training(VT) in IOCL Barauni Refinery from 01.06.2019 to 12.07.2019 in the functional area of Production Department. A brief account of his learning is compiled and submitted as project work.

As a trainee he is found to be punctual; demonstrated keen interest in learning and acquiring skills. We wish him all the success in his career.

  
(Krishna Kumari) 12/07/19

Asst. Manager,  
Learning & Development.

कृष्णा कुमारी  
KRISHNA KUMARI  
सहायक प्रबंधक (प्रशिक्षण एवं विकास)  
ASST. MANAGER (T & D)  
इंडियन ऑयल कॉर्पोरेशन लिमिटेड  
INDIAN OIL CORPORATION LTD.  
बरौनी रिफाइनरी, बेगूसराय - 851 114 (बिहार)  
Barauni Refinery, Begusarai - 851 114 (Bihar)

 Barauni Refinery - In harmony with nature

पंजीकृत कार्यालय : जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व), मुम्बई-400 051, महाराष्ट्र (भारत)  
Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai-400 051, Maharashtra (India)  
CIN - L 23201 MH 1959 GOI 011388



Ref.: NTL/HRD/04/2019-20

08<sup>th</sup> August 2019

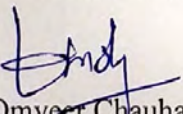
**Yasser Ahmed Khan,**  
University of Petroleum and Energy Studies (UPES)  
P.O. Bidholi Via-Prem Nagar,  
Dehradun-248007

This is to certify that **Yasser Ahmed Khan**, a student of **B.Tech (Chemical Branch)** Roll No. R900216124 has completed 45 Days summer training from 10<sup>th</sup> June 2019 to 05<sup>th</sup> July 2019 in Chemical Department of our company in which he learned the process of paper making. His performance during the training was exemplary and he showed great interest in learning.

His behavior and conduct during the training period was appreciable.

We wish him a successful and bright future ahead.

**For Naini Tissues Ltd.**



Omveer Chauhan  
**Sr. Manager \_HR**

## **Naini Tissues Limited**

An ISO 9001:2008; ISO 14001:2004; OHSAS 18001:2007 Certified Company

**Corporate Office:** Station Road, Kashipur-244713 (Uttarakhand) Tel.: +91 (5947) 279331, 275872

**Works :** 7<sup>th</sup> Km. Stone, Moradabad Road, Kashipur-244713 (Uttarakhand) Tel.: +91 (5947) 275913/14/15

[info@nainigroup.com](mailto:info@nainigroup.com) | [www.nainigroup.com](http://www.nainigroup.com)





**दिल्ली मेट्रो रेल कॉर्पोरेशन लि०**  
**DELHI METRO RAIL CORPORATION LTD.**

(A JOINT VENTURE OF GOVERNMENT OF INDIA AND GOVT. OF DELHI)

Office of the Chief Project Manager-5,  
GROUND FLOOR, AIRPORT EXPRESS METRO STATION, DHAULA KUAN,  
NEW DELHI-110010

No. DMRC/CPM-5/1065/2019/11538

30<sup>th</sup> July, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Krishna Rai, student of University of Petroleum & Energy Studies (UPES), Dehradun has successfully completed training (From 25<sup>th</sup> May, 2019 to 15<sup>th</sup> July, 2019) in Delhi Metro Rail Corporation Ltd.

During this period he has undergone training in various construction related activities and finishing works etc.

We wish him all the success in his future.

(A.S. BISHT)

CHIEF PROJECT MANAGER-5





**Date:** 24<sup>th</sup> July 2019

**Ref No.:** TR/CL/REL/00396

**To Whomsoever It May Concern**

This is to confirm that **Mr. Baban Kumar (Roll no 500054113)**, has completed his 'Training' at **Indiabulls Real Estate Limited** with the Construction Team, Gurgaon from 03<sup>rd</sup> June 2019 to 13<sup>th</sup> July 2019.

During the said training period with us we found him sincere and hard working. His dues are clear from our end.

We wish him success in the future.

**For Indiabulls Real Estate Limited**

**Authority Signatory**

**Human Resources**

**Indiabulls Real Estate Limited**

CIN: L45101DL2006PLC148314

Corporate Office: Indiabulls House 448-451, Udyog Vihar, Phase -V, Gurgaon - 122 016 Tel: (0124) 6681199 Fax: (124) 6692890  
Registered Office: M. 62 & 63, 1st Floor, Connaught Place, New Delhi - 110 001 Tel: 41899900, 41899910 Fax: (011) 41899917

**183550**





**BSES Rajdhani Power Limited**

BSES Bhawan, Nehru Place,

New Delhi - 110 019, India.

CIN : U40109DL2001PLC111527

GST : 07AAGCS3187H2Z3

Tel.: +91 11 3009 9999

Fax: +91 11 3999 7888

www.bsesdelhi.com

30<sup>th</sup> July, 2019

### **PROJECT COMPLETION CERTIFICATE**

This is to certify that Mr. Lakshya Jangpangi has completed the project given to him as per the following details.

Name of the Student	: Lakshya Jangpangi
Name of College/Institute/University/Polytechnic	: University of Petroleum and Energy Studies, Dehradun.
Date of commencement of Training	: 05.06.2019
Date of completion of Training	: 15.07.2019
Department in which training done	: C&M
Project Name	: Overview of Power Distribution Grid

We wish him success in his future endeavors.

Yours truly,

**For BSES Rajdhani Power Limited**

**AUTHORISED SIGNATORY**





Phone - 0135-2729863

कार्यालय अधिशासी अभियन्ता,  
निर्माण खण्ड, लो०नि०वि०, देहरादून



Office of the Executive Engineer, Construction Division, P.W.D., Dehradun, Uttarakhand  
Website- <http://pwd.uk.gov.in> E-mail: [eeccdddn.pwduk@gov.in](mailto:eeccdddn.pwduk@gov.in)

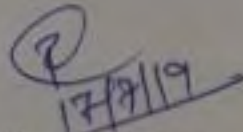
पत्रांक 2091 / 23

दिनांक 17 / 07 / 2019

## TRAINING CERTIFICATE

This is to certify that *Ms. Kalpana Joshi*, Student of *University of Petroleum & Energy Studies (UPES), Dehradun* successfully completed 06 Weeks Training w.e.f., *01-06-2019 To 16-07-2019* in this division.

We wish her success in life.

  
17/7/19  
Executive Engineer,  
Construction Division., P.W.D.,  
Dehradun



No. 01/2019/Trg/125

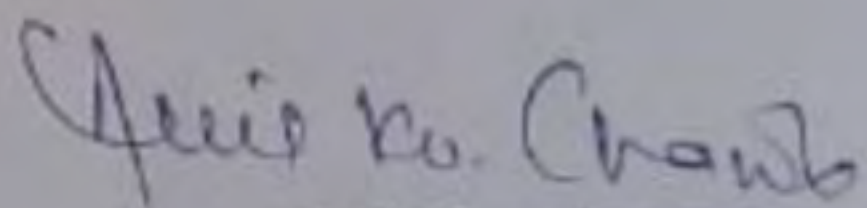
18<sup>th</sup> July, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Tarun Dhyani (Roll No. R680216052) S/o Mr. Vinod Dhyani, Student of B. Tech. (Civil), 3<sup>rd</sup> Year (6<sup>th</sup> Semester) in U.P.E.S. Dehradun, has successfully completed his 6 weeks Internship Training from 01.06.2019 to 12.07.2019 at our NBCC (India) Limited, ISA/IPEA Complex Extension of IPO Building, Phase 3, Dwarka, New Delhi.

His works and conduct during the training was found satisfactory.

We wish him good luck & success in his future endeavour.

  
**A K Chawla**  
**DGM (HRM)**

Mr. Tarun Dhyani  
(Roll No. R680216052)  
S/o Mr. Vinod Dhyani,  
U.P.E.S.  
Dehradun.





# Niraniya Construction Company



64 , Udyog Nagar, Opp. Road No. 8 V.K.I. Area Sikar Road, Jaipur.  
e-mail : nccjaipur@yahoo.co.in, Mob. No. 9413620131, 9829165246, 9828707281

**'AA' Class Govt. Contractor (Civil & Electric)**

Ref. :

Date : .....

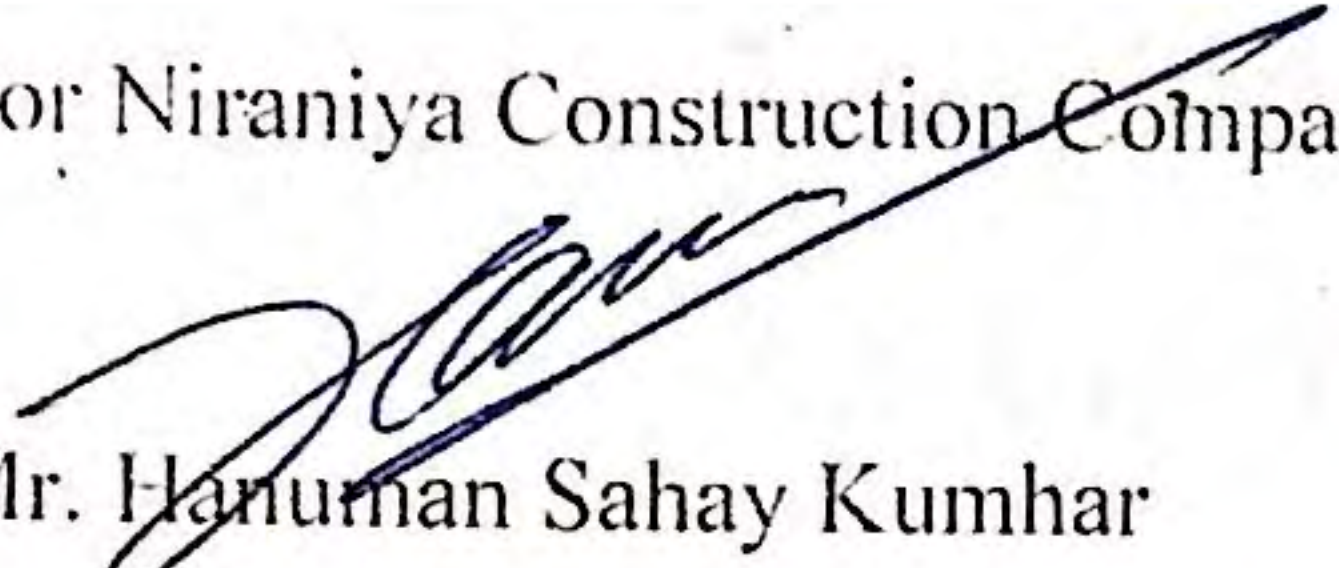
## SUMMER TRAINING CERTIFICATE

This is to certify **Dharampal Devenda S/o Badri Narayan Devenda** successfully completed summer internship from 20/06/2019 to 20/07/2019 at site :- Outer Development of Rajasthan International Centre near OTS Jaipur , under **Niraniya Construction Company**. His internship activity includes Execution of Road (Concrete) & Building work on site.

During the period of his internship program with us he was exposed to different processes and was found punctual, hard working and inquisitive. We wish him every success in life and career.

Certified on this 30/07/2019, at Jaipur

For Niraniya Construction Company

  
Mr. Hanuman Sahay Kumhar

(Project Manager Civil)



# **RELIANCE INFRASTRUCTURE LIMITED**

**EPC DIVISION, 2/22A, SHANTINIKETAN, SOUTH MOTI BAGH, NEW DELHI (110021).**



**Infrastructure**

## **CERTIFICATE**

**This is to certify that Mr. Nischal Agarwal a Student of B.Tech Civil Engineering of University of Petroleum and Energy Studies, Dehradun, attended a Summer Internship Program in Reliance Infrastructure Limited, EPC Division from 03-06-2019 to 20-07-2019 for 7 weeks.**

**During internship period, he was assigned to work on**

- 1. Worked on the construction of 66/11 KV GIS Sub Station at Dwarka.**

**And has shown the right kind of attitude and approach towards the profession with keen interest and huge potential.**

**Mr. Nischal Agarwal has successfully completed his internship. Reliance Infrastructure Limited wish him a successful career in future.**

A handwritten signature in blue ink, appearing to read "Makarand Deshpande".

**Makarand Deshpande**

**(Vice President Reliance Group)**





**BSES Rajdhani Power Limited**

BSES Bhawan, Nehru Place,  
New Delhi - 110 019, India.

CIN : U40109DL2001PLC111527

GST : 07AAGCS3187H2Z3

Tel.: +91 11 3009 9999

Fax: +91 11 3999 7888

www.bsesdelhi.com

30<sup>th</sup> July, 2019

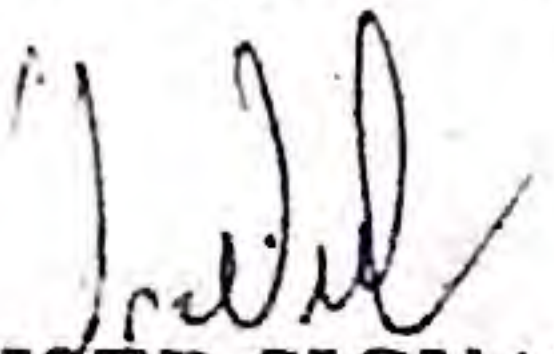
### **PROJECT COMPLETION CERTIFICATE**

This is to certify that Mr. Sourav Paul has completed the project given to him as per the following details.

Name of the Student	: Sourav Paul
Name of College/Institute/University/Polytechnic	: University of Petroleum and Energy Studies, Dehradun.
Date of commencement of Training	: 05.06.2019
Date of completion of Training	: 15.07.2019
Department in which training done	: C&M
Project Name	: Overview of Power Distribution Grid

We wish him success in his future endeavors.

Yours truly,  
For BSES Rajdhani Power Limited

  
AUTHORISED SIGNATORY





**LARSEN & TOUBRO**

ECCD/HR-TIIC/TRG/076  
24.06.2019

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that Mr. Karan Singla undergoing B.Tech - Civil Engineering from UPES University has successfully completed his internship at our Dwarka Expressway Project Site as per his curriculum requirement from 27<sup>th</sup> May 2019 to 17<sup>th</sup> July 2019.

He has been found sincere and hardworking to the best of our knowledge & satisfaction during his tenure with us.

We wish him all the best for his future endeavours.

Regards,

Yours faithfully,  
For LARSEN & TOUBRO LIMITED



*Raman Sharma*  
RAMAN SHARMA  
CLUSTER HR  
RREC-DELHI

**Larsen & Toubro Limited Railway Business Group**

Vatika Mindscape Building, Tower-A, 8th Floor, 12/3 Delhi Mathura Road,  
Near Sarai Metro Station, Faridabad-121003, Haryana INDIA  
Tel: +91 129 6620 900, Fax: +91 129 6620 799 www.lntec.com  
CIN: L99999MH1946PLC004768

Registered Office:  
L&T House, N. M. Marg,  
Ballard Estate,  
Mumbai - 400 001, INDIA





Date: 12<sup>th</sup> July 2019

Ref No.: TBCL/REL/00559

**To Whomsoever It May Concern**

This is to confirm that Mr. Shriyam Sharma, a student of University Of Petroleum And Energy Studies - Dehradun, has completed his 'Training' at Indiabulls Real Estate Limited with the Construction Team, Gurgaon from 03<sup>rd</sup> June 2019 to 12<sup>th</sup> July 2019.

During the said training period with us we found him sincere and hard working. His dues are clear from our end.

We wish him success in the future.

For Indiabulls Real Estate Limited

A handwritten signature in black ink, appearing to read "Ankur", is written over a circular stamp. The stamp contains the text "INDIABULLS REAL ESTATE LIMITED" around the perimeter and "HUMAN RESOURCES" at the bottom. The signature is written in a cursive style.

Authority Signatory

Human Resources



**SRA****Road Builders  
& Construction  
Association**

SRA/RWR-CTP14/19-20/04

24 June 2019

**TO WHOM SO EVER IT MAY CONCERN**

This is to certified that Mr. Deepanshu Yadav undergoing B.Tech-Civil Engineering From UPES University has successfully completed his internship at our "WESTERN DEDICATED FREIGHT CORRIDOR PROJECT -CTP-14, REWARI, Project site as per his curriculum requirement from 27<sup>th</sup> may 2019 to 17 july 2019.

During this time he has exhibit great interest and enthusiasm, he has been found sincere and hardworking of our knowledge & satisfaction during his tenure with us.

We wish him all the best for his future endeavours.

Regards

Yours faithfully,

For S.R. & ASSOCIATES



SANJEEV KUMAR

CLUSTER HR

B.O.: Ahead Birju Singh Filling Station  
V.P.O- Jarthal ( Rewari)- 123401  
M: 9416000974, 9812011433

HEAD OFFICE : SHOP NO, 51  
NEW GRAIN MARKET,  
JHAJJAR ( HARYANA) 124103



# Indiabulls

Date: 12<sup>th</sup> July 2019

Ref No.: TR/CL/REL/00560

## To Whomsoever It May Concern

This is to confirm that Mr. Ashish Yadav, a student of University Of Petroleum And Energy Studies - Dehradun, has completed his 'Training' at Indiabulls Real Estate Limited with the Construction Team, Gurgaon from 03<sup>rd</sup> June 2019 to 12<sup>th</sup> July 2019.

During the said training period with us we found him sincere and hard working. His dues are clear from our end.

We wish him success in the future.

For Indiabulls Real Estate Limited

  
Authority Signatory  
Human Resources





**LARSEN & TOUBRO**

Larsen & Toubro Limited,  
Construction  
Heavy Civil Infrastructure  
P. B. No. 979, Mount Poonamallee Road,  
Manapakkam,  
Chennai - 600 089, INDIA  
Tel : +91-44-3319 2000, 3319 3000  
Fax : +91-44-3319 2950  
www.Lntecc.com

HCI/TD/INT/2019-20/004

20<sup>th</sup> July, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Abdul Hadi who is pursuing Undergraduate in Civil Engineering at University of Petroleum & Energy Studies, has successfully completed the Internship Training at our Barapullah Bridge Project Office from 27<sup>th</sup> May – 17<sup>th</sup> July, 2019.

Our best wishes and success in all his future endeavors

Sincerely,

For Larsen & Toubro Limited

Mohan Jadhav  
Deputy General Manager- HR





Date :



**Gammon Engineers And Contractors Private Limited**

**Mumbai - 400025 , India**

This is to certify that Ms. Aparna Kumari, Registration No. R680216012, student of 3rd year (B.Tech CIVIL ENGINEERING) , UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN, has successfully completed her seven weeks internship training under project ELEVATED ROAD CORRIDOR PROJECT , PATNA [AIIMS TO DIGHA/JC-9211] from 27th May 2019 to 15th July 2019.

I wish her a successful life ahead.

**SUDEEP KUMAR VERMA**

**Sr. Manager (HR & Administration)**



**Office of the Executive Engineer  
Construction Division P.W.D.  
Sitapur**

Letter No:- 1175 /E-3 / 2019-20

Date:- 26.08.2019

**Sub:- Vocational Training of Civil Engineering.**

Certified that Sri Himanshu Kumar Singh S/O Sri Prem Chandra Dhusia Student of Civil Engineering from U.P. E.S. Dehradun has successfully completed his training here at C.D. PWD sitapur Division for 60 Days (24-06-2019 to 23-08-2019) During his training period he maintained sincerity & devotion in his work.

I wish all success in his life.

  
Assistant Engineer  
Construction Division PWD  
Sitapur 





ATLAS CONSTRUCTIONS PVT. LTD.



**TO WHOM IT MAY CONCERN**

This is to certify that Mr. Ayush Bijalwan, S/o- Mr. Dinesh Kumar Bijalwan, a student of B.Tech 3<sup>rd</sup> Year (Civil Engineering), University of Petroleum and Energy Studies, Dehradun (U.K) has successfully completed 45 days (From 01<sup>st</sup> June 2019 to 15<sup>th</sup> July 2019) summer training programme at this company on construction site namely "Balance Work of 4-laning of Haridwar- Dehradun Section from Km. 211.000 to Km. 218.200 of NH-58 and Km. 165.000 to Km. 196.825 of NH-72 in the State of Uttarakhand under NHDP Phase-III - Package-2 from Laltappar design Ch. 181+100 to Mohakampur design Ch. 158+900 of NH-72".

During the period of his training programme with us, he was found to be punctual, hardworking and inquisitive.

We wish him every success in life.

**LOKESH S. DESHWAL**  
f ; Admin & HR Head (HDR)

**ATLAS-NKC JV**

Corp. Off.: 102, Sector - 15, Faridabad, 121007 (India)  
Phone: + 91 129 - 2299112 | 4109670 Email: atlas.infra@gmail.com



Ref. No: .....

Date: .....

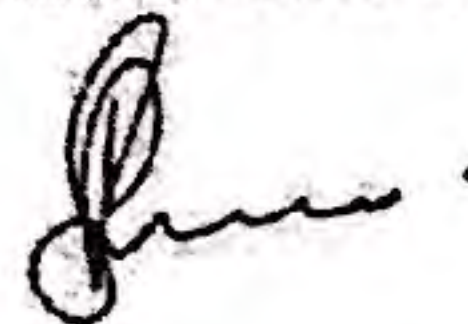
**To Whomsoever It May Concern**

This is to confirm that Mr. Gurkirat Singh Sethi, student of University Of Petroleum And Energy Studies , Dehradun, has completed his training at M/s Sant Construction Co., With our construction team, at Airforce Station, Sirsa from 03<sup>rd</sup> June to 16<sup>th</sup> August 2019

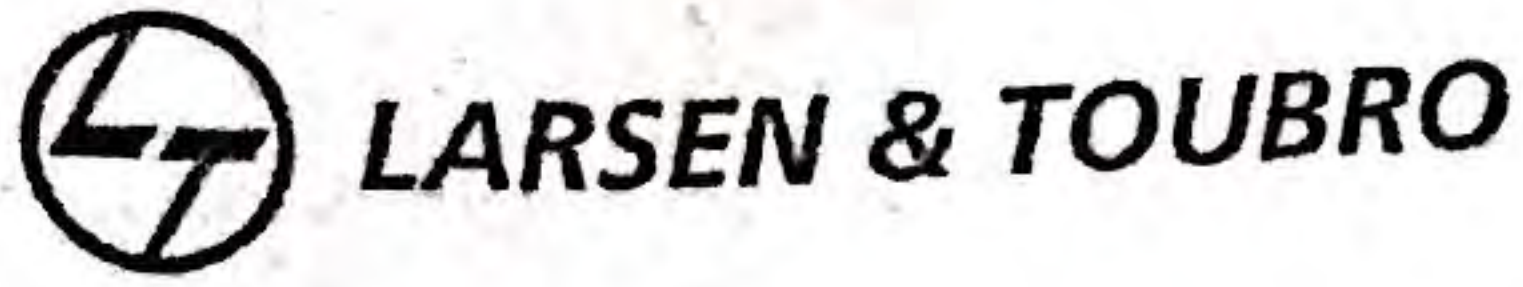
During the Training period with us we found him sincere and hard working.

We wish him success in his future.

M/s Sant Construction Co







Larsen & Toubro Limited,  
Construction  
Heavy Civil Infrastructure  
P. B. No. 979, Mount Poonamallee Road,  
Manapakkam,  
Chennai - 600 089, INDIA  
Tel : +91-44-3319 2000, 3319 3000  
Fax : +91-44-3319 2950  
www.Lntecc.com

HCI/TD/INT/2019-20/005  
20<sup>th</sup> July, 2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Abhishek Datt who is pursuing Undergraduate in Civil Engineering at University of Petroleum & Energy Studies, has successfully completed the Internship Training at our Barapullah Bridge Project Office from 27<sup>th</sup> May – 17<sup>th</sup> July, 2019.

Our best wishes and success in all his future endeavors

Sincerely,  
For Larsen & Toubro Limited

Mohan Jadhav  
Deputy General Manager- HR



Registered Office: L&T House, N. M. Marg, Ballard Estate, Mumbai - 400 001, INDIA  
Licence No.: CIN - L99999MH1946PLC004768

L&T Construction - Heavy Civil Infrastructure is a brand of Larsen & Toubro Limited



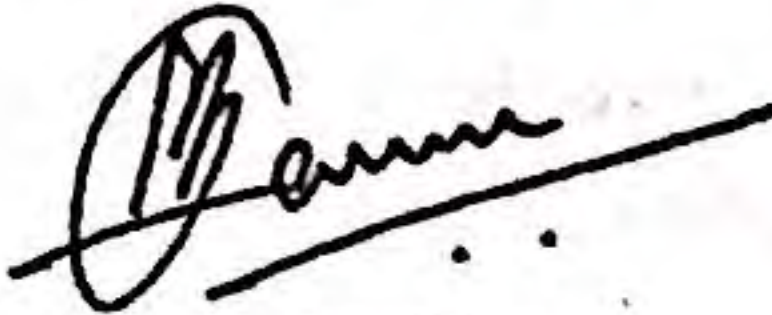
HCI/TD/INT/2019-20/007  
20<sup>th</sup> July, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Anubhav Kumar who is pursuing Undergraduate in Civil Engineering at University of Petroleum & Energy Studies, has successfully completed the Internship Training at our Barapullah Bridge Project Office from 03<sup>rd</sup> June – 17<sup>th</sup> July, 2019.

Our best wishes and success in all his future endeavors

Sincerely,  
For Larsen & Toubro Limited



**Mohan Jadhav  
Deputy General Manager- HR**





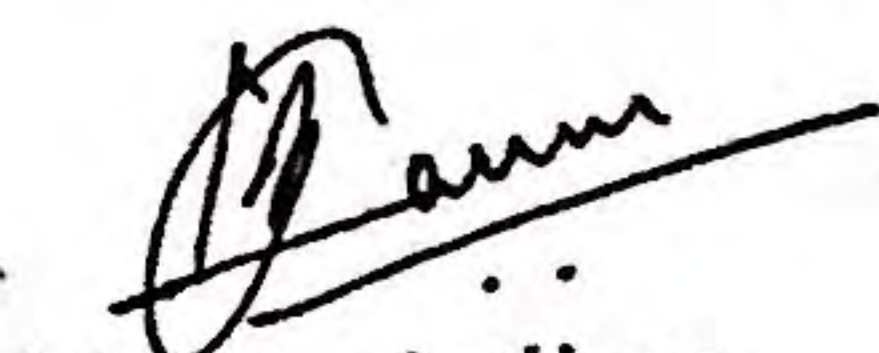
HCI/TD/INT/2019-20/006  
20<sup>th</sup> July, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr. Ankit Yadav** who is pursuing Undergraduate in Civil Engineering at University of Petroleum & Energy Studies, has successfully completed the Internship Training at our Barapullah Bridge Project Office from 03<sup>rd</sup> June – 17<sup>th</sup> July, 2019.

Our best wishes and success in all his future endeavors

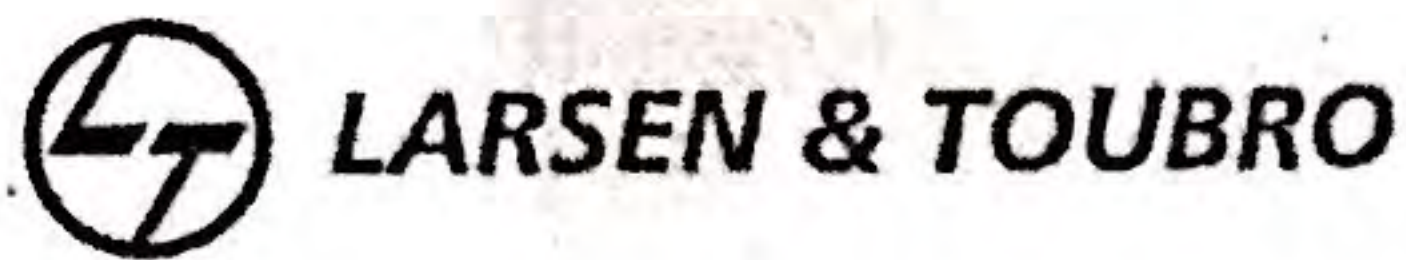
Sincerely,  
For Larsen & Toubro Limited



**Mohan Jadhav  
Deputy General Manager- HR**







Larsen & Toubro Limited,  
Construction  
Heavy Civil Infrastructure  
P. B. No. 979, Mount Poonamallee Road,  
Manapakkam,  
Chennai - 600 089, INDIA  
Tel : +91-44-3319 2000, 3319 3000  
Fax : +91-44-3319 2950  
www.Lntecc.com

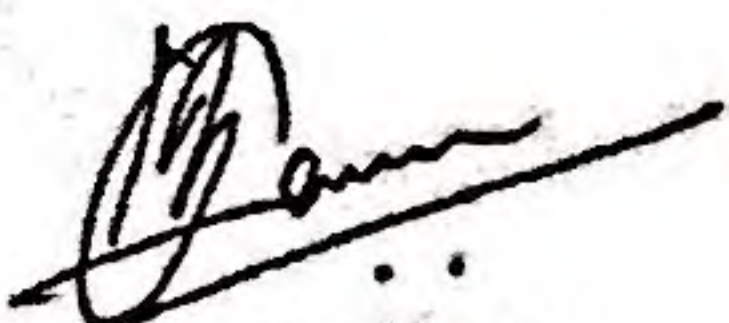
HCI/TD/INT/2019-20/008  
20<sup>th</sup> July, 2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Anuj Kumar Singhal who is pursuing Undergraduate in Civil Engineering at University of Petroleum & Energy Studies, has successfully completed the Internship Training at our Barapullah Bridge Project Office from 27<sup>th</sup> May – 17<sup>th</sup> July, 2019.

Our best wishes and success in all his future endeavors

Sincerely,  
For Larsen & Toubro Limited

  
Mohan Jadhav  
Deputy General Manager- HR



Registered Office: L&T House, N. M. Marg, Ballard Estate, Mumbai - 400 001. INDIA  
Licence No.: CIN - L99999MH1946PLC004768

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Sensitivity: LNT Construction Internal Use



# CERTIFICATE

I am Paras Yadav, student of B.Tech Civil, 3<sup>rd</sup> Year of University of Petroleum & Energy Studies, Dehradun completed my summer internship/training from Haryana Irrigation Department from June 10, 2019 to August 09, 2019.

During the above mentioned period of training, I worked as an intern at M/s Ved Prakash Contractor – I and completed my training in “Major Bridge Construction above Ujina Drain Diversion” under the guidance of Mr. Sushil Sharma. This Bridge is constructed under Irrigation And Water Resources Department of Haryana.

**Dated: 19/Aug/19**

**Name: Paras Yadav**





कार्यालय अधिशासी अभियन्ता,  
प्रान्तीय खण्ड, लो०नि०वि०, देहरादून

OFFICE OF THE EXECUTIVE ENGINEER PROVINCIAL DIVISION PWD DEHRADUN  
E-mail ID - exnpddun@gmail.com/Phone/Fax NO- 0135-2623746


पत्रांक 41/प्रशिक्षण

दिनांक 24.07.2019

### प्रशिक्षण प्रमाण-पत्र

प्रमाणित किया जाता है कि कु० मनस्विनी नौगाई पुत्री श्री अशोक कुमार, यू०पी०ई०एस० यूनिवर्सिटी, देहरादून से बी.टेक (सिविल) कोर्स के अन्तर्गत VI सेमेस्टर करने के उपरान्त इनके द्वारा इस खण्ड के अन्तर्गत दिनांक 3.6.2019 से दिनांक 15.7.2019 के मध्य 42 दिन का प्रशिक्षण सन्तोषजनक रूप से पूर्ण कर दिया गया है।

मैं इनके उज्ज्वल भविष्य की कामना करता हूँ।

  
(ई० जे०एस० चौहान) 24/7/19  
अधिशासी अभियन्ता,  
प्रान्तीय खण्ड, लो०नि०वि०,  
देहरादून





लघु सिंचाई विभाग, उत्तर प्रदेश  
MINOR IRRIGATION DEPARTMENT  
UTTAR PRADESH  
Office of the Block Development Officer  
VIKAS KHAND, DEEH  
RAEBARELI-229001



No.RD/UP/MI2019/016

August 1, 2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Jyotsna Yadav, who is pursuing Undergraduate in Civil Engineering from University of Petroleum & Energy Studies, has successfully completed the Internship Training from 27<sup>th</sup> May, 2019 to 17<sup>th</sup> July, 2019 Under Minor Irrigation Department, Uttar Pradesh.

During this period, she has undergone training in various Developmental Projects and construction related activities of State Government.

Our best wishes and success in all her future endeavours.

(Akshayabar Nath Yadav)  
J.E.M.I. **A.N. YADAV**  
Minor Irrigation (M.I.)  
Block-Deeh, Raebareli,  
District-Raebareli  
(U.P.)

(Kamlesh Dwivedi)  
B.D.O. **बि.डी.ओ. विकास अधिकारी**  
Block-Deeh **ब्लॉक-दीह**  
District-Raebareli **रायबरेली**  
(U.P.)



Garrison Engineer (South)  
Military Engineer Services  
Shankar Vihar, Delhi Cantt-10

**TO WHOMSOEVER IT MAY CONCERN**

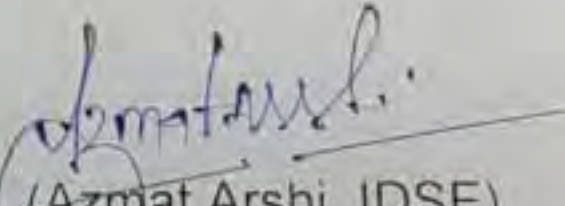
This is to certify that Ms Gajala Anjum in 7<sup>th</sup> Semester of Civil Engineering from University of Petroleum & Energy Studies, Dehradun has served her Industrial Internship as a Trainee Engineer from 1<sup>st</sup> Jun 2019 to 15<sup>th</sup> July 2019 at our project site of "Construction of KLP for Engineer Regiment Phase-II at Delhi Cantt" costing Rs 2285 Lakh.

In this project, she has shown keen interest and participated in various construction activities of Officers Mess Complex and Officers Administrative Complex alongwith MT Park.

It is noteworthy to mention her credible performance & keen observation during her tenure with our organization. She has also shown good cooperation & displayed much initiation in her training throughout the period. We wish her all the best for future endeavours and prospects.

With warm regards,



  
(Azmat Arshi, IDSE)  
EE  
Garrison Engineer (South)





एस. सी. श्रीवास्तव

अधीक्षण अभिर्यता (सिविल)  
कमांडर

SC Srivastava, SE (Civ)  
Commander



SHIVALIK

Tel. Exch : 01374-222076  
Fax : 01374-222077  
E-mail : bro-36brtf@nic.in  
Website : http://www.bro.nic.in

मुख्यालय

36 सीमा सड़क कृतिक बल

पिन-930036

द्वारा-56 सेना डाकघर

Headquarters

36 Border Roads Task Force

PIN-930036

C/O 56 APO

8000/Chardham/R-D/28.600-59.420/51 /EPC Cell

25 Sep 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Prateek Negi who is pursuing undergraduate in Civil Engineering at University of Petroleum & Energy Studies, has successfully completed the **Internship Training** with EPC Contractor M/S Gawar Construction Ltd, DSS-378, Sector 16-17, Hissar Haryana under 36 BRTF (GREF) from 13 June 2019 to 27 July 2019.

Our best wishes and success in all his future endeavours.



(SC Srivastava)  
SE (Civ)  
Commander





**Mussoorie Dehradun Development Authority**  
**Transport Nagar, Saharanpur Road, Dehradun**

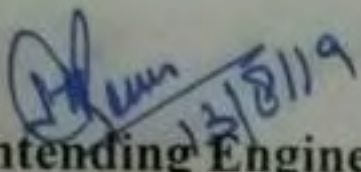
Dated: 13/08/2019


**SUMMER TRAINING CERTIFICATE**

This is to certify that Mr. Ayush Sahu a student of B.Tech in Civil Engineering, UPES, Dehradun has successfully completed his 45 Days Training, as trainee at the Project Management Unit (PMU), MDDA.

He assisted in Construction work, visit to Aalyam Housing Project at Aamwala Tarla, Dehradun, Project Management Unit Cell – Mussoorie Dehradun Development Authority.

I hereby certify his work satisfactory to the best of my knowledge.

  
**Superintending Engineer**  
**Mussoorie Dehradun Development Authority**  
**Dehradun - Uttarakhand**

  
13/08/2019





**Mussoorie Dehradun Development Authority**  
**Transport Nagar, Saharanpur Road, Dehradun**

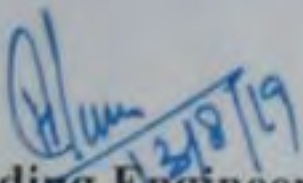
Dated: 13/08/2019

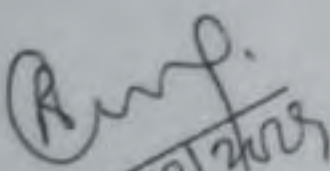
**SUMMER TRAINING CERTIFICATE**

This is to certify that Mr. Mohsin Alam Siddiqui a student of B.Tech in Civil Engineering, UPES, Dehradun has successfully completed his 45 Days Training, as trainee at the Project Management Unit (PMU), MDDA.

He assisted in Construction work, visit to Aalyam Housing Project at Aamwala Tarla, Dehradun, Project Management Unit Cell – Mussoorie Dehradun Development Authority.

I hereby certify his work satisfactory to the best of my knowledge.

  
Superintending Engineer  
Mussoorie Dehradun Development Authority  
Dehradun - Uttarakhand

  
13/08/2019





**PRAKASH ASPHALTINGS & TOLL HIGHWAYS (INDIA) LTD**

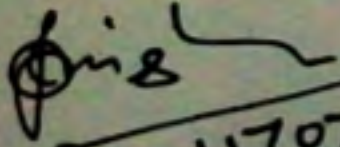
## **Certificate of Internship**

It is to certify that *Mr. Sonal Behera* student of *University of Petroleum & Energy Studies, Dehradun* has attended the internship program from *27<sup>th</sup> May 2019 to 10<sup>th</sup> July 2019* at Rau-Mhow- Mandleshwar Project.

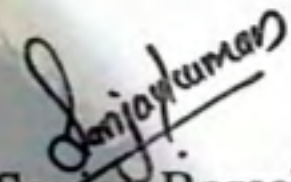
He attended Training on the "Construction of the Strengthening, Widening, Maintaining and Operating of Rau-Mhow-Mandleshwar Project" Road in the State of M.P on the BOT Basis. During the training, the discipline, attitude & knowledge of the candidate were satisfactory.

Date: - 15<sup>th</sup> July 2019

Place: - Mhow

  
(JP Mishra) 15/07/19  
Sr General Manager



  
(Sanjay Borse)  
Training Coordinator





## PRAKASH ASPHALTINGS & TOLL HIGHWAYS (INDIA) LTD

### Certificate of Internship

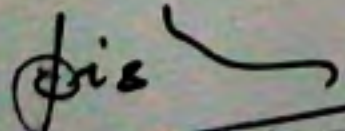
It is to certify that *Mr. Vivek Bilouha* student of *University of Petroleum & Energy Studies, Dehradun* has attended the internship program from *27<sup>th</sup> May 2019 to 10<sup>th</sup> July 2019* at Rau-Mhow- Mandleshwar Project.

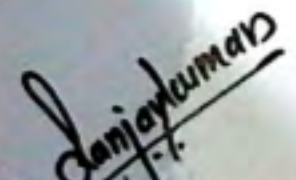
He attended Training on the “Construction of the Strengthening, Widening, Maintaining and Operating of Rau-Mhow-Mandleshwar Project” Road in the State of M.P on the BOT Basis. During the training, the discipline, attitude & knowledge of the candidate were satisfactory.

Date: - 15<sup>th</sup> July 2019

Place: - Mhow



  
15/07/19  
(JP Mishra)  
Sr General Manager

  
(Sanjay Borse)  
Training Coordinator





TSK/CD/ST/ 036 /2019

12<sup>th</sup> July'2019

TO WHOM IT MAY CONCERN

This is to certify that **Mr. Abhisek Sahoo**, a student of 7<sup>th</sup> semester of B. Tech. in Mechanical Engineering from University of Petroleum & Enengy Studies , Dehradun undertook a project titled “ **RELIABILITY IMPROVEMENT OF GREASE SYSTEM AT HOT STRIP MILL** ” at TSK from 3<sup>rd</sup> Jun'19 to 11<sup>th</sup> July'19 .

**Mr. Abhisek Sahoo**, has successfully completed the project under the guidance of **Mr. Alok Mishra** , Manager , Mechanical Maintenance , HSM , TSK . He is a sincere and hardworking student with pleasant manners.

We wish all success in his future endeavors.

*Santay Chaudhary*

Head-Training & Development,  
Tata Steel, Kalinganagar

**TATA STEEL KALINGANAGAR**

Jajpur 755 026 India

Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001

Tel 91 22 66658282 Fax 91 22 66657724

Corporate Identity Number L27100MH1907PLC000260 Website [www.tatasteel.com](http://www.tatasteel.com)





**LARSEN & TOUBRO**

**Larsen & Toubro Limited**  
**Construction**  
**Metallurgical & Material Handling**  
Godrej Waterside, 11<sup>th</sup> Floor,  
Tower - 2, Block DP - 5, Sector - V  
Salt Lake City, Kolkata - 700 091, INDIA  
Tel : +91-33-4414 1000  
Fax : +91-33-4414 1155  
www.Lntecc.com

12<sup>th</sup> July, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr. Abhishek Nigam** (SAP ID: 500053772), S/O Mr. Sanjay Nigam, pursuing B. Tech, Dept. of Mechanical Engineering, University of Petroleum & Energy Studies, Dehradun has done project on "**Practical Application of Solid-Shell Element in Finite Element Analysis**" with Technology Cell & EDRC EDG Department, from L&T - MMH, during 27<sup>th</sup> June 2019 to 10<sup>th</sup> July, 2019.

During his internship we found him to be hard working and sincere.

For LARSEN & TOUBRO LIMITED

(Bandana Khanna)

DGM – Human Resources

**METALLURGICAL & MATERIAL HANDLING**

Headquarters: P.B. No. 979, Mount Poonamallee Road, Manapakkam, Chennai - 600 089. INDIA  
Registered Office: L&T House, N. M. Marg, Ballard Estate, Mumbai - 400 001. INDIA  
Licence No.: CIN - L99999MH1946PLC004768

L&T Construction - Metallurgical & Material Handling is a brand of Larsen & Toubro Limited





July 18, 2019

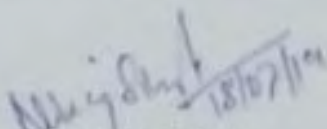
**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Abhishek Pandey student of University of Petroleum and Energy Studies, Dehradun has undergone his Industrial Training in our organization from 24/06/2019 to 17/07/2019.

He has successfully completed his Training in Technical Cell.

We wish him all the best for future endeavour.

Thanks & Regards.

  
Niraj Singh  
Dept. Head-HRD



Grasim Industries Limited  
Unit - Indian Rayon

Address: 262266, Chas. Gd. Company, Export India  
T : +91 2676 249001/245711

E : indian.rayon@adityabirla.com | W : www.grasim.com | CN : 11710MP/IN/PT/200419  
Regd. Office: Boregami, Raigarh - 486 221 (M.P.)





# दिल्ली मेट्रो रेल कॉर्पोरेशन लि० DELHI METRO RAIL CORPORATION LTD.

( भारत सरकार एवं दिल्ली सरकार का संयुक्त उपक्रम )

( A JOINT VENTURE OF GOVERNMENT OF INDIA AND GOVT. OF DELHI )

DMRC/HR/O&M/Trg/2019

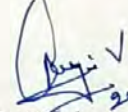
Dated: 29.07.2019

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Abhishek Yadav**, Student of B. Tech(Mechanical), University of Petroleum & Energy Studies, Dehradun, has completed his Industrial training/project work in RS Department of DMRC from 27.05.2019 to 22.07.2019.

His approach towards the training programme was enthusiastic. During this period, we found his sincere, pro-active and hard working.

We wish best wishes and success in his career.

  
(Pooja Vishwakarma)  
Asst. Manager/HR/O&M



16 July 2019

**TO WHOM IT MAY CONCERN**

It is certified that Mr. Aditya Barakoti student of university of petroleum & energy studies (UPES) dehradun, has undergone six week industrial training from 3<sup>rd</sup> June 2019 to 15<sup>th</sup> July 2019 in our organization. He worked on project "Reducing In house Piston Rate Rejection" under the supervision of Quality Manager.

He has successfully completed his project as per expectation of management. During his tenure with us we found him sincere and hardworking.

We wish him great success in the future.

For- Omax Autos Ltd.  
  
Authorized Signatory





ऑयल एण्ड नेचुरल गैस कारपोरेशन लिमिटेड  
Oil and Natural Gas Corporation Limited  
ओएनजीसी अकादमी, देहरादून  
ONGC Academy, Dehra Dun  
ISO 9001 : 2015 Certified

# Training Completion Certificate

*This is to certify that Mr./Ms. Aditya Bharadwaj a student of "University of Petroleum and Energy Studies Dehradun" has undergone Summer/Industrial Training at ONGC, Dehradun from 24.05.2019 to 24.06.2019. He/She has successfully completed his/her project work on "Detailed study of Wireline Technologies". During the training, he/she took keen interest in completing the assigned work.*

*We wish him/her all the success in his/her academic endeavors and in life.*

*Date: 02.07.2019*

In Charge

Students Academic Intensive Learning

Winner of Golden Peacock National Training Award 2005, 2006 & 2014 Winner of ISTD Award 2008 & 2013



# Bajaj Motors Limited



Regd. Office :

39-40 KM Stone, Delhi-Jaipur Highway, Narsinghpur, Gurugram-122 004 (Haryana) INDIA

Phone : 0124-2371453, Fax : 0124-2372553

E-Mail : [bml@bajajmotors.com](mailto:bml@bajajmotors.com)

Website : [www.bajajmotors.com](http://www.bajajmotors.com) : CIN : U34103HR1986PLC024875

BML/HR/TRG/2019

Date.27.08.19

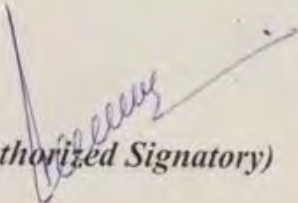
## TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Mr. Aditya Manchanda** has successfully completed his summer training w.e.f 01.06.19 to 20.07.19.

He has taken keen interest in the training. His overall conduct has been found good & satisfactory. He has showed punctuality and disciplined behavior.

We wish him success and progress in life.

*For Bajaj Motors Ltd.*

  
(Authorized Signatory)





REF: HEIL/HR/2019

Dated:31/07/ 2019

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that **Mr. Aditya Sharma S/O Mr. Rajesh Sharma**, the student of **B.Tech** from **UPES , Dehradun** has done his **2-month Summer Training** with us from **1<sup>st</sup> June 2019 to 01<sup>st</sup> August 2019**.

During this training period, we found him very Diligent, Sincere & Hard working.

We wish him all the best for his future endeavors.

For HEMA ENGG. INDS. LTD.

**Saransh Yadav**  
**(HR Department)**

**WORKS : 1/3, K.M. STONE, KHANDSA ROAD, GURUGRAM - 122001 (HARYANA) INDIA**  
Tel. : +91-124-2370740 - 44 Fax : 2370747

**CORPORATE OFFICE : 6th Floor, The Palm Square, Emaar MGF, Golf Course Extn Road, Sector-66, Gurugram-122001**  
Tel. : +91-124-4554930-35 Fax : 4554936 E-mail : [info@hemaengineering.com](mailto:info@hemaengineering.com), Web : <http://www.hemaengineering.com>

**REGD. OFFICE : 'Sachidanand Farm House', Kishangarh Village, In front of Swimming Pool, (Near DDA Sports Complex),**  
**Lane Green Avenue, Vasant Kunj, New Delhi - 110070, TEL. : +91-11-26802764, 26801628, 26805205**  
**CIN : U74210DL1987PLC029299**





Mondelez India Foods Private Limited Unit-I  
(Formerly Cadbury India Limited Unit-I)  
Registered office:  
Unit 2001, 20th Floor, Tower 3  
(wing - C), Indiabulls Finance Centre  
Parel, Mumbai-400 013, India  
[www.mondelezindiafoods.com](http://www.mondelezindiafoods.com)  
CIN : U15430MH1948PLC006457

Date: 10<sup>th</sup> August 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Akash Chauhan** has been an intern with Mondelez India Foods Private Ltd, for the period of 6 weeks from 27<sup>th</sup> May 2019 to 13<sup>th</sup> July 19. During the project we found Akash to be diligent & hard working. We wish him all the best for his future endeavors.

**Confidentiality clause:** During the project Akash has been privy to confidential information of Mondelez India Foods Private Limited. We strongly advise him not to use, disclose, disseminate or present such information in any form and in any forum. Use or disclosure of such confidential information shall render such a person to legal action by Mondelez India Foods Private Limited.

Before submitting the copy of the project in college, kindly get the permission on the data submission from the respective Guide/Mentor.

For Mondelez India Foods Private Ltd.

Himanshu Chitkara  
ER Manager – Baddi



Baddi Factory :  
Hadbast No. 199, Village Sandholi,  
PO & Teh Baddi, Distt. Solan  
(H.P.) - 173 205 India

T +91 (0) 1795 306623



**TO WHOM SO EVER IT MAY CONCERN**

26<sup>th</sup> July 2019

This is to certify that **Mr. Aman Vardhan Verma** Student of **University of Petroleum and Energy Studies, Dehradun** has completed his training at **VE Commercial Vehicles, Pithampur**, from 05<sup>th</sup> June, 2019 to 26<sup>th</sup> July 2019.

During this period, he did the project on – **"Study of Non-Auto Engine Assembly."**

He has worked under the guidance of **Mr. Praveen Tripathi– Senior Manager**. He has completed the project and his performance was **Very Good**.

We wish him all the best for his future.

**For VE Commercial Vehicles Ltd.**  
**(A Volvo Group and Eicher Motors joint venture)**

*Reena*

**Reena Mishra**  
**(Deputy Manager- Human Resources)**

www.vecv.in

**VE Commercial Vehicles Limited**  
102, Industrial Area No. 1,  
Pithampur - 454 775,  
Distt. Dhar (M.P.), India

**Telephone**  
+91 7292 402633

**Fax**  
+91 7292 402611

**Registered Office**  
CIN: U74900DL2008PLC175032  
3rd Floor Select Citywalk  
A-3 District Centre, Saket  
New Delhi - 110 017, India

**VOLVO**

**EICHER**



# Prashikshan - 2019

SHAVAK NANAVATI TECHNICAL INSTITUTE

An ISO 9001:2008 Organization

## CERTIFICATE

This is to certify that Amit Kumar (Reg. No. VT20190960),  
student of UNIVERSITY OF PETROLIUM AND ENERGY STUDIES,  
has undergone Vacation Training Programme at **TATA STEEL LTD.**, Jamshedpur from  
04-June ,2019 to 30-July ,2019 . The details of the programme are as under:

Department Covered	STEEL MAKING MECHANICAL MAINTENANCE
Project Title	STUDY OF BILLET CASTER AND OPTIMIZATION OF MAINTENANCE TIME OF CARDAN SHAFT

He/She has successfully completed the Programme.



Place : Jamshedpur  
Date : 30-07-2019  
Ref No. : VT20190960

Coordinator  
Vacation Training  
**TATA STEEL LTD.**





# Certificate

This is to certify that

**AMIT KUMAR .**

has successfully completed e-learning program

on **Industrial Hydraulics and Pneumatics**

A handwritten signature in black ink, appearing to read "Prakash Singh".

**Prakash Singh**  
Chief, Capability Development





# *Certificate*

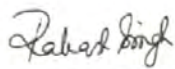
**is presented to**

**AMIT KUMAR**

**for successfully completing the Elearning program on**

**Heat Treatment of Steel**

**Date : 27-06-2019**

  
**Prakash Singh**  
Chief, Capability Development



**PADMINI VNA MECHATRONICS PVT. LTD.**

Plot No. 100-101, Sector 35, HSIIDC, Udyog Vihar,  
Phase-VII, Gurugram - 122 001 Haryana (India)

E. info@padminiengg.com

www.padminivna.com



Ref. No.: PVNA/HR/2019/Internship/049

Date: July 17, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr. Amit Srivastava** student of University of Petroleum and Energy Studies, Dehradun, Mechanical Engineering Department has successfully completed his internship on projects "**Red Bin Analysis**" dated from **June 03<sup>rd</sup>, 2019** to **July 17<sup>th</sup>, 2019** under the guidance of Mr. Ravi Kant Singh, Senior Manager (Quality Assurance Department).

His association with us was very fruitful and we wish him success in his future endeavors.

Authorized Signatory





# Prashikshan - 2019



SHAVAK NANAVATI TECHNICAL INSTITUTE  
An ISO 9001:2008 Organization

## CERTIFICATE

This is to certify that Ankit Kumar (Reg. No. VT20191656),  
student of UNIVERSITY OF PETROLEUM AND ENERGY STUDIES,  
has undergone Vacation Training Programme at **TATA STEEL LTD.**, Jamshedpur from  
04-June ,2019 to 09-July ,2019. The details of the programme are as under:

Department Covered	CORPORATE ENGG.-UTILITIES, PIPING & LAYOUT
Project Title	MODIFICATION OF HSM DCW CIRCUIT

He/She has successfully completed the Programme.

Place : Jamshedpur  
Date : 02-09-2019  
Ref No. : VT20191656

Coordinator  
Vacation Training  
TATA STEEL LTD.

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SHAVAK NANAVATI TECHNICAL INSTITUTE, TATA STEEL Ltd, N-ROAD, BISTUPUR, JAMSHEDPUR -831001, INDIA  
Telephone : 91-657-2320243, Fax : 91-657-2320243, E-mail-snti.office@tatasteel.com



Ref: HR /Cert. / 04 /Jul 2019

Date: 12<sup>th</sup> Jul 2019

**TO WHOMSOEVER IT MAY CONCERN**

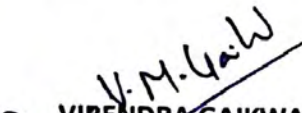
This is to certify that **Mr. Arjit Mishra**, student of University of Petroleum & Energy Studies, Dehradun, Uttarakhand has successfully completed his Internship training at BENTELER Automotive India Pvt. Ltd, Pune during the period of 3<sup>rd</sup> Jun 2019 to 12<sup>th</sup> July 2019.

He has done project on the subject "Optimization of Forklift & casual movements" at Benteler.

During the period of Internship training we found him sincere and hardworking. He has displayed good initiative and readiness to learn. He has completed his assignment in time and a very competent manner.

We would like to thank him and take the opportunity to wish him every success for his future endeavor.

For BENTELER Automotive India Private Limited

  
**VIRENDRA GAIKWAD**  
**HUMAN RESOURCES**



Ref No: JCB/SD1/19-20

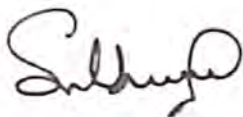
15<sup>th</sup> July 2019

To Whom It May Concern:

This is to certify that **Mr. Arpit Shankar** student of College of Engineering Studies, Bidholi has completed his internship from 27<sup>th</sup> May 2019 to 19<sup>th</sup> July 2019.

During the project his conduct was found to be good. We wish him all the best in his future endeavor.

For JCB India Ltd.



**Subhasish Dasgupta**  
AVP-Human Resource



HR / 7/ TR44

July 09, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr.Bharath Balamurali**, a student of University of Petroleum & Energy Studies - Dehradun, has successfully completed his project training at our plant during the period from **03rd June, 2019 to 09th July, 2019**.

He has been a part of the project titled **"Optimization of Parking Brake Test Parameter in Roll & Brake"** Department – **Quality Control 1** at **Hyundai Motor India Limited**.

During the training period, his level of commitment, involvement and attitude were found to be good.

We wish **Mr.BHARATH BALAMURALI**, all the best in his future endeavors.

For **HYUNDAI MOTOR INDIA LIMITED**

  
**Mani Nachiappan N**  
**Learning & Development**





Ref No: 7070/KBUNL/HR/2019

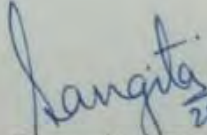
Date: 28.06.2019

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that Mr. Chandan Kumar, Roll No.: R113216020, Department of Mechanical Engineering from University of Petroleum and Energy Studies, Dehradun has successfully completed his training from 1<sup>st</sup> June 2019 to 28<sup>th</sup> June 2019 in Mechanical Maintenance Department of Kanti Bijlee Utpadan Nigam Limited, Kanti.

During this period, he has done a project on "Study of Turbines" at Kanti Bijlee Utpadan Nigam Limited, Kanti, Distt. Muzaffarpur (Bihar).

We wish him all the best for his future professional endeavors.

  
(Vera Sangita Baxla)  
Sr. Manager (HR)



प्रमाण पत्र सं०: VT19/SM/E0228

दिनांक: 30.07.2019

**वोकेशनल ट्रेनिंग प्रमाण पत्र**

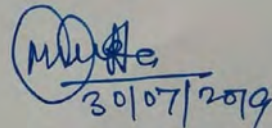
**Vocational Training Certificate**

प्रमाणित किया जाता है कि चौधरी मुजतबा नज़ीर, सुपुत्र श्री शफीउत तनवीर हैदर, जो UPES देहरादून में यान्त्रिकी अभियंत्रण शाखा का तृतीय वर्ष का छात्र हैं, एनटीपीसी लिमिटेड कहलगाँव में दिनांक 01.07.2019 से 30.07.2019 तक वोकेशनल प्रशिक्षण प्राप्त किए हैं।

हम इनके उज्ज्वल भविष्य की कामना करते हैं।

This is to certify that Mr. Chaudhry Mujtaba Nazeer, S/o. Shafiut Tanweer Haider, a student of 3rd year, Mechanical Engineering from UPES Dehradun, has undergone Vocational Training at NTPC Limited Kahalgaon from 01.07.2019 to 30.07.2019.

We wish all success in his future endeavours.

  
30/07/2019

(मनोज कुमार गुप्ता M.K. Gupta)

वरिष्ठ प्रबन्धक Sr. Manager (HR-EDC)



Ref.: HM/ HR / 2019

July 16, 2019

**TO WHOM IT MAY CONCERN**

I hereby certify that Mr. Chirag Tyagi, Student of University of Petroleum & Energy Studies, Dehradun, Uttarakhand, has undergone internship from 4<sup>th</sup> June 2019 to 8<sup>th</sup> July 2019 in our organization.

He did internship project on "**Development of CVT Cycle Hub**" at Gautam Budh Nagar Plant under the supervision of Mr. Vigyat Prajapati. We found him sincere and hard working.

Wishing him a great career

Thanking You,

For **Hero Motors**  
(A Division of Hero Cycles Ltd.),

  
**Ravi Kumar**

**Dy. Manager – HR**

**HERO MOTORS**  
(A Division of Hero Cycles Ltd.)

Regd. Office : Hero Nagar, G.T. Road, Ludhiana - 141003, Punjab  
Corporate Office: 2A - 1001, 10th Floor, Two Horizon Centre, Sector - 43, DLF Phase -V,  
Gurugram (Haryana) 122002, India. Tel: +91 124 3659700  
Works : 10th KM Stone, G.T. Road, P.O. Dujana - 203207, Dadri, Distt. G.B. Nagar, U.P., India.  
Tel : +91 120 267 4207 / 8 / 9 / 551 / 552 Fax : +91 120 267 4557  
Manesar Plant : Plot - 192 D, Sector - 4, Phase 2, IMT Manesar, Gurgaon, Haryana 122050, India.  
Tel : +91 124 475 4400 Fax : +91 124 475 4488  
Manesar Plant : Plot - 62, Sector - 3, IMT Manesar, Gurgaon, Haryana 122050, India.  
CIN No. : U35911PB1966PLC002667



Ref: HR /Cert. / 04 /Jul 2019

Date: 12<sup>th</sup> Jul 2019

**TO WHOMSOEVER IT MAY CONCERN**

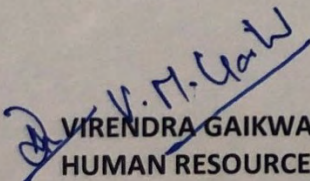
This is to certify that **Mr. Gaurav Lalwani**, student of University of Petroleum & Energy Studies, Dehradun, Uttarakhand has successfully completed his Internship training at BENTELER Automotive India Pvt. Ltd, Pune during the period of 3<sup>rd</sup> Jun 2019 to 12<sup>th</sup> July 2019.

He has done project on the subject "Optimization of Forklift & casual movements" at Benteler.

During the period of Internship training we found him sincere and hardworking. He has displayed good initiative and readiness to learn. He has completed his assignment in time and a very competent manner.

We would like to thank him and take the opportunity to wish him every success for his future endeavor.

For BENTELER Automotive India Private Limited

  
VIRENDRA GAIKWAD  
HUMAN RESOURCES



**TATA STEEL**



# *Industrial Training Certificate*

**This is to certify that**

***Himanshu Raj***

*from*

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**has successfully completed the industrial Training on**

***Mechanical Power Transmission system***

**conducted by Capability Development, Tata Steel Limited in 2019**



*Prakash Singh*

**Prakash Singh**

Chief Capability Development.





# Prashikshan - 2019



SHAVAK NANAVATI TECHNICAL INSTITUTE  
An ISO 9001:2008 Organization

## CERTIFICATE

This is to certify that Himanshu Raj (Reg. No. VT20191322 ),  
student of UNIVERSITY OF PETROLEUM AND ENERGY STUDIES,  
has undergone Vacation Training Programme at **TATA STEEL LTD.**, Jamshedpur from  
04-June ,2019 to 23-July ,2019. The details of the programme are as under:

Department Covered	DESIGN & ENGINEERING-PROCESS
Project Title	STUDY ON DIRECT FORMING TECHNOLOGY IN STRUCTURAL TUBE MANUFACTURING.

He/She has successfully completed the Programme.

Place : Jamshedpur  
Date : 09-08-2019  
Ref No. : VT20191322

Coordinator  
Vacation Training  
TATA STEEL LTD.

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SHAVAK NANAVATI TECHNICAL INSTITUTE, TATA STEEL Ltd, N-ROAD, BISTUPUR, JAMSHEDPUR -831001, INDIA  
Telephone : 91-657-2320243, Fax : 91-657-2320243, E-mail-snti.office@tatasteel.com



16 July 2019

**TO WHOM IT MAY CONCERN**

It is certified that Mr. **Jayati Upadhayay** student of university of petroleum & energy studies(UPES) dehradun, has undergone **six week** industrial training from 3<sup>rd</sup> June 2019 to 15<sup>th</sup> July 2019 in our organization. He worked on project "**Reducing In house Piston Rate Rejection**" under the supervision of **Quality Manager**.

He has successfully completed his project as per expectation of management. During his tenure with us we found him sincere and hardworking.

**We wish him great success in the future.**

For- Omax Autos Ltd.

  
Authorized Signatory



Date: 27<sup>th</sup> July, 2019

**TO WHOM SO EVER IT MAY CONCERN**

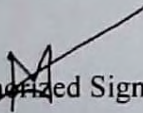
This is to certify that **Mr. Jayesh Vyas** student of **B.Tech (Mechanical Engineering)** from **University of Petroleum and Energy Studies, Dehradun** attended summer internship training with us from **27<sup>th</sup> May, 2019 to 26<sup>th</sup> July, 2019.**

During the internship, his conduct and performance were found to be **Good.**

With Regards,

Yours Faithfully

For National Engineering Industries Ltd.

  
Authorized Sign

HR





**Vibrant Honda**  
**Bhalla Automobiles Private Ltd.**  
6th, Milestone, Vill. Bhikampur  
G. T. Road,  
Aligarh-202 130 (U.P.)  
E-mail : sales@vibranthonda.co



**B. R. Singh**  
Service Manager

**Vibrant Honda**  
**Bhalla Automobiles Private Ltd.**  
6th Milestone, Vill-Bhikampur  
Delhi G.T. Road  
ALIGARH-202130 (U.P.)  
Mob : 7088110053  
e-mail : servicemanager@vibranthonda.co  
Website : www.vibranthonda.co

Date:-20-07-2019

## TO WHOM IT MAY CONCERN

This is certify that Mr. Krishna Kumar Singh S/o Mr. Bachchan Babu, a student of B.Tech ( Mechanical Engineering ) UPES Dehradun has successfully completed ( From 05<sup>th</sup> June, 2019 to 15<sup>th</sup> July, 2019 ) long Internship programme as a service technician at this Bhalla Automobiles Pvt. Ltd. ( Vibrant Honda Car Dealership ). During the period of his Internship programme with us he was found punctual, hardworking and inquisitive.

We wish him every success in life.

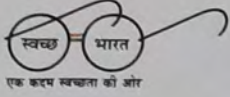
Bhalla Automobiles Pvt. Ltd.

Authorized Signature

B. R. Singh

Registered Name :- BHALLA AUTOMOBILES PRIVATE LTD.  
Registered Address is:- Oppsit OLF School, Ramghat Road, Aligarh. Ph. : Sales 7088110054, Service : 7088110056





रिफाइनरीज प्रभाग  
Refineries Division

इंडियन ऑयल कॉर्पोरेशन लिमिटेड  
बरौनी रिफाइनरी, डाकघर : बरौनी ऑयल रिफाइनरी,  
जिला : बेगूसराय, बिहार - 851 114

Indian Oil Corporation Limited  
Barauni Refinery, P.O. : Barauni Oil Refinery,  
Distt. : Begusarai, Bihar - 851 114  
वेबसाइट : www.iocl.com  
ई-मेल : baraunirefinery@indianoil.in  
दूरभाष : 06243-240159 / 240110  
फैक्स : 06243-240150 / 240278



ISO : 9001, 14001 & OHSAS : 18001 Certified Refinery

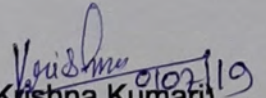
Ref: L&D/VT-CERT/19

Date: 01.07.2019

### To whom it may concern

It is to certify that Mr. KUMAR UTKARSH, Roll no. R113216035 a Student of Mechanical Engineering discipline from UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, Dehradun has been undergoing Industrial Training (VT) in IOCL Barauni Refinery from 01.06.2019 to 01.07.2019 in the functional area of Mechanical Department. A brief account of his learning is compiled and submitted as project work.

As a trainee he is found to be punctual; demonstrating keen interest in learning and acquiring skills. We wish him all the success in his career.



  
(Krishna Kumari)

Asst. Manager,

Learning & Development

KRISHNA KUMARI  
सहायक प्रबंधक (प्रशिक्षण एवं विकास)  
ASST. MANAGER (T & D)

इंडियन ऑयल कॉर्पोरेशन लिमिटेड  
INDIAN OIL CORPORATION LTD.  
बरौनी रिफाइनरी, बेगूसराय - 851 114 (बिहार)  
Barauni Refinery, Begusarai-851 114 (Bihar)

 Barauni Refinery - In harmony with nature 

पंजीकृत कार्यालय : जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व), मुम्बई-400 051, महाराष्ट्र (भारत)  
Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai-400 051, Maharashtra (India)

CIN - L 23201 MH 1959 GOI 011388





भारत हेवी इलेक्ट्रिकल्स लिमिटेड रानीपुर, हरिद्वार  
BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARIDWAR

TRAINING CERTIFICATE

Registration No. : HWR/HRDC/201900261

Certificate No. : HWR/HRDC/201900158

Mr KURNAL SINGH Son/Daughter/Wife of Shri YASHPAL SINGH, Student of UNIVERSITY OF PETROLEUM & ENERGY STUDY, DEHRADUN (UTTARAKHAND), MECHANICAL ENGINEERING Branch has undergone Vacational Training in BHARAT HEAVY ELECTRICALS LIMITED, HARIDWAR from 04.06.2019 to 03.07.2019.

The area of training was GENERAL AWARENESS OF STEAM TURBINE MANUFACTURING (TUM, BL-3)

The performance of the trainee during the above training period was VERY GOOD.

(Checked by)

(Section Incharge)

मन्तु शुक्ला

अभियंता

मानव संसाधन विकास केंद्र  
डी.एच.ई.एल. मनी  
हरिद्वार





# भारत हेवी इलेक्ट्रिकल्स लिमिटेड रानीपुर, हरिद्वार

BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARIDWAR

## TRAINING CERTIFICATE

Registration No. : HWR/HRDC/2019000259

Certificate No. : HWR/HRDC/2019000157

Mir LAKHVEER SINGH Son/Daughter/Wife of Shri DHIAN SINGH, Student of UNIVERSITY OF PETROLEUM & ENERGY STUDY, DEHRADUN (UTTARAKHAND), MECHANICAL ENGINEERING Branch has undergone Vocational Training in **BHARAT HEAVY ELECTRICALS LIMITED, HARIDWAR** from **04.06.2019** to **03.07.2019**.

The area of training was **GENERAL AWARENESS OF STEAM TURBINE MANUFACTURING (TUM, BL-3)**

The performance of the trainee during the above training period was **VERY GOOD**.

Date : 10-07-2019

(Checked by)

(Section Incharge)

मन्जु शुक्ला  
अभियंता

मानव संसाधन विकास केंद्र  
पी.एच.ई.एल. रानीपुर, हरिद्वार





# Prashikshan - 2019



SHAVAK NANAVATI TECHNICAL INSTITUTE  
An ISO 9001:2008 Organization

## CERTIFICATE

This is to certify that Manoj Kumar (Reg. No. VT20191605),  
student of UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN,  
has undergone Vacation Training Programme at **TATA STEEL LTD.**, Jamshedpur from  
04-June ,2019 to 09-July ,2019. The details of the programme are as under:

Department Covered	IRON MAKING MECHANICAL MAINTENANCE
Project Title	STUDY OF IMPROVING THE EFFCICNCY OF SINTER COOLER OF SINTER PLANTS NO .3

He/She has successfully completed the Programme.

Place : Jamshedpur  
Date : 02-09-2019  
Ref No. : VT20191605

Coordinator  
Vacation Training  
TATA STEEL LTD.

---

SHAVAK NANAVATI TECHNICAL INSTITUTE, TATA STEEL Ltd, N-ROAD, BISTUPUR, JAMSHEDPUR -831001, INDIA  
Telephone : 91-657-2320243, Fax : 91-657-2320243, E-mail-snti.office@tatasteel.com





# Prashikshan - 2019



SHAVAK NANAVATI TECHNICAL INSTITUTE  
An ISO 9001:2008 Organization

## CERTIFICATE

This is to certify that Manoj Kumar (Reg. No. VT20191605),  
student of UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN,  
has undergone Vacation Training Programme at **TATA STEEL LTD.**, Jamshedpur from  
04-June ,2019 to 09-July ,2019. The details of the programme are as under:

Department Covered	IRON MAKING MECHANICAL MAINTENANCE
Project Title	STUDY OF IMPROVING THE EFFCICNCY OF SINTER COOLER OF SINTER PLANTS NO .3

He/She has successfully completed the Programme.

Place : Jamshedpur  
Date : 02-09-2019  
Ref No. : VT20191605

Coordinator  
Vacation Training  
TATA STEEL LTD.

---

SHAVAK NANAVATI TECHNICAL INSTITUTE, TATA STEEL Ltd, N-ROAD, BISTUPUR, JAMSHEDPUR -831001, INDIA  
Telephone : 91-657-2320243, Fax : 91-657-2320243, E-mail-snti.office@tatasteel.com





**JSW Energy (Barmer) Limited**  
(Formerly : Raj WestPower Limited)  
Village & Post : Bhadresh Post Box No. 30,  
Dist : Barmer - 344001 (Rajasthan)  
CIN. : U31102MH1996PLC185098  
Phone : +091-2982 - 229301  
Fax : +091-2982 - 229222  
Website : www.jsw.in

01/08/2019

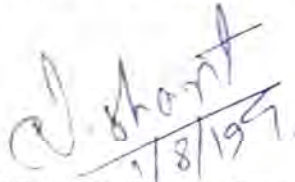
**To Whom So Ever It May Concern**

This is to certify that **Mr. Mohit Khatri**, student of **B.Tech. (Mechanical Engineering - 6<sup>th</sup> SEM)**, from University Of Petroleum & Energy studies, Dehradun has successfully completed **60 Days (From 01<sup>th</sup> June, 2019 to 30<sup>th</sup> July, 2019)** Internship programme in our organization.

During the period of his internship programme with us he was found punctual, hardworking and inquisitive.

We wish him all success for his future endeavor.

for, JSW Energy(Barmer) Limited.

  
1/8/19

(Nishant Chowdhary)  
HR – L&D (Learning & Development)  
JSW Energy (Barmer) Limited.  
Barmer-344001



Part of O.P. Jindal Group

Regd. Office : JSW Centre,  
Bandra Kurla Complex,  
Bandra (East), Mumbai - 400 051  
Phone : +91 22 4286 1000  
Fax : +91 22 4286 3000





# CERTIFICATE



Skill India  
श्रद्धावान् भारत - कुरुते भारत

Workshop Training Centre

कारखाना प्रशिक्षण केन्द्र

Mechanical Workshop, N.E. Railway, Gorakhpur

यांत्रिक कारखाना, पूवोत्तर रेलवे, गोरखपुर

*This is to certify that Mr/Miss.....**MUHAMMAD SHAHRUKH KHAN**..*

*Son/Daughter of Sri/Smt..... **SARFUDDIN KHAN** ..*

*Student of B.Tech/Diploma..**MECHANICAL College... U.P.E.S, DEHRADUN (UK)** has undergone  
tech. training from **04/06/2019 to 03/07/2019** in **Mechanical Workshop, N.E. Railway,  
Gorakhpur.***

Certificate No.: **BTM/884/337/2019**

Date : **09/09/2019..**

PRINCIPAL

Workshop Training Centre

Mechanical Workshop

N.E. Railway Gorakhpur





## Gujarat Guardian Limited

**Regd. Office & Plant :**

State Highway - 13, Village Kondh, Valia Road, Ankleshwar,  
Dist. Bharuch-393 001, Gujarat, India

Tel : +91 2643 275106 to 275115

Fax : +91 2643 275105, 275116

CIN : U17110GJ1990PLC013397

Date: - 15<sup>th</sup> July 2019

TO WHOM IT MAY CONCERN

This is to certify that **Mr. Naman Dhamija**, student of University of Petroleum and Energy Studies has completed **Summer Training** as a part of 3<sup>rd</sup> Year B.tech Mechanical Engineering Programme from **05.06.2019 To 15.07.2019** During this period, he gained knowledge about the Reliability Centric Operations FMEA of Pneumatic Cylinders in Furnace from Mechanical Engineering Perspective.

We wish him all the very best for his future endeavours.

Thanking You

For Gujarat Guardian Limited

Yatin Chhaya

MANAGER – HR & IR



MSIL: PPDET: INT | 2019| 0646

Date: 01.08.2019

**TO WHOM SO EVER IT MAY CONCERN**


This is to certify that **Mr. Nikhil Yadav** student of University of Petroleum and Energy Studies, Dehradun has undergone project training with MARUTI SUZUKI INDIA LIMITED as per details given below:-

<b><u>PROJECT TITLE</u></b>	CYCLE TIME STUDY
<b><u>TRAINING PERIOD</u></b>	05.06.2019 to 30.07.2019
<b><u>DEPT/ DIVISION</u></b>	DMS-G

He has completed the above project to our satisfaction and our assessment of his overall project efforts & learning is **EXCELLENT**. During the training we found him hardworking, eager to learn and with good initiative. He was able to develop good inter-personal relations with people in the Department/Division.

We wish him very best in his future career.

With Best Wishes

  
**Soarabh Pathak**  
General Manager  
People Development | Training Academy - HR

**MARUTI SUZUKI INDIA LIMITED**  
CIN: L34103DL1981PLC011375

Registered & Head Office  
Maruti Suzuki India Limited,  
1 Nelson Mandela Road, Vasant Kunj,  
New Delhi 110070, India.  
Tel: 011-46781000, Fax: 011-46150275/46150276  
www.marutisuzuki.com

Gurgaon Plant:  
Maruti Suzuki India Limited,  
Old Palam Gurgaon Road,  
Gurgaon 122015, Haryana, India.  
Tel. 0124-2346721, Fax: 0124-2341304

Manesar Plant:  
Maruti Suzuki India Limited,  
Plot No.1, Phase 3A, IMT Manesar,  
Gurgaon 122051, Haryana, India.  
Tel: 0124-4884000, Fax: 0124-4884199

E-mail: investor@maruti.co.in, contact@maruti.co.in



July 05, 2019

## TO WHOMSOEVER IT MAY CONCERN

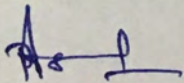
This is to certify that **Mr. Omkar Ashish Nayak** has undergone an internship in Mahindra Vehicle Manufacturers Ltd, Automotive Division, Chakan as an Intern from **5-Jun-19 to 5-Jul-19**.

**Mr. Omkar Ashish Nayak** has successfully completed the projects as line improvement, workforce reduction.

During the training period, his attendance & conduct was Good.

We wish him best wishes for his future studies & career.

For  
Mahindra Vehicle Manufacturers Limited



Piyush Agarwal  
Senior Manager-HR





# E-Durables Prefab Private Limited

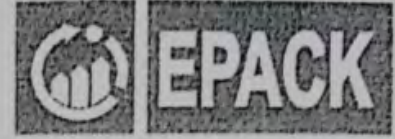
Registered Office:

61-B, Udyog Vihar,, Greater Noida, Gautam Budh Nagar-201306 (U.P.)

Phone-0120-2569078

E-mail: info@edurables.com

CIN No.:U74999UP2019PTC115950



DATE- 17.07.2019

## "TO WHOM SO EVER IT MAY CONCERN"

This is to certify that Mr. Pawan Singh S/O Sh. Govind Singh student of **B.Tech in Mechanical** from **University of Petroleum & Energy Studies**, Dehradun, Uttarakhand has successfully completed his training in **Quality Department** since **01<sup>th</sup> June 2019 to 17<sup>th</sup> July 2019** in our organization.

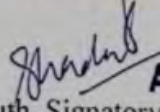
During this period he has good moral characteristic.

We wish him best of luck for his bright future.

For E-Durables Prefab Pvt Ltd

(Formerly Known E-Durables-II)

**For E-Durables Prefab Pvt. Ltd.**

  
**Auth. Signatory**  
Auth. Signatory



Date: 19<sup>th</sup> Aug, 2019

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that **Mr. Pradeep Dhundhwal (B.Tech Mechanical)** from **University of Petroleum and Energy Studies, Dehradun, Uttarakhand** has attended industrial training with us from **21<sup>st</sup> May, 2019 to 26<sup>th</sup> July, 2019** under the supervision and guidance of our **Machine Building department**.

During the internship, his conduct and performance were found to be **Good**.

With Regards,

Yours Faithfully

For National Engineering Industries Ltd.

  
Authorized Sign

HR

National Engg. Industries Ltd.  
Khatipura Road, JAIPUR-6



16 July 2019

**TO WHOM IT MAY CONCERN**

It is certified that Mr. **Pranay Barapatre** student of university of petroleum & energy studies (UPES) dehradun, has undergone **six week** industrial training from 3<sup>rd</sup> June 2019 to 15<sup>th</sup> July 2019 in our organization. He worked on project "**Reducing In house Piston Rate Rejection**" under the supervision of Quality Manager.

He has successfully completed his project as per expectation of management. During his tenure with us we found him sincere and hardworking.

We wish him great success in the future.

For: Omax Autos Ltd.



Authorized Signatory



Government of India  
Ministry of Railways

# MODERN COACH FACTORY, RAEBARELI

Reg. No. 616



## Certificate

This is to certify that Mr/Ms. RAHUL GUPTA student  
of B. TECH. (MECHANICAL) VI Semester/Year  
Has undergone summer internship at "Technical Training Centre, Modern Coach Factory, Rae Bareli (UP)"  
from 03.06.19 to 13.07.19 The subject of the internship undertaken by Mr/Ms. RAHUL GUPTA  
is STUDY OF ALL STAGES OF FURNISHING SHOP (COACH FURNISHING) and  
a copy of the report is annexed to this certificate

His/Her performance and conduct during the training was Good. We wish his/her success in life.

Date : 17.07.19

Place : MCF/RBL

आयुक्त प्रमुख/आई सी & टीसी

Dy CME AT & TTC

आधुनिक रेल कोच कारखाना, रायबरेली

Modern Coach Factory, Raebareli

Signature of the concerned officer

(Principal/TTC/MCF)



# Varroc Engineering Limited

VEL - PN

Plot No. 20, Sector 9, IIE, SIDCUL,  
Pantnagar, Udham Singh Nagar-263 153  
Uttarakhand, India

Tel : 05944 250122

email: varroc.info@varroc.com  
www.varrocgroupp.com  
CIN: L28920MH1988PLC047335



Date: 20.07.2019


## TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Mr. Rajat Rawat** student of B. Tech in Mechanical Engineering from University of Petroleum and Energy Studies, Dehradun has successfully completed his training on the topic – “ANALYSIS OF GEAR AND SHAFT MANUFACTURING” under guidance of **Mr. Vinod Sharma, Metallic-Division**.

During this period i.e. from **04<sup>th</sup> June'19** – **18<sup>th</sup> July'19**, we found him sincere & hardworking towards his work and capable of discharging his duties in similar capacity.

We wish him success in all his future endeavors.

For Varroc Engineering Ltd.

  
Authority Signatory



QHT/HR/2019/06

Date: 18/07/2019

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that Mr. Rishabh Kumar S/o Mr. Rajender Kumar has gone through the industrial training on title "Elimination of Waste" at our organization from 03 June 2019 to 17 July 2019.

During the training he was found sincere and hardworking.

We wish him success in his future endeavors.

For QH Talbros Pvt. Ltd.

  
Ankur Rana

Manager - HR



JSHL:HRD:R:TRG:2019  
1st August, 2019


**TO WHOM IT MAY CONCERN**

This is to certify that **Mr. Ritvvesh, SAP ID 500054241** a student of B.Tech Mechanical Engineering, UPES University of Petroleum and Energy Studies, Dehradun, has completed his Summer Internship in our organization from **1st June, 2019 to 1st August, 2019.**

He demonstrated keen interest in learning through observation and practice. During the period of training, we found his performance to be Good.

We wish him all the success in his future endeavors.

For Jindal Stainless (Hisar) Limited



**Uma Kaushik**  
Manager - HR





भारत हेवी इलेक्ट्रिकल्स लिमिटेड रानीपुर, हरिद्वार

BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARIDWAR

TRAINING CERTIFICATE

Registration No. : HWR/HRDC/201901425

Certificate No. : HWR/HRDC/201901043

Mr SACHIN GUPTA Son/Daughter/Wife of Shri RAJENDRA PRASAD GUPTA , Student of UNIVERSITY OF PETROLEUM & ENERGY STUDY, DEHRADUN (UTTARAKHAND) , MECHANICAL ENGINEERING Branch has undergone Vocational Training in BHARAT HEAVY ELECTRICALS LIMITED, HARIDWAR from 20.06.2019 to 03.08.2019.

The area of training was GENERAL AWARENESS OF STEAM TURBINE MANUFACTURING (TUM, BL-3)

The performance of the trainee during the above training period was VERY GOOD.

Date : 05-08-2019

  
(Checked by)

  
(Section Incharge)  
मन्जु शुक्ला  
अभियंता

मानव संसाधन विकास केन्द्र  
भी.एच.ई.एल., रानीपुर, हरिद्वार



## OMAX AUTOS LIMITED - LUCKNOW

Tata Motors Vendor Park, Chinhat Industrial Area, Deva Road,  
Lucknow - 226019 (U.P.) India Tel.: 0522 - 6591221, 2818005  
CIN - L30103HR1983PLC026142



Ref: OAL/LKNW-HR/2019/301

Date: - 13-07-2019

### To Whom So Ever It May Concern

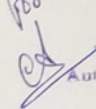
This is to certify that **Mr. Saranjit Yadav S/O Shri Ramjeet Yadav**, pursuing in 7<sup>th</sup> Semester of B Tech. in Mechanical Engineering from University of Petroleum and Energy Studies has done Internship in respective branch of Press Shop & Tool Maintenance from 01.06.2019 to 13.07.2019.

He has been hard working, honest and bears a good character.

We wish him a good luck for future endeavour.

On behalf of Omax Autos Ltd.

For Omax Autos Ltd.

  
Authorized Signatory

Authorized Signatory

Regd. Office : Plot No. B-26, Institutional Area,  
Sector 32, Gurgaon - 122001 Haryana (India)  
Ph. No. : 0124-4343000 Fax. No. : 0124-2580016  
Website : [www.omaxauto.com](http://www.omaxauto.com)  
E-mail : [investors@omaxauto.com](mailto:investors@omaxauto.com)



JSHL:HRD:SKS:TRG:2019

1st August, 2019

TO WHOM IT MAY CONCERN

This is to certify that **Mr. Shashank Kumar Singh, SAP ID 500053488** a student of B.Tech Mechanical Engineering, UPES University of Petroleum and Energy Studies, Dehradun, has completed his Summer Internship in our organization from **1st June, 2019 to 1st August, 2019.**

He demonstrated keen interest in learning through observation and practice. During the period of training, we found his performance to be Good.

We wish him all the success in his future endeavors.

For Jindal Stainless (Hisar) Limited

  
**Uma Kaushik**  
Manager - HR



## OMAX AUTOS LIMITED - LUCKNOW

Tata Motors Vendor Park, Chinhat Industrial Area, Deva Road,  
Lucknow - 226019 (U.P.) India Tel.: 0522 - 6591221, 2818005  
CIN - L30103HR1983PLC026142

Ref: OAL/LKNW-HR/2019/299

Date: - 13-07-2019

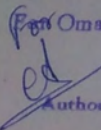
### To Whom So Ever It May Concern

This is to certify that **Mr. Shivam Goyal S/O Prakash Chandra Goyal**, pursuing in 7<sup>th</sup> Semester of B Tech. in Mechanical Engineering from University of Petroleum and Energy Studies has done Internship in respective branch of Press Shop & Tool Maintenance from 01.06.2019 to 13.07.2019.

He has been hard working, honest and bears a good character.

We wish him a good luck for future endeavour.

On behalf of Omax Autos Ltd.

 Omax Autos Ltd  
Authorized Signatory

**Authorized Signatory**

Regd. Office : Plot No. B-26, Institutional Area,  
Sector 32, Gurgaon - 122001 Haryana (India)  
Ph. No. : 0124-4343000 Fax. No. : 0124-2580016  
Website : [www.omaxauto.com](http://www.omaxauto.com)  
E-mail : [investors@omaxauto.com](mailto:investors@omaxauto.com)



Ref. HR/MIPL/07/2018

Date:- 27.07.2018

To Whom It May Concern

This is to certify that Ms. Shreya Sharma D/o Sh. Sanjeev Kumar Student of University of Petroleum & Energy Studies (Vill & P.O-Bidholi, Via-Premnagar, Dehradun.) having SAP ID 500053450 **B. Tech (Mechanical Engineering)** completed her **Summer Internship** for 2 months (31<sup>st</sup> May 18 to 27<sup>th</sup> July 18). During her tenure with us, we found her hardworking, sincere and punctual.

We wish her all success in her future endeavors.

For **Metlonics Industries Pvt. Ltd.**

  
H.S Thukral  
(Director-HRD)

---

**METLONICS INDUSTRIES PVT. LTD.**

---

**UNIT - I :**

D - 105, Phase VII, Industrial Area, Mohali -160055, Punjab, INDIA.  
Tel : +91-172-2236605, 5098991 | Fax : +91-172-2236606

**UNIT - II :**

Jhingran Road, Chandalon, Kurali, Mohali - 140103, Punjab, INDIA.  
E mail : info@metlonics.com | Website : www.metlonics.com



Ref. HR/MIPL/07/2018

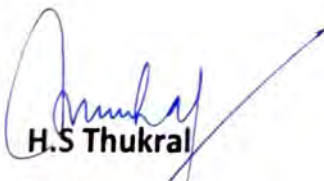
Date:- 27.07.2018

To Whom It May Concern

This is to certify that Ms. Shreya Sharma D/o Sh. Sanjeev Kumar Student of University of Petroleum & Energy Studies (Vill & P.O-Bidholi, Via-Premnagar, Dehradun.) having SAP ID 500053450 **B. Tech (Mechanical Engineering)** completed her **Summer Internship** for 2 months (31<sup>st</sup> May 18 to 27<sup>th</sup> July 18). During her tenure with us, we found her hardworking, sincere and punctual.

We wish her all success in her future endeavors.

For **Metlonics Industries Pvt. Ltd.**

  
H.S Thukral  
(Director-HRD)

---

**METLONICS INDUSTRIES PVT. LTD.**

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**UNIT - I :**

D - 105, Phase VII, Industrial Area, Mohali -160055, Punjab, INDIA.  
Tel : +91-172-2236605, 5098991 | Fax : +91-172-2236606

**UNIT - II :**

Jhingran Road, Chandalon, Kurali, Mohali - 140103, Punjab, INDIA.  
E mail : info@metlonics.com | Website : www.metlonics.com





Honda Cars India Limited

Registered Office & Works :

Plot No. A-1, Sector 40/41, Surajpur-Kasna Road,  
Greater Noida, Industrial Development Area,  
Distt. Gautam Budha Nagar (U. P.) Pin-201306  
Website : [www.hondacarindia.com](http://www.hondacarindia.com)

July 29<sup>th</sup>, 2019

## **PROJECT TRAINING CERTIFICATE**

This is to certify that **Mr. Siddharth Shekhar** of **University of Petroleum and Energy, Dehradun** has done his internship in our Manufacturing Operation (Dept. Welding) starting from **20<sup>th</sup> June 2019** to **29<sup>th</sup> July 2019**

In his internship period, he has studied "**Spot Welding Process Study Control of Defects in Welding**".

During the training period his performance was found to be Good.

We wish him all the very best for his future endeavors.

**For Honda Cars India Limited**

  
(Gaurav Katiyar)

Head of Department – AR



Date: 23.08.2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Mr. Siddhath Tiwari from University of Petroleum and Energy Studies has undergone internship at Mahindra and Mahindra Ltd. Swaraj Division as an Intern from 01.06.2019 to 15.07.2019.

Mr. Siddharth has successfully undergone training in of "Manufacturing Processes" in the Assembly Department. During the training period, his attendance and conduct was found to be Excellent.

We wish him best wishes for his future studies and career.

  
Yours Faithfully,

For Mahindra & Mahindra Ltd.





September 23, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr. Sudhanshu Dubey**, student of **University of Petroleum & Energy Studies, Dehradun** has undergone his project training for the duration of **6 weeks** from June 03, 2019 to July 14, 2019 with **Escorts Agri Machinery**.

During his project training with us, he has shown keen interest in his training and completed his internship project named **"Analysis of Engine Failure"** under the guidance of **Mr. Alok Kumar**.

Efforts put in by the student were remarkable. He was able to learn quickly, thoroughly, can quickly recognize and adjust to change. His performance during the said training was excellent and he has been sincere, methodical and proactive in execution of said project.

We wish him all success in his future endeavors.

For Escorts Ltd.

  
**Monika Garg**

**Lead HRBP- EAM (Operations) & RED**

**ESCORTS LIMITED**

15/5, Mathura Road, Faridabad - 121 003, India

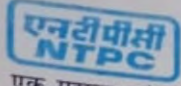
Tel.: +91-129-2250222 Fax: +91-129-2250023

E-mail: [escortsgroup@escorts.co.in](mailto:escortsgroup@escorts.co.in) Website: [www.escortsgroup.com](http://www.escortsgroup.com)

Corporate Identification Number L74899HR1944PLC039088

Registered Office: 15/5, Mathura Road, Faridabad - 121 003, (Haryana), India





एक महारत्न कंपनी

संदर्भ संख्या / Ref.No

एन टी पी सी लिमिटेड

(भारत सरकार का उद्यम)

**NTPC Limited**

(A Government of India Enterprises)

बाढ़ / Barh

दिनांक / Date

4400/BARH/EDC/VT: 2019/July/10

08.08.2019

### CERTIFICATE

*This is to certify that Mr. Sumant Kumar, a student of 3rd Year, Mechanical Engineering from University of Petroleum and Energy Studies ( Dehradun) has undergone Vocational Training at NTPC Limited, Barh, from 03.07.2019 to 05.08.2019.*

*We wish all success for future endeavors.*

(ABHISHEK ANAND)  
MANAGER (HR-EDC)

अभिषेक आनन्द  
Abhishek Anand  
प्रबंधक (मानव-संसाधन)  
Manager (HR-EDC)  
एनटीपीसी लि. बाढ़ / NTPC Ltd., Barh





## NUBERG ENGINEERING LTD.

Nuberg House, A38 H, Sector 64, Noida 201301, Delhi NCR, India  
Tel. : +91-120-2406475, 2406476, 2406477 Fax : +91-120-2406474  
E-mail : nuberg@nuberg.in Website : www.nuberg.com



4<sup>th</sup> July, 2019

### TO WHOM IT MAY CONCERN

#### Summer Internship Certificate

This is to certify that Mr. Uttam Singh, student of University of Petroleum and Energy Studies: (UPES) undergoing B.Tech – (Mech.) undertook an Summer Internship Training at Nuberg Engineering Limited, Noida (U.P) for a period of 4 weeks from 5<sup>th</sup> June, 2019 to 4<sup>th</sup> July, 2019. His performance during this period found to be "Satisfactory".

**For Nuberg Engineering Limited**

**Ashok Garg**

**DGM- Project (GPD)**



Date: 2/08/2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr. Vibhor Mathur** has undergone an internship in Mahindra and Mahindra Ltd., Automotive Division, Haridwar as an Intern from **03.06.2019** to **02.08.2019**

Mr. Vibhor Mathur has successfully completed the project assigned to Him.

During the training period, his attendance & conduct was Good.

We wish him best wishes for his future studies & career.

For Mahindra & Mahindra Ltd.



**Anupama Jha**  
**Manager – HR**



16 July 2019

**TO WHOM IT MAY CONCERN**

It is certified that Mr. **Vikhyat Thakur** student of university of petroleum & energy studies (UPES) dehradun, has undergone **six week** industrial training from 3<sup>rd</sup> June 2019 to 15<sup>th</sup> July 2019 in our organization. He worked on project "**Reducing In house Piston Rate Rejection**" under the supervision of **Quality Manager**.

He has successfully completed his project as per expectation of management. During his tenure with us we found him sincere and hardworking.


**We wish him great success in the future.**

For- Omax Autos Ltd.



Authorized Signatory



<p><b>भारत कोकिंग कोल लिमिटेड</b>  एक मिनी रत्न कंपनी  (कोल इंडिया लिमिटेड का एक अंग)  महाप्रबंधक (मा.सं.वि.) का कार्यालय  मा.सं.वि. विभाग, कल्याण भवन,  जगजीवन नगर, धनबाद-826003</p>		<p><b>BHARAT COKING COAL LIMITED</b>  A Mini Ratna Company  (A Subsidiary of Coal India Limited)  Office of the General Manager (HRD)  HRD Dept., Kalyan Bhawan,  Jagjivan Nagar, DHANBAD-826003  E mail:- <a href="mailto:gmhrd@bccl.gov.in">gmhrd@bccl.gov.in</a></p>
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संदर्भ: बीसीसीएल/महा.प्र.(मा.सं.वि.)/VT/363/2019-20

दिनांक: 02.09.2019

## प्रशिक्षण प्रमाण पत्र /CERTIFICATE OF TRAINING

This is to certify that Mr. Vishal Anand, roll no. R113218082 a B.Tech (Mech. Engg.) student of UPES, Dehradun has undergone internship at Area Work Shop, Gondudih, Kusunda Area from 05.06.2019 to 18.07.2019.

This certificate is being issued on the basis of certification dated-19.09.2019 of Dy. Manager (E&M), Area Work Shop, Gondudih, Kusunda Area, BCCL.

मुख्य प्रबंधक (खनन)  
(मा.सं.वि.)  
Sr. Manager (Mining)  
HRD, Kalyan Bhawan



REF. NO. : TRG-611

Date: 03.08.2019

**PRACTICAL TRAINING CERTIFICATE**

NAME : Pranjal Sharma

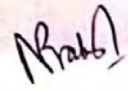
INSTITUTE : University of Petroleum & Energy studies,  
Dehradun

SEMESTER/ YEAR : 3rd Yr

COURSE : Mechanical Engineering

DEPARTMENT / PLANT : Power Plant

NATURE OF TRAINING : Industrial Training  
15.05.2019 to 03.08.2019

  
(NIGAM PRAKASH)  
VICE PRESIDENT (HR)

**SHRIRAM FERTILISERS & CHEMICALS**

Shriram Nagar, Kota, Rajasthan - 324 004 (India) Tel : +91-0744-2480991-98 2480011-17, Fax : +91-744-2480296  
Registered Office: DCM Shriram Ltd., 1st Floor, Kanchenjunga Building, 18 Barakhamba Road, New Delhi-110 001  
www.dcmshriram.com

CIN No. L74899DL1989PLC034923 (Formerly DCM Shriram Consolidated Ltd.)





**CASTLEGATE INDUSTRIAL HOLDINGS PRIVATE LIMITED**  
**COIMBATORE, TAMILNADU.**

**CERTIFICATE**

This is to certify that the internship report entitled “STUDY OF STEEL AND ALLOY CASTINGS” in the bonafide internship work done by the following student

**KARTHIKEYAN K (R113215036)**

In partial fulfillment for the award of Bachelor of Technology degree in “Mechanical Engineering”, University of Petroleum and Energy Studies, Dehradun. The internship work done during the period from 12-06-2019 to 03-07-2019 at Castlegate Industrial Holdings Pvt Ltd., COIMBATORE.



Permitted to submit the report to University authorities.

*B. [Signature]*

DATE: 03-07-2019

PLACE: COIMBATORE



## INTERNSHIP CERTIFICATE

### THE HOST ORGANISATION

The Ecole Nationale Supérieure de Mécanique et des Microtechniques

### HEREBY CERTIFIES THAT

#### THE INTERN

**NAME :** SHARMA                      **First Name :** AATISH      **Date of birth :** 15/02/1999

**A STUDENT OF :** Mechanical Engineering

**AT :** University of Petroleum and Energy Studies, Dehradun, INDIA

**has completed an internship as part of his/her studies.**

#### INTERNSHIP

Internship start and end dates : from 20/05/2019 to 19/07/2019,

Representing a total duration of 2 months.

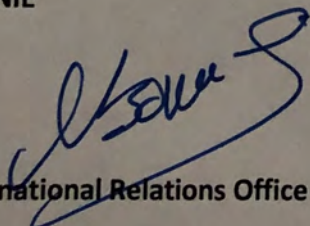
The actual duration of the internship is assessed in consideration of the actual presence of the student within the organisation, subject to any authorized time off and leaves of absence granted, as provided under article L-124-13 of the Code of Education. Each period of at least 7 hours of presence, whether consecutive or otherwise, is considered equivalent to one day of internship work, and each period equal to at least 22 days of presence, consecutive or otherwise, is considered equivalent to one month.

#### TOTAL AMOUNT OF STIPEND PAID TO THE INTERN

The intern has received an internship stipend totaling € 0,00

Besançon, 19/07/2019

Anne BONNIE

  
Head, International Relations Office





Ref. No: Au/HR-EDC-VT/2019

Date: 03/07/2019

TO WHOM SO EVER IT MAY CONCERN

This is to certify that, Mr. Arun Kumar s/o Mr. Rambabu student of B.Tech Mechanical Engineering (Third Year), SAP ID: 500055602, University of Petroleum, & Energy Studies from Faculty of Mechanical department, has completed internship Training successfully at NTPC Limited-Auraiya Gas Power Station. w.e.f. 04/06/2019 to 03/07/2019.

We wish him all the success in his all future endeavors.

  
(Praveen Singh Sengar)  
प्रबोध (प्राग) सेंगर  
Manager (HR)

औरैया गैस पावर स्टेशन / Auraiya Gas Power Station  
दिबियापुर, औरैया-206244/ Dibiyaipur, Auraiya-206244





इंडियन ऑयल कॉर्पोरेशन लिमिटेड  
बरौनी रिफाइनरी, डाकघर : बरौनी ऑयल रिफाइनरी,  
जिला : बेगूसराय, बिहार - 851 114

Indian Oil Corporation Limited  
Barauni Refinery, P.O. : Barauni Oil Refinery,  
Distt. : Begusarai, Bihar - 851 114  
वेबसाइट : www.iocl.com  
ई-मेल : baraunirefinery@indianoil.in  
दूरभाष : 06243-240159 / 240110  
फैक्स : 06243-240150 / 240278



रिफाइनरीज़ प्रभाग  
Refineries Division

ISO : 9001, 14001 & OHSAS : 18001 Certified Refinery

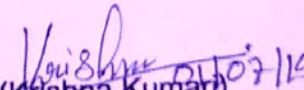
Date: 01.07.2019

Ref: L&D/VT-CERT/19

### To whom it may concern

It is to certify that Mr. AYUSH KUMAR, Roll no. R159216004 a student Of Mechanical Engineering discipline from UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, Dehradun has been undergoing Industrial Training (VT) in IOCL Barauni Refinery from 01.06.2019 to 01.07.2019 in the functional area of Mechanical Department. A brief account of his learning is compiled and submitted as project work.

As a trainee he is found to be punctual; demonstrated keen interest in learning and acquiring skills. We wish him all the success in his career.



  
(Krishna Kumari)

Asst. Manager,

Learning & Development.

KRISHNA KUMARI  
सहायक प्रबंधक (प्रशिक्षण एवं विकास)  
ASST. MANAGER (T & O)

इंडियन ऑयल कॉर्पोरेशन लिमिटेड  
INDIAN OIL CORPORATION LTD.  
बरौनी रिफाइनरी, बेगूसराय - 851 114 (बिहार)  
Barauni Refinery, Begusarai-851 114 (Bihar)

 Barauni Refinery - In harmony with nature 

पंजीकृत कार्यालय : जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व), मुम्बई-400 051, महाराष्ट्र (भारत)  
Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai-400 051, Maharashtra (India)

CIN - L 23201 MH 1959 GOI 011388



27<sup>th</sup> June, 2019

**To Whomsoever It May Concern**

This is to certify that Harsh Vardhan Vishwakarma has successfully completed his training in Manufacturing Department of CNH Industrial (India) Pvt. Ltd., Greater Noida.

His training period was between 12<sup>th</sup> June, 2019 to 27<sup>th</sup> June, 2019. He has completed his project on below given topic at CNH Industrial (India) Pvt. Ltd.



**" Driveline Communization and TPM."**

Under the guidance of Sunil Kumar Solanki – New Projects Engineer – Axle Assembly. During his training, his conduct and contribution has been commendable.

We wish him every success in his future endeavor.

**For CNH Industrial (India) Private Limited**

  
**Niharika Singh**  
HR Shared Services Lead – CNHi  


**CNH Industrial (India) Private Limited**  
(Formerly known as New Holland Fiat (India) Pvt. Ltd.)

**Registered Office**  
Level- 4, Rectangle- 1,  
D-4, District Center, Commercial Complex,  
Saket, New Delhi – 110017  
Tel.: 011-6654 4080  
CIN : U29220DL1992PTC344615

**Tractor Plant**  
Plot No. 03, Udyog Kendra, Greater Noida-201306  
Distt. Gautam Budh Nagar, Uttar Pradesh, India  
Tel. : +91-120-3056000, Fax :+91-120-3056989

**Corporate Office**  
3rd Floor, Plot No.14A, Sector-18,  
ATC Building, Maruti Industrial Complex,  
Gurugram-122015, Haryana (India)  
Tel. : +91-124-6659100





# नार्दर्न कोलफील्ड्स लिमिटेड

(एक मिनी रत्न कंपनी)

मानव संसाधन एवं विकास

सी.ई.टी.आई. सिंगरावली

पं.आ. सिंगरावली कोलियरी जिला सिंगरावली म.प्र. 486889

दूरभाष 07805-266961 फॅक्स 07805-266652



## Northern Coal Fields Limited

(A Mini Ratna Company)

Human Resource & Development

CETI, Singrauli,

P.O. Singrauli Colliery Distt. Singrauli (M.P.) 486889

Tel. 07805-266961 Fax : 266652

Sl. No. 855

No. NCL/HRD/27/19/3.06.2.....

Dated : 23/07/2013...

### TO WHOM IT MAY CONCERN

This is to certify that Mr. / M<sup>ss</sup>. P. R. N. A. V. M. S. H. R. A. ...., Student of... VI<sup>th</sup> Sem

/..... 3<sup>rd</sup> year ..... B. TECH. (MECH. ENGG.) ..... from UPES.....

attended an unpaid Vocational/practical training bearing following details at Northern Coalfields Limited:

1. Duration of training ..... 31/05/2013 to 02/07/2013.....
2. Place of training NCL..... CWS- JAY ANT.....
3. Training inputs provided ..ENGLINE/T.R.A.N.S.M.I.S.S.I.O.N./M.A.C.H.I.N.E./WELDING SHOP FUNCTION.....

We found him/her sincere and honest towards training. This certificate is being issued to him/her on successful completion of the said training. All the best wishes for bright future.

*[Signature]*  
General Manager (CETI/HRD)  
NCL, Singrauli





**JCB INDIA LIMITED**

JCBIL/PROJECT/INTERN

24-Aug-19

**TO WHOM IT MAY CONCERN**

This is to certify that your student was assigned his project with us in the **Powertrain Department** as per below details:

Name : **Mr. Pranjal Choudhary**  
Institute : University Of Petroleum and Energy Studies, Dehradun  
Course : B Tech - Automotive Design Engineering  
Project Duration : 3-Jun-19 to 20-Jul-19  
Project name : Testing & Validation of Off-road Diesel Engine  
Project Guide : Mr. Dushyantkumar Desai, Manager, Powertrain.

The candidate was found to be enthusiastic during his internship in JCB India Ltd at ICAT, Manesar. His performance has been assessed as **Very Good**.

*Note: Some aspects of the Project contain sensitive company data and hence cannot be disclosed as per the Non-disclosure agreement.*

We wish Pranjal all success and the very best for his future career.

**For JCB India Limited**

**Dhiraj Fiske**  
Deputy Manager – Human Resources  
Design Centre



The Placement Internship Coordinator  
University of Petroleum and Energy Studies  
Village & P O Bidholi  
Via - Premnagar,  
Dehradun-248007

Plot No. 82, Sector 25  
Faridabad-121 004, Haryana, India.  
Phone : +91-0129-4097 700  
Fax : +91-0129-4151 821  
E-mail : mail@grandprixfilters.com  
Website : www.grandprixfilters.com

Ref GPE / Adm / 19

Date : 25<sup>th</sup> July, 2019

Dear Sir,

Subject **Summer Internship from 10-06-2019 to 25-07-2019**

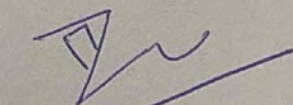
This is to certify that Mr. Rajat Singh s/o Sh. Pratap Singh resident of New Dhampur City, Dhampur, Uttar Pradesh having roll number R 159216012 of Mechanical Engineering had undergone summer training from 10<sup>th</sup> June, 2019 to till date i.e 25<sup>th</sup> July, 2019 ( on the present days) on Fabrication, production department (Pressure Vesels, Silencers, etc ) Quality Department, Planning Department, Contracts and Design ( Engineering ) Department

During the above training period in our establishment he took keen interest to learn about the above product and machines and was found very laborious.

We wish him all the best in his life.

Thanking you,

Partners in progress  
for Grand Prix Engineering Pvt Ltd



M R MONGA  
Manager

Corporate Identity Number : U27310DL1989PTC220107

Registered Office :

1312, Chiranjiv Tower, 43, Nehru Place, New Delhi- 110019, India

Phones : +91-11-4160 8707, Fax : +91-11-6660 2801



ISO 9001 : 2008

CERTIFICATE NO. 38649



Ref No: JCB/SD1/19-20

31<sup>st</sup> July 2019

**To Whom It May Concern:**

This is to certify that **Mr. Shivam Singh** student of UPES University with a purpose has completed his internship from 27<sup>th</sup> May 2019 to 26<sup>th</sup> July 2019.

During the project his conduct was found to be good. We wish him all the best in his future endeavor.

**For JCB India Ltd.**



**Subhasish Dasgupta**  
AVP-Human Resource



**TO WHOMSOEVER IT MAY CONCERN**

22<sup>nd</sup> July 2019

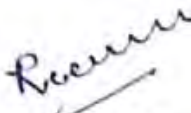
This is to certify that **Mr. Swapnil Tiwari** Student of **University of Petroleum & Energy Studies, Dehradun** has completed his training at **VE Commercial Vehicles, Pithampur**, from 05<sup>th</sup> June, 2019 to 22<sup>nd</sup> July 2019.

During this period, he did the project on – **"Process Design for Location Finalization of EATS fitment on HD assembly Lines for BSIV to BSVI Migration."**

He has worked under the guidance of **Mr. Darshan Kulkarni – Assistant Manager**. He has completed the project and his performance was **Very Good**.

We wish him all the best for his future.

For **VE Commercial Vehicles Ltd.**  
(A Volvo Group and Eicher Motors joint venture)

  
Reena Mishra  
(Deputy Manager- Human Resources)

[www.vecv.in](http://www.vecv.in)

**VE Commercial Vehicles Limited**  
102, Industrial Area No. 1,  
Pithampur - 454 775,  
Distt. Dhar (M.P.), India

**Telephone**  
+91 7292 402633

**Fax**  
+91 7292 402611

**Registered Office**  
CIN: U74900DL2008PLC175032  
3rd Floor Select Citywalk  
A-3 District Centre, Saket,  
New Delhi - 110 017, India





काँटी बिजली उत्पादन निगम लिमिटेड

(एनटीपीसी लि० की पूर्ण-स्वामित्व सहायक कम्पनी)

**Kanti Bijlee Utpadan Nigam Limited**

(A Wholly-Owned Subsidiary of NTPC Ltd.)

Ref No: 7070/KBUNL/HR/2019

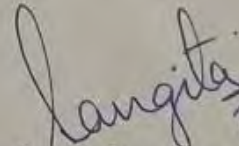
Date: 28.06.2019

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that Mr. Utkarsh, Roll No.: R159216016, Department of Mechanical Engineering from University of Petroleum and Energy Studies, Dehradun has successfully completed his training from 1<sup>st</sup> June 2019 to 28<sup>th</sup> June 2019 in Mechanical Maintenance Department of Kanti Bijlee Utpadan Nigam Limited, Kanti.

During this period, he has done a project on "Energy Production (Boilers)" at Kanti Bijlee Utpadan Nigam Limited, Kanti, Distt. Muzaffarpur (Bihar).

We wish him all the best for his future professional endeavors.

  
(Vera Sangita Baxla)  
Sr. Manager (HR)



QHT/HR/2019/02

Date: 17/07/2019

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that Mr. Vaibhav Maindola S/o Mr. Kiran Prakash Maindola has gone through the industrial training on title "Elimination of Waste" at our organization from 03 June 2019 to 17 July 2019.

During the training he was found sincere and hardworking.

We wish him success in his future endeavors.

For QH Talbros Pvt. Ltd.



Ankur Rana

Manager – HR



# SHRIRAM PISTONS & RINGS LTD.

A 4-7, INDUSTRIAL AREA, MEERUT ROAD, GHAZIABAD - 201 003 (INDIA)



SHRIRAM

O&P/GN/WT-4

JULY 10 , 2019

HOD- Mechanical  
UPES  
Dehradun.

Dear Sir/Madam

This is to certify that **Mr. Sarthak Chaudhary** student of your Institute has undergone internship in our organization from 1.06.2019 to 15.07.2019.

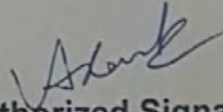
He has successfully completed his training.

During the training period, his performance & behavior have been observed good.

We wish him all success for future endeavor.

Thanking you,

Yours faithfully,

  
(Authorized Signatory)





QH Talbros Ltd.

[www.qhtalbros.com](http://www.qhtalbros.com)

Langha Industrial Estate  
Chakrata Road, Dehradun-248197  
(Uttarakhand)  
Tel. : (0135) 2697918,919,934,935  
Fax : (0135) 2697689  
E-mail : [dehradun@qhtalbros.com](mailto:dehradun@qhtalbros.com)

QHT/HR/2019/07

Date: 18/07/2019

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that Mr. Naveen Raj V S/o Mr. V.S. Kathiresan has gone through the industrial training on title "Elimination of Waste" at our organization from 03 June 2019 to 17 July 2019.

During the training he was found sincere and hardworking.

We wish him success in his future endeavors.

For QH Talbros Pvt. Ltd.

  
Ankur Rana

Manager – HR





**गेल (इंडिया) लिमिटेड**

(भारत सरकार का उपक्रम - महारत्न कंपनी)

**GAIL (India) Limited**

(A Government of India Undertaking - A Maharatna Company)

किन्फ्रा हाई-टेक पार्क,  
ऑफ, एच.एम.टी. रोड, एच.एम.टी. कॉलोनी पी.ओ.,  
कलमशेरी, कोच्ची - 683 503, केरल  
KINFRA HI-TECH PARK,  
OFF. HMT ROAD, HMT COLONY P.O.  
KALAMASSERY, KOCHI-683 503  
KERALA

फोन/PHONE : 0484 2983210/11/12  
फैक्स/FAX : 011-26185941

Ref. GAIL\Kochi\HR\2019

Dated 08<sup>th</sup> July, 2019

**Certificate**

This is to certify that Shri Muhammed Safvan, B Tech (Mechanical Engg.) ,  
University of Petroleum & Energy Studies, Dehradun, SAP Id : 500054649 has  
undergone internship in GAIL, Kochi.

Shri Muhammed Safvan got the opportunity to associate with the practical  
applications, industry practices in GAIL, Kochi under the guidance of Shri George  
Antony, Dy.Gen.Manager, GAIL, Kochi.

  
Sr. Officer – HR



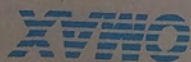
कृष्ण कुमार नायर / Krishna Kumar  
अधिकारी (मानव संसाधन) / Sr. Officer  
(इंडिया) लिमिटेड / GAIL (India)  
किन्फ्रा हाई-टेक पार्क / KINFRA Hi-Tech  
किन्फ्रा रोड / Off. HMT Road,  
एच एम टी कॉलोनी पी.ओ. / HMT Colony P.O.,  
कलमशेरी / Kalamassery, कोच्ची / Kochi 683 503

पंजीकृत कार्यालय  
गेल भवन, 16 भीकाजी कामा प्लेस  
नई दिल्ली - 110066, इंडिया

REGD. OFFICE :  
GAIL BHAWAN, 16 BHIKAJI CAMA PLACE  
NEW DELHI 110066, INDIA

सीआईएन/CIN  
L40200DL1984GOI018976  
www.gailonline.com





## OMAX AUTOS LIMITED - LUCKNOW

Tata Motors Vendor Park, Chinhat Industrial Area, Deva Road,  
Lucknow - 226019 (U.P.) India Tel.: 0522 - 6591221, 2818005  
CIN - L30103HR1983PLC026142

Ref: OAL/LKNW-HR/2019/300

Date: - 13-07-2019

### To Whom So Ever It May Concern

This is to certify that Mr. Kanishak S/O Shri Shiv Kumar Bhagat, pursuing in 7<sup>th</sup> Semester of B Tech. in Mechanical Engineering from University of Petroleum and Energy Studies has done Internship in respective branch of Weld Shop from 01.06.2019 to 13.07.2019.

He has been hard working, honest and bears a good character.

We wish him a good luck for future endeavour.

On behalf of Omax Autos Ltd.

(Sd/-) Omax Autos Ltd

Authorized Signatory

Authorized Signatory

Regd. Office : Plot No. B-26, Institutional Area,  
Sector 32, Gurgaon - 122001 Haryana (India)  
Ph. No. : 0124-4343000 Fax. No. : 0124-2580016  
Website : [www.omaxauto.com](http://www.omaxauto.com)  
E-mail : [investors@omaxauto.com](mailto:investors@omaxauto.com)



Ref No: JCB/SD1/19-20

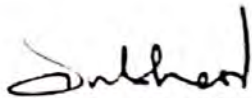
19<sup>th</sup> July 2019

To Whom It May Concern:

This is to certify that **Mr. Arun Pratap Singh** student of University of Petroleum & Energy Studies, Dehradun has completed his internship from 27<sup>th</sup> May 2019 to 19<sup>th</sup> July 2019.

During the project his conduct was found to be good. We wish him all the best in his future endeavor.

For JCB India Ltd.



**Subhasish Dasgupta**  
AVP-Human Resource



MSIL: PPDET: INT | 2019|0851

Date: 12.07.2019

**TO WHOM SO EVER IT MAY CONCERN**

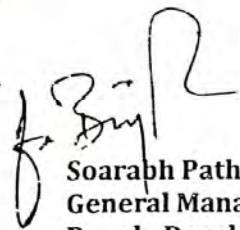
This is to certify that **Mr. Ekansh Raj Singh** student of **University Of Petroleum And Energy Studies, Dehradun** has undergone project training with **MARUTI SUZUKI INDIA LIMITED** as per details given below:-

<b><u>PROJECT TITLE</u></b>	OVERVIEW AND APPLICATION IN SAFETY DEVICES IN PRESS SHOP
<b><u>TRAINING PERIOD</u></b>	05.06.2019 to 15.07.2019
<b><u>DEPT/ DIVISION</u></b>	MPG2-3

He has completed the above project to our satisfaction and our assessment of his overall project efforts & learning is **VERY GOOD**. During the training we found him hardworking, eager to learn and with good initiative. He was able to develop good inter-personal relations with people in the Department/Division.

We wish him very best in his future career.

With Best Wishes



**Soarabh Pathak**  
General Manager  
People Development | Training Academy - HR

**MARUTI SUZUKI INDIA LIMITED**  
CIN: L34103DL1981PLC011375

Registered & Head Office  
Maruti Suzuki India Limited,  
1 Nelson Mandela Road, Vasant Kunj,  
New Delhi 110070, India.  
Tel: 011-46781000, Fax: 011-46150275/46150276  
www.marutisuzuki.com

Gurgaon Plant:  
Maruti Suzuki India Limited,  
Old Palam Gurgaon Road,  
Gurgaon 122015, Haryana, India.  
Tel: 0124-2346721, Fax: 0124-2341304

Manesar Plant:  
Maruti Suzuki India Limited,  
Plot No.1, Phase 3A, IMT Manesar,  
Gurgaon 122051, Haryana, India.  
Tel: 0124-4884000, Fax: 0124-4884199

E-mail: investor@maruti.co.in, contact@maruti.co.in



**भारत हेवी इलेक्ट्रिकल्स लिमिटेड****Bharat Heavy Electricals Ltd.**

हेवी इक्विपमेन्ट रिपेयर प्लान्ट / Heavy Equipment Repair Plant

तरना, शिवपुर, वाराणसी / Tarna, Shivpur, Varanasi

(मानव संसाधन विभाग / Human Resource Department)

फोन नं. / Phone No. 0542 - 3074552

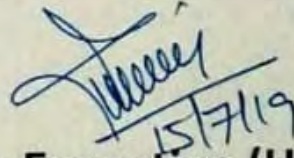
Ref : HERP:HR:TR19088

Date: 15/07/2019

**::CERTIFICATE::**

This is to certify that **Mr. AAKARSH HARIT**, a student of MECHANICAL ENGINEERING studying in IIIrd Year at UNIVERSITY OF PETROLEUM AND ENERGY STUDIES has undergone vocational training in BHEL, HERP, Varanasi from 03/06/2019 to 13/07/2019.

His performance and conduct during training was found satisfactory.

  
**Sr. Executive (HR)**

राज करन मिश्र / Raj Karan Mishra  
वरिष्ठ कार्यपालक (मानव संसाधन) / Sr. Executive (HR/OL)  
भारत हेवी इलेक्ट्रिकल्स लि. / Bharat Heavy Electricals Ltd.  
हरप, वाराणसी / HERP, Varanasi

पंजीकृत कार्यालय : बी.एच.ई.एल., सिरी फोर्ट, नई दिल्ली - 110049  
Registered office: 'BHEL House, Siri Fort, New Delhi- 110049



# BIRLA TEXTILE MILLS

(A Unit of Suttlej Textiles and Industries Limited)

Sai Road, Bhatouli Khurd, P.O. Baddi – 173 205, Distt. Solan (H.P.)

Ph.: (01795) 244653-54, 245285-86-87, E-mail : btm@suttlejtextiles.com

BTM/2019-20/

18<sup>th</sup> July, 2019

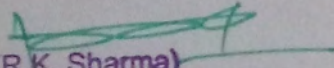
## TO WHOM IT MAY CONCERN

This is to certify that **Mr. Abhishek Thakur S/o Late Shri J.C.Thakur**, student of **B.Tech. Mechanical Engineering**, Roll/Enrollment No. **SAP ID 500053616** of **University of Petroleum & Energy Studies Dehradun (U.K)** has successfully completed Industrial Training with our **Engineering Deptt.** w.e.f. **1<sup>st</sup> of June, 2019 to 15<sup>th</sup> of July, 2019.**

During this tenure we found him sincere, punctual, honest and diligent in his work.

We wish all the success for his future career.

For Birla Textile Mills  
(A Unit of Suttlej Textiles and Industries Ltd.)  
(A Unit of Suttlej Textiles and Industries Limited)

  
(R.K. Sharma)  
(Authorized Signatory)



The Placement Internship Coordinator  
University of Petroleum and Energy Studies  
Village & P O Bidholi  
Via - Premnagar,  
Dehradun-248007

Plot No. 82, Sector 25  
Faridabad-121 004, Haryana, India.  
Phone : +91-0129-4097 700  
Fax : +91-0129-4151 821  
E-mail : mail@grandprixfilters.com  
Website : www.grandprixfilters.com

Ref GPE / Adm / 19

Date : 25<sup>th</sup> July, 2019

Dear Sir,

Subject **Summer Internship from 10-06-2019 to 25-07-2019**

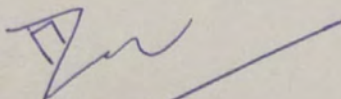
This is to certify that Mr. Akash Chandra s/o Sh. Hareram Pandey resident of Siwan, Bihar having roll number R162216003 of Mechanical Engineering had undergone summer training from 10<sup>th</sup> June, 2019 to till date i.e 25<sup>th</sup> July, 2019 ( on the present days) on Fabrication , production department (Pressure Vesels, Silencers, etc ) Quality Department, Planning Department, Contracts and Design ( Engineering ) Department

During the above training period in our establishment he took keen interest to learn about the above product and machines and was found very laborious.

We wish him all the best in his life.

Thanking you,

Partners in progress  
for Grand Prix Engineering Pvt Ltd



**M R MONGA**  
Manager

Corporate Identity Number : U27310DL1989PTC220107

Registered Office :  
1312, Chiranjiv Tower, 43, Nehru Place, New Delhi- 110019, India  
Phones : +91-11-4160 8707, Fax : +91-11-6660 2801





## To Whomsoever It May Concern

This is to certify that **Mr. Amanat Ali** pursuing his B.Tech in **Mechanical with Specialization in Material Science and Nanotechnology** at the **University of Petroleum and Energy Studies, Dehradun** has completed his internship period (26 May 2019 - 28 July 2019) at my laboratory in the **Materials Engineering Department of the Indian Institute of Science (IISc), Bangalore**. During this period, he synthesized piezoelectric-ferrimagnetic particulate multiferroic composites by spontaneously precipitating the ferrimagnetic phase(s) during sintering by using suitable additives. He has also characterized the specimens using scanning electron microscopy (SEM), Energy dispersive spectroscopy (EDS), x-ray powder diffraction, poling, dielectric and ferroelectric (P-E) measurements and has submitted the report to the best of my knowledge.

  
Dr. RAJEEV RANJAN  
Professor  
Dept. of Materials Engineering  
Indian Institute of Science  
Bangalore-560 012, India  
Professor Rajeev Ranjan

Department of Materials Engineering,  
Indian Institute of Science  
Bangalore-560012  
INDIA  
Tel: +91-80-2293 2989  
Email: [rajeev@iisc.ac.in](mailto:rajeev@iisc.ac.in)



16 July 2019

**TO WHOM IT MAY CONCERN**

It is certified that Mr. **Kunal Rawat** student of university of petroleum & energy studies (UPES) dehradun, has undergone **six week** industrial training from 3<sup>rd</sup> June 2019 to 15<sup>th</sup> July 2019 in our organization. He worked on project "**Reducing In house Piston Rate Rejection**" under the supervision of **Quality Manager**.

He has successfully completed his project as per expectation of management. During his tenure with us we found him sincere and hardworking.

We wish him great success in the future.

For- Omax Autos Ltd.  
  
Authorized Signatory



The Placement Internship Coordinator  
University of Petroleum and Energy Studies  
Village & P O Bidholi  
Via - Premnagar,  
Dehradun-248007

Plot No. 82, Sector 25  
Faridabad-121 004, Haryana, India.  
Phone : +91-0129-4097 700  
Fax : +91-0129-4151 821  
E-mail : mail@grandprixfilters.com  
Website : www.grandprixfilters.com

Ref GPE / Adm / 19

Date : 25<sup>th</sup> July, 2019

Dear Sir,

Subject **Summer Internship from 10-06-2019 to 25-07-2019**

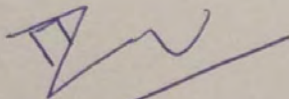
This is to certify that Mr. Kushagra Tyagi s/o Sh. Anil Tyagi resident of Vasundra, Ghaziabad having roll number R162216008 of Mechanical Engineering had undergone summer training from 10<sup>th</sup> June, 2019 to till date i.e 25<sup>th</sup> July, 2019 ( on the present days) on Fabrication , production department (Pressure Vesels, Silencers, etc ) Quality Department, Planning Department, Contracts and Design ( Engineering ) Department

During the above training period in our establishment he took keen interest to learn about the above product and machines and was found very laborious.

We wish him all the best in his life.

Thanking you,

Partners in progress  
for Grand Prix Engineering Pvt Ltd



M R MONGA  
Manager

Corporate Identity Number : U27310DL1989PTC220107

Registered Office :

1312, Chiranjiv Tower, 43, Nehru Place, New Delhi- 110019, India

Phones : +91-11-4160 8707, Fax : +91-11-6660 2801







*Hindustan Unilever Limited*

Hindustan Unilever Limited, Unit-4  
Plot No: 1, Sector 1A, IIE  
Ranipur, Haridwar-249403  
(Uttarakhand) INDIA

Tel: +91 (0) 1334 300200  
Fax: +91 (0) 1334 300291  
Web: [www.hul.co.in](http://www.hul.co.in)  
Cin: L15140MH1933PLC002030

31<sup>st</sup> Jul 2019

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Prashant Pal S/o Mr. Devraj Kumar has completed eight-week Internship Training from 1<sup>st</sup> June 2019 to 31<sup>st</sup> July 2019 in Supply Chain Department of CLS 2 Unit of Hindustan Unilever Ltd, Haridwar.

We wish him success in future endeavors.

For HINDUSTAN UNILEVER LIMITED

Vivek Dev  
HR Executive



# पर्यवेक्षक प्रशिक्षण केन्द्र

उत्तर रेलवे, चारबाग, लखनऊ

प्रमाण-पत्र

क्रमांक.....19B244.....

दिनांक 09.07.19.....

प्रमाणित किया जाता है कि श्री.....Ashutosh Pratap Singh.....

वर्ष/सेमेस्टर.....6th.....II<sup>nd</sup> यू. संस्था.....University of Petroleum & Energy Studies.....

ने रेल इंजन कारखाना, उत्तर रेलवे, चारबाग, लखनऊ में दिनांक 03.06.19 से 02.07.19 तक,

वोकेशनल प्रशिक्षण के अर्न्तगत प्रोजेक्ट.....Pure Air Brake System as per.....को

सफलतापूर्वक पूर्ण किया।

RDSO IRB-1.

पाठ्यक्रम समन्वयक

मुख्य अधिकारी

कारखाना प्रशिक्षण केन्द्र (यांत्रिक)  
उ०रे० चारबाग, लखनऊ

प्रधानाचार्य

प्रधानाचार्य

पर्यवेक्षक प्रशिक्षण केन्द्र  
उत्तर रेलवे, चारबाग, लखनऊ



Date: July 31, 2019

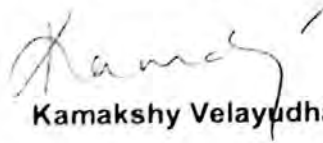
TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Manu Sharma S/o Mr. Vinay Kumar Sharma, a student of University of Petroleum and Energy Studies (UPES), Dehradun has undergone his Practical Training in our MEP Department, from 03-06-19 to 31-07-19 at Jaipur.

During his training period he took keen interest in understanding the activities of MEP Department & has also completed one project on "Time Study for SR and SPM".

We found him sincere and committed wish him all the best in his future endeavors.

For JCB India Ltd

  
**Kamakshy Velayudhan**  
**AVP Human Resource**





August 27, 2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Mukul Mukhija student of University of Petroleum and Studies, has undergone his project training for the duration of 2 months from June 01, 2019 till July 31, 2019 with Escorts Agri Machinery.

During his project training with us, he has shown keen interest in his training and completed his internship project named "*Assesment of Defects that occurs during the Machining of Cylinder Block*" under the guidance of Mr. V K Agarwal.

Efforts put in by the student were remarkable. He was able to learn quickly, thoroughly, can quickly recognize and adjust to change. His performance during the said training was excellent and he has been sincere, methodical and proactive in execution of said project.

We wish him all success in his future endeavors.

For Escorts Ltd.

*For, Soumyani Chatterjee*

Monika Garg

Lead HRBP- EAM (Operations) & RED

**ESCORTS LIMITED**

15/5, Mathura Road, Faridabad - 121 003, India

Tel.: +91-129-2250222 Fax: +91-129-2250023

E-mail: [escortsgroup@escorts.co.in](mailto:escortsgroup@escorts.co.in) Website: [www.escortsgroup.com](http://www.escortsgroup.com)

Corporate Identification Number L74899HR1944PLC039088

Registered Office: 15/5, Mathura Road, Faridabad - 121 003, (Haryana), India



JSPL:RGH: HR&ES:2019

Date : 01.07.2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr. Prahlad Kumar Bang** pursuing **B. Tech in Mechanical Engineering** from **UPES, Dehradun** had undergone Summer Training in our organization from **01<sup>st</sup> June 2019 to 30<sup>th</sup> June 2019** in **RUBM Department**.

During his stay with us, Mr. Prahlad Kumar Bang was punctual, sincere and hard working in his approach towards training.

We wish him all the success.

for **JINDAL STEEL & POWER LTD.,**



**D. Basu**

**Manager - HR & ES**

HR & ES - (Training & Development)  
Jindal Steel & Power Limited

Jindal Steel & Power Limited

Post Box No.16, Kharsia Road, Raigarh – 496 001 (C.G.)

T (07762) 227001- 227005 (5 lines) F 07762 – 227021, 227022 E raigarh@jspl.com

Registered Office O.P.Jindal Marg, Hisar – 125 005 (Haryana)





# भारत हेवी इलेक्ट्रिकल्स लिमिटेड रानीपुर, हरिद्वार

BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARIDWAR

## TRAINING CERTIFICATE

Registration No. : HWR/HRDC/201900237

Certificate No. : HWR/HRDC/201900153

Mr RACHIT LAL Son/Daughter/Wife of Shri RAKESH LAL, Student of UNIVERSITY OF PETROLEUM & ENERGY STUDY, DEHRADUN (UTTARAKHAND), MECHANICAL ENGINEERING Branch has undergone Vocational Training in BHARAT HEAVY ELECTRICALS LIMITED, HARIDWAR from 04.06.2019 to 13.07.2019.

The area of training was GENERAL AWARENESS OF STEAM TURBINE MANUFACTURING (TUM, BL-3)

The performance of the trainee during the above training period was VERY GOOD.

Date : 13.07.2019

(Checked by)

(Section Incharge)

तन्त्रु युक्ता/

अभियंता





भारत हेवी इलेक्ट्रिकल्स लिमिटेड रानीपुर, हरिद्वार

BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARIDWAR

TRAINING CERTIFICATE

Registration No. : HWR/HRDC/2019000086

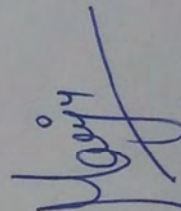
Certificate No. : HWR/HRDC/2019000068

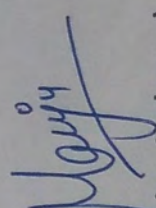
Mr **RAVI MAURYA** Son/Daughter/Wife of Shri YASHWANT SINGH , Student of UNIVERSITY OF PETROLEUM & ENERGY STUDY, DEHRADUN (UTTARAKHAND) , MECHANICAL ENGINEERING Branch has undergone Vocational Training in **BHARAT HEAVY ELECTRICALS LIMITED, HARIDWAR** from **01.06.2019** to **31.07.2019**.

The area of training was **MACHINING OF CRITICAL ASSEMBLIES OF STEAM TURBINE.**

The performance of the trainee during the above training period was **VERY GOOD.**

Date : 31.07.2019

  
(Checked by)

  
(Section Incharge)

मन्जु शुक्ला  
अभियंता

मानव संसाधन विकास विभाग  
बी.एच.ई.एल., रानीपुर, हरिद्वार



## **EICHER TRACTORS**

(A unit of TAFE Motors & Tractors Limited, a wholly owned subsidiary of **TAFE** )  
Plot No.1, Sector D, Industrial Area, Mandideep - 462046, Distt. Raisen (MP)  
Tel: + 91 7480 - 407680/ 1/ 2/ 3/ 4, Fax: + 91 7480 - 403697



*02<sup>nd</sup> August' 2019*

### **CERTIFICATE**

*This is to certify that Mr. Shivansh Sharma (Roll NoR 161216013) a student of B.Tech. Mechanical with specialization in Production Engineering, UPES, Dehradun (Uttarakhand), has successfully completed industrial training with us from 01-June -19 to 02-August-19 in Production departments. During his training he has worked on "Study of autonomous maintenance & tractor assembly process " project.*

*He was found to be sincere, hardworking and a keen learner*

*We wish his success in life.*

*For Eicher Tractors,  
(A Unit of TAFE Motors & Tractors Limited),*

**Krishna K Yaduwanshi**  
**Human Resources**



# SIGMA<sup>®</sup>

Specialists in Shock, Vibration Control  
Commercial Vehicles  
Industrial, Agricultural  
& Railway Parts

CIN: U74899DL1995PLC000007

**SIGMA CORPORATION INDIA LIMITED**  
Govt. Recognized 2 Star Export House  
Wharfedale, Dera Darya Lakh Road, Sonapat  
Distt. Gurgaon (Haryana)-122102  
Tel: (0124) 2014223, 2014228  
Email: bhondsiplant@sigmacorpindia.com  
Internet: www.sigmacorpindia.com

July 12, 2019

## To Whom So Ever It May Concern

This is to Certify that Mr. Tanjeet Ahuja S/o Sh Tejinder Singh Ahuja has undergone training in our organization at our Bhondsi plant from 01<sup>st</sup> June 2019 to 30<sup>th</sup> June 2019.

During his Training we found him Hard Working, Co-operative, and keen in learning.

We Wish him all the success in his life.

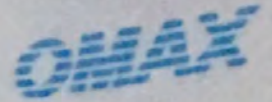
For Sigma Corporation (India) Ltd

Authorized Signatory



# OMAX AUTOS LIMITED - LUCKNOW

Tata Motors Vendor Park, Chinhat Industrial Area, Deva Road,  
Lucknow - 226019 (U.P.) India Tel.: 0522 - 6591221, 2818005  
CIN - L30103HR1983PLC026142



Ref: OAL/LKNW-HR/2019/308

Date: - 30-07-2019

## To Whom So Ever It May Concern

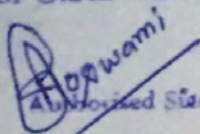
This is to certify that **Mr. Vishwas Gupta S/O B K Gupta**, pursuing in 3<sup>rd</sup> Year of B Tech. in Mechanical Engineering (Production) from University of Petroleum & Energy Studies, Deharadun has done Internship in respective branch of Frame Shop (Process Validation & Cycle Time Studies) from 01.06.2019 to 30.07.2019.

He has been hard working, honest and bears a good character.

We wish him a good luck for future endeavour.

On behalf of Omax Autos Ltd.

For Omax Autos Ltd

  
Authorized Signatory

Authorized Signatory

Regd. Office : Plot No. B-26, Institutional Area,  
Sector 32, Gurgaon - 122001 Haryana (India)  
Ph. No. : 0124-4343000 Fax. No. : 0124-2580016  
Website : [www.omaxauto.com](http://www.omaxauto.com)  
E-mail : [investors@omaxauto.com](mailto:investors@omaxauto.com)



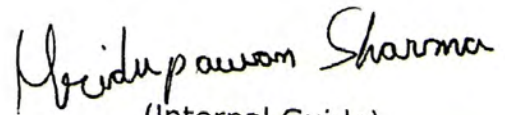
8<sup>th</sup> July, 19**Mr. Utkarsh Agarwal**  
**University of Petroleum & Energy Studies, Dehradun****TO WHOM SO EVER IT MAY CONCERN**

This is to certify that **Mr. Utkarsh Agarwal** pursuing his graduation from **The University of Petroleum & Energy Studies, Dehradun** has successfully completed his Summer Internship during 6<sup>th</sup> June, 19 - 8<sup>th</sup> July, 19.

The project was undertaken by him in **Yajna Tech Ventures Pvt. Ltd.** as **Media & Sales Trainee** under the mentorship of **Mr. Mridupawan Sharma** designated as **Creative Media Specialist** at **Yajna Tech Ventures**.

The Project on evaluation fulfils all the stated criteria and the student's findings are his original work.

I hereby certify his work satisfactory to the best of my knowledge.

  
(Internal Guide)**Mridupawan Sharma**  
**(Creative Media Specialist)**





**HEMA**  
**ENGINEERING INDUSTRIES LIMITED**  
**UNIT VIII - HARIDWAR**

---

Date: 3.08.2019

**TO WHOM IT MAY CONCERN**

This is to certify that Mr. Utkarsh Agarwal S/O Mr. Neelesh Kumar Agarwal has successfully completed his Summer Training on the topic "Welding Process in Auto Industry" from 5<sup>th</sup> July, 2019 to 3<sup>rd</sup> Aug, 2019. During the period of his internship program with us he was found punctual.

We wish him all the success in his Future endeavors.

**For: Hema Engineering Industries Ltd.**

  
**Authorized Signatory**

**WORKS : PLOT NO. 4, INDUSTRIAL PARK-2, VILLAGE SALEMPUR MEHDOOD, HARIDWAR (UTTARAKHAND)**

**CORPORATE OFFICE : 6th Floor, The Palm Square Emmar MGF, Golf Course Ext. Road, Sector-66, Gurugram-122001 (Hr)**  
**Tel. : 0124-2370740-44 Fax : 91-124-4032115, E-mail : info@hemaengineering.com, website : http://www.hemaengineering.com**  
**REGD OFFICE : Sachidanand Farm House, Kishangarh Village, In front of Swimming Pool, (Near DDA Sports Complex),**  
**Lane Green Avenue, Vasant Kunj, New Delhi - 110070, TEL. : +91-1126802764. 26801628. 26805205**



# OMAX AUTOS LIMITED - LUCKNOW



Tata Motors Vendor Park, Chinhat Industrial Area, Deva Road,  
Lucknow - 226019 (U.P.) India Tel.: 0522 - 6591221, 2818005  
CIN - L30103HR1983PLC026142

Ref: OAL/LKNW-HR/2019/308

Date: - 30-07-2019

## To Whom So Ever It May Concern

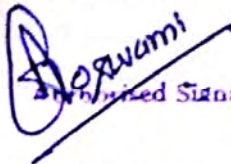
This is to certify that **Mr. Sandeep Dagar S/O Ram Niwas**, pursuing in 3<sup>rd</sup> Year of B Tech. in Mechanical Engineering (Production) from University of Petroleum & Energy Studies, Deharadun has done Internship in respective branch of Frame Shop (Process Mapping Based on Customer Complaints) from 01.06.2019 to 30.07.2019.

He has been hard working, honest and bears a good character.

We wish him a good luck for future endeavour.

On behalf of Omax Autos Ltd.

For Omax Autos Ltd

  
Authorized Signatory

Authorized Signatory

Regd. Office : Plot No. B-26, Institutional Area,  
Sector 32, Gurgaon - 122001 Haryana (India)  
Ph. No. : 0124-4343000 Fax. No. : 0124-2580016  
Website : [www.omaxauto.com](http://www.omaxauto.com)  
E-mail : [investors@omaxauto.com](mailto:investors@omaxauto.com)





# भारत हेवी इलेक्ट्रिकल्स लिमिटेड रानीपुर, हरिद्वार

BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARIDWAR

## TRAINING CERTIFICATE

Registration No. : HWR/HRDC/201900080

Certificate No. : HWR/HRDC/201900143

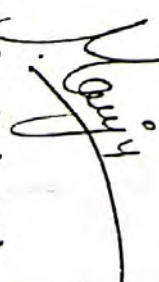
Mr ASHWANI KUMAR JHA Son/Daughter/Wife of Shri GOPAL JHA, Student of UNIVERSITY OF PETROLEUM & ENERGY STUDY, DEHRADUN (UTTARAKHAND), MECHANICAL ENGINEERING Branch has undergone Vacational Training in BHARAT HEAVY ELECTRICALS LIMITED, HARIDWAR from 04.06.2019 to 13.07.2019.

The area of training was MACHINING OF CRITICAL ASSEMBLIES OF STEAM TURBINE.

The performance of the trainee during the above training period was VERY GOOD.

Date : 13.07.2019

(Checked by) 

(Section Incharge)   
मन्जु शुक्ला  
अभियंता



Jaipur Plant



**BOSCH**

Date: 05-Jul-19

Bosch Limited  
PAN AAACM9840P  
CIN:  
L85110KA1951OLC000761  
SP-663, RIICO Industrial Area,  
Sitapura, Jaipur-302 022  
Rajasthan, INDIA  
Tel : +91 141 666-4141, 42  
www.boschindia.com

JaP/HRL/2019

**Certificate for Completion of Summer Internship**

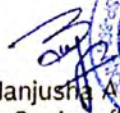
This is to certify that Mr. Vashishtha Apurva, pursuing B.Tech in Mechanical from University of Petroleum and Energy Studies, Dehradun, has completed his project work at our Jaipur location.


His project period was from **03-Jun-19** to **05-Jul-19** on the topic;

**"Proposal for change in Dimension of lever shaft groove and extension spring"**

During this period his performance and conduct was good.

for Bosch Limited,  
(Jaipur Plant)

  
Manjusha Anthony  
Senior officer  
Human Resources





# BHARAT ELECTRONICS LIMITED

A GOVT. OF INDIA (MINISTRY OF DEFENCE) ENTERPRISE

P.O.: BHARAT NAGAR, GHAZIABAD-201010. (U.P.)



भारत इलेक्ट्रॉनिक्स  
BHARAT ELECTRONICS

QUALITY, TECHNOLOGY, INNOVATION

## HUMAN RESOURCE DEVELOPMENT DEPARTMENT

### INTERNSHIP CERTIFICATE

Ref. No: HRD / IT /20.19/..233.

This is to certify that Mr. /Ms AISHWARY RASTOGI

Pursuing B.TECH (ELECTRONICS) from UNIVERSITY OF PETROLEUM AND ENERGY STUDIES has

undergone Internship Training in Bharat Electronics Limited, Ghaziabad from 17<sup>TH</sup> JULY, 2019 to 27<sup>TH</sup> JULY, 2019

The Project undertaken by him/her was STUDY OF SIGNAL GENERATION BUILDING BLOCK  
His/her performance during the training was EXCELLENT OF LLTR

DATE: 27<sup>TH</sup> JULY, 2019...

(HRD HEAD)

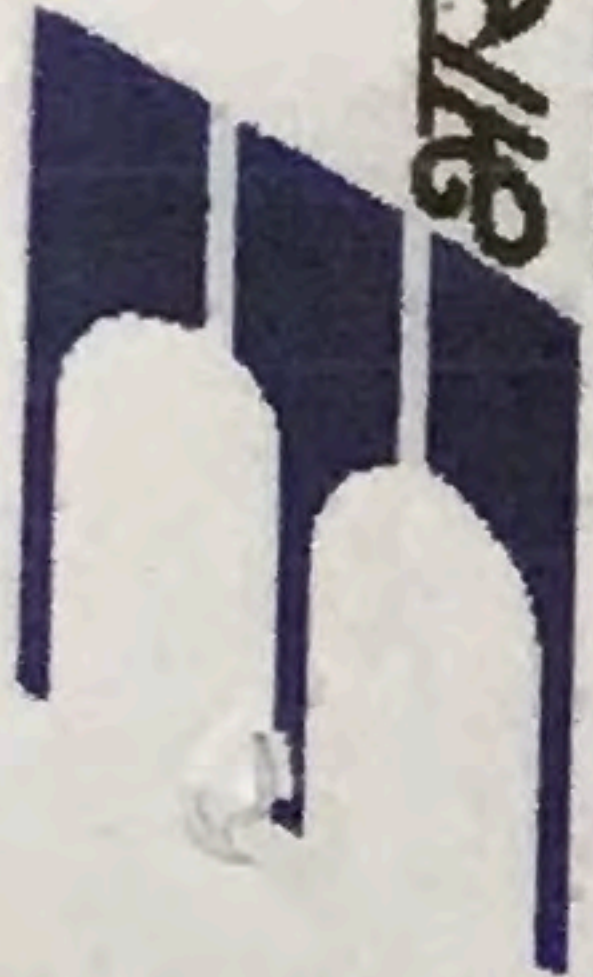
प्रभाकर व्यास

PRABHAKAR VYAS

उप महा प्रबन्धक (मा.सं.)

DGM





**भारत इलेक्ट्रॉनिक्स**

**BHARAT ELECTRONICS**

A GOVT. OF INDIA (MINISTRY OF DEFENCE) ENTERPRISE  
BHARAT NAGAR P.O. GHAZIABAD-201010. (U.P.)

HUMAN RESOURCE DEVELOPMENT DEPARTMENT



TRAINING CERTIFICATE

This is to certify that ✓ Mr. / Ms. ANMOL SINGH (UPST/450/B.Tech/2019)  
Pursuing B.TECH from UNIVERSITY OF PETROLEUM AND ENERGY STUDIES (UPES)  
has undergone unpaid practical training during the period from 27<sup>TH</sup> MAY, 2019 to 13<sup>TH</sup> JULY, 2019  
in our organization.

The project undertaken by him/her was STUDY OF RADAR SYSTEM  
His /her performance during the training was EXCELLENT

Date: 13<sup>TH</sup> JULY, 2019.

For BHARAT ELECTRONICS LTD. X

MANAGER (HRD)

प्रभात व्यास  
Prabhat Vyas  
प्रबन्धक (मा.स.वि./गा.बाद)  
Manager (HRD/GAD)



*Dated: 13-July-2019*

# *Certificate of Training*

*(Industrial Training)*

*June – July 2019*

*7 Weeks*

*at*

***Global SPS, Mohali***

This is to certify that

*ASHISH MANN*

Has completed Industrial Training at our GLOBAL SPS from 28<sup>th</sup> June 2019 to 13<sup>th</sup> July 2019  
His performance in training and project has been good. He has shown good dedication, a very  
Good behavior and good approach towards the Training provided and in the project assigned.  
We wish him/~~her~~ all the best for his/~~her~~ future.

*For Global SPS*

**For GLOBAL SPS**

*Authorized Signatory*

*Signed* .....





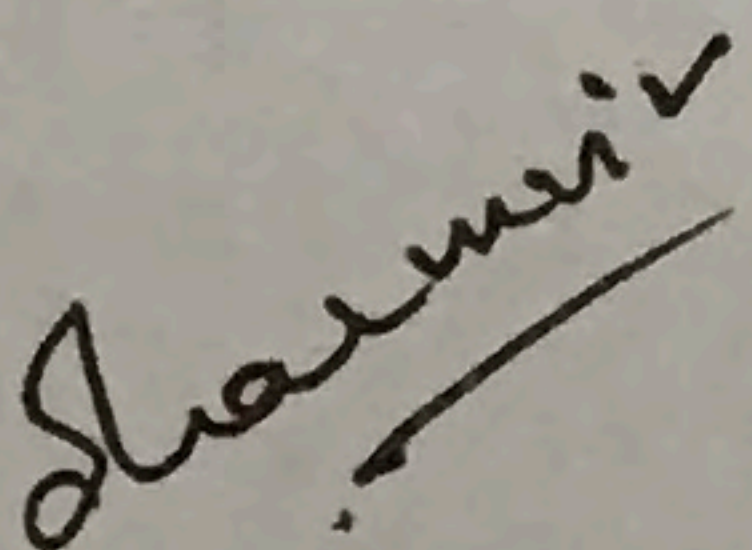
भारत सरकार - रक्षा मंत्रालय  
Govt of India - Ministry of Defence  
रक्षा इलेक्ट्रॉनिकी प्रयोज्यता प्रयोगशाला  
Defence Electronics Applications Laboratory  
पोस्ट बॉक्स सं० 6, रायपुर रोड  
PO Box No. 6, Raipur Road  
देहरादून - 248001  
Dehradun - 248001

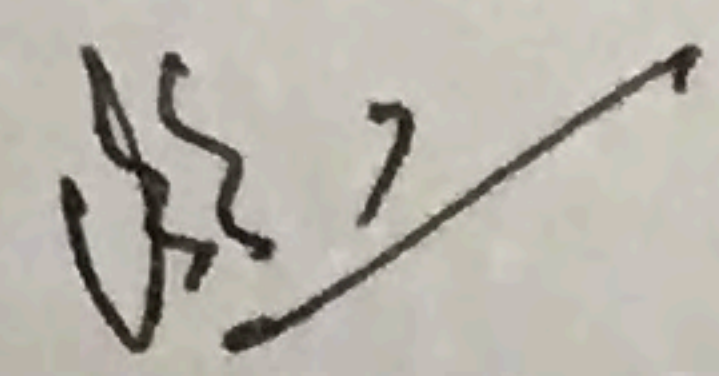
Dated : 25<sup>th</sup> June 2019

### CERTIFICATE

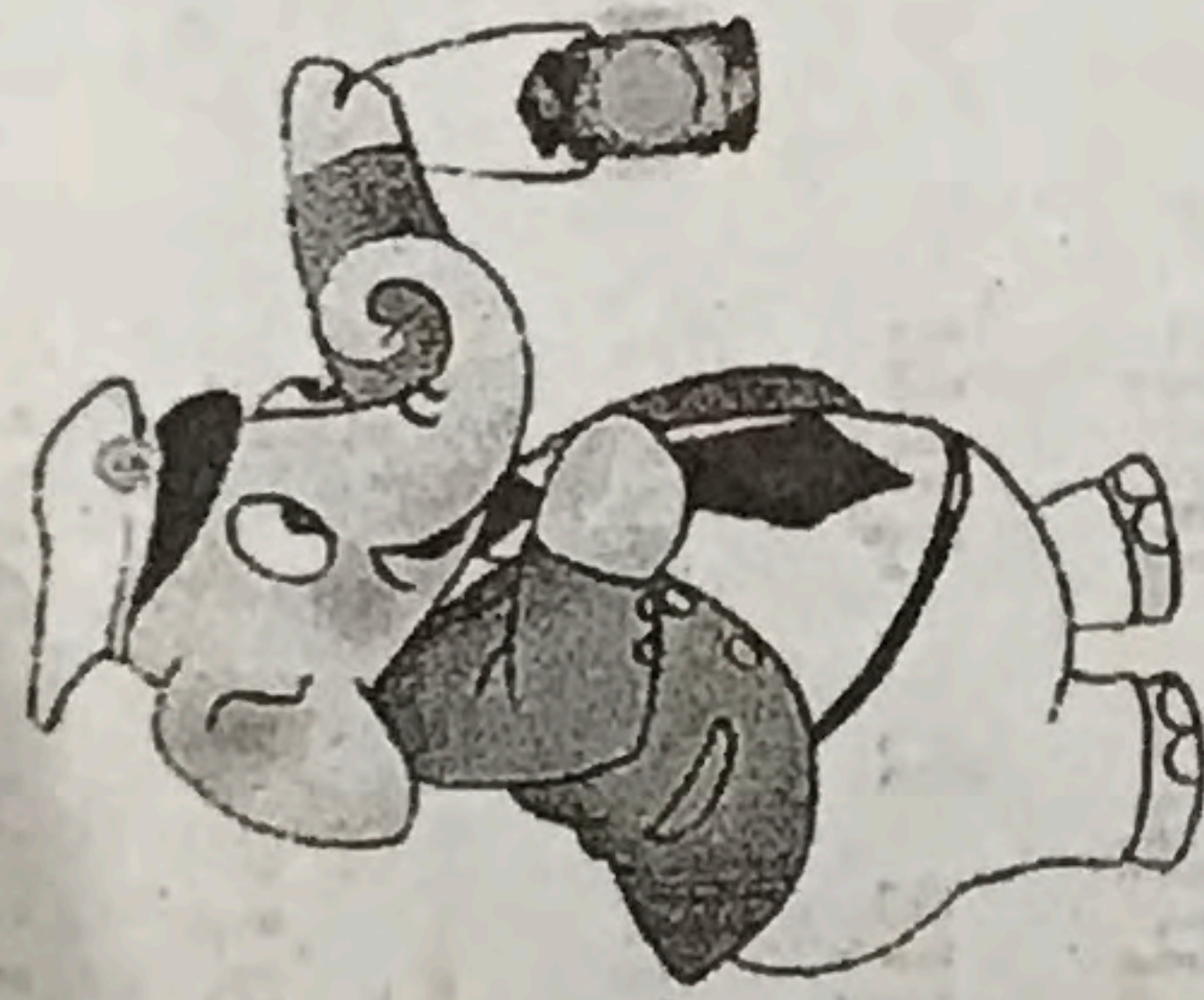
Certified that the report titled "**CHARACTERISATION OF RF COMPONENTS AND TESTING OF UP / DOWN CONVERTOR AT S-BAND**" is a bonafide record of the training work carried out by **Mr. Divyansh Kaushik** towards partial fulfilment of the requirements for his Bachelor's Degree (B. Tech.) in Electronics and Communication from the department of Electronics Science **University of Petroleum And Energy Studies, Bidholi, Dehradun.**

The work was carried out from 27<sup>th</sup> May 2019 to 25<sup>th</sup> June 2019 at Defence Electronics Applications Laboratory (DEAL) and was successfully completed under the guidance of **Shri Dharm Vir Singh, Scientist-D.**

  
(Dharm Vir Singh)  
Scientist-D

  
(Umesh Bahuguna)  
Scientist-F  
Microwave Systems Group





# NORTHERN RAILWAY



150 GLORIOUS YEARS

## ELECTRIC LOCO SHED

### GHAZIABAD

## TRAINING CERTIFICATE

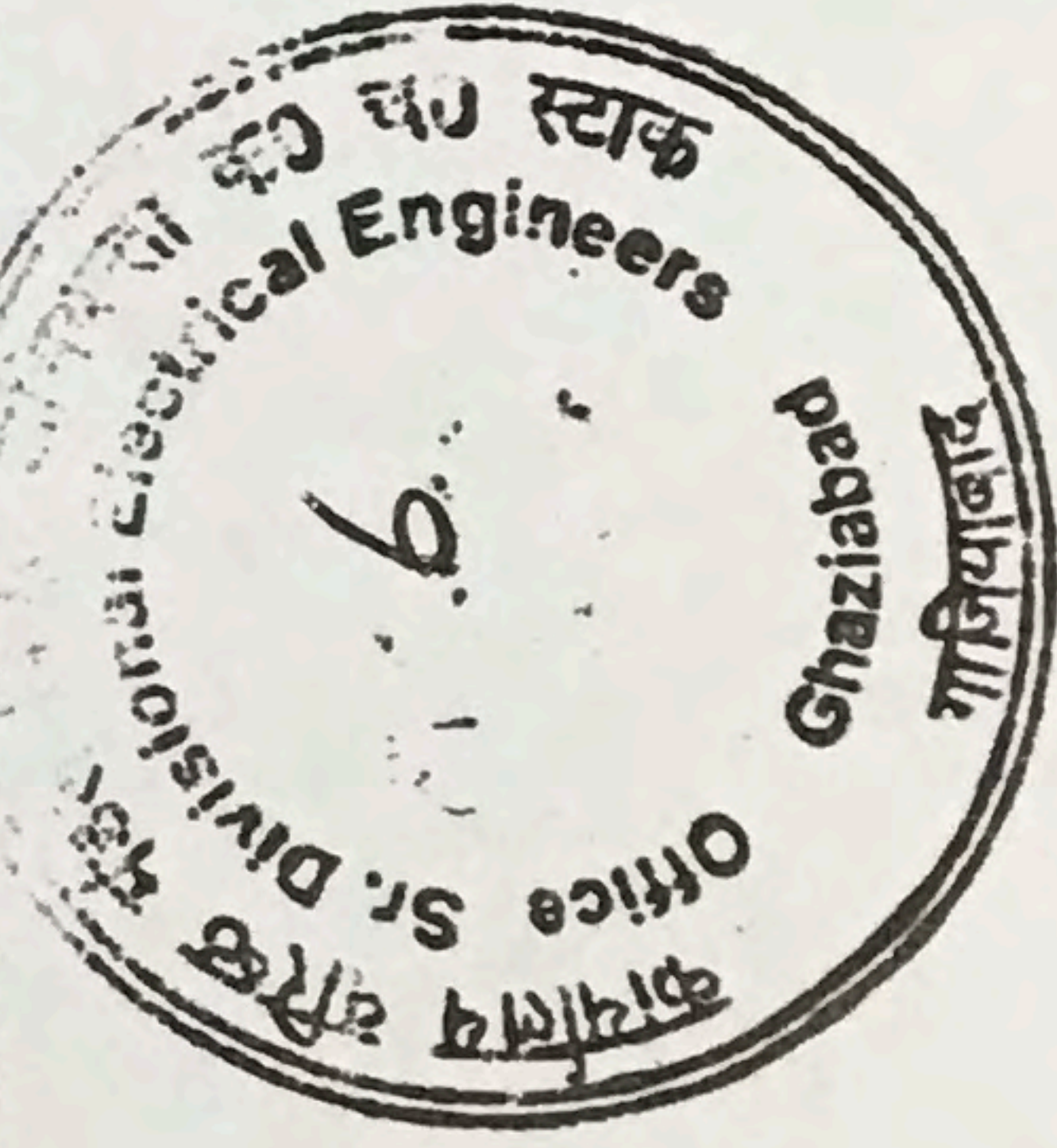
Mr. /MS.....HARI...SHANKAR...YADAV..... S/O D/O ...BHOGENDER.....

A student of (college).UNIVERSITY.OF.PETROLEUM.& ENERGY.STUDIES(DEHRADUN) branch (ELECTRONICS.+BBCT)

has undergone practical training from 27.05.2019.... to .06.07.2019..... in this organization.

His performance & conduct during the above training period was found .....*Very Good*.....

This training is imported under the curriculum of the institute of study.



*[Signature]*  
Sr. Divl. Electrical Engineer  
Electric Loco Shed  
Ghaziabad

Dated: 10/7/19



*Dated: 13-July-2019*

# *Certificate of Training*

*(Industrial Training)*

*June – July 2019*

*7 Weeks*

*at*

*Global SPS, Mohali*

This is to certify that

*RAHAT SHARMA*

Has completed Industrial Training at our GLOBAL SPS from 28<sup>th</sup> June 2019 to 13<sup>th</sup> July 2019  
His performance in training and project has been good. He has shown good dedication, a very  
Good behavior and good approach towards the Training provided and in the project assigned.  
We wish him/~~her~~ all the best for his/~~her~~ future.

*For Global SPS*

**For GLOBAL SPS**

Signed ..... *Authorized Signer*



भारत संचार निगम लिमिटेड  
BHARAT SANCHAR NIGAM LIMITED  
(भारत सरकार का उपक्रम)  
(A Govt. of India Enterprise)



कार्यालय (Office)  
महाप्रबन्धक दूरसंचार जिला श्रीनगर गढ़वाल  
उत्तराखण्ड- 246174  
General Manager Telecom District.  
Srinagar, Garhwal  
(Uttarakhand)- 246174

पंजीकरण संख्या (Regd.No):- VT/2019 / E-20/44

## CERTIFICATE OF BASIC LEVEL VOCATIONAL TRAINING IN TELECOM

Certified that *Sh./Smt./Mr.* ..... **SAKSHI UNIYAL** ..... student  
of... *University of Petroleum & Energy Studies* ..... *Dehradun* ..... Pursuing  
.... *B.Tech. [Electronics] IV Sem Year/Semester* has successfully completed Vocational  
Training of *06* Weeks, in Basic Telecom with effect from *27.05.2019* To *07.07.2019* at  
*Srinagar(Gwl) SSA BSNL*. His/Her Performance during the training has been "Excellent".

*Bharat Sanchar Nigam Limited* wishes for their bright future.

Place : Srinagar Gwl

Dated : 17-07-2019

Prepared / Checked By :-  
*(Signature)*

*(Signature)*  
Assistant General Manager(Admn.)

महाप्रबन्धक दूरसंचार जिला श्रीनगर गढ़वाल  
उत्तराखण्ड- 246174



To Whom It May Concern  
UK Visas and Immigration

11<sup>th</sup> December 2018

Dear Sir or Madam

**LETTER OF INVITATION – SHORT TERM STUDY VISA**

**Student:** Shubham  
**DOB:** 8<sup>th</sup> July 1997  
**Nationality:** Indian  
**Passport number:** ~~XXXXXXXXXX~~  
**Course:** BEng Electronic Engineering  
**Course code:** ECU132  
**Duration of visit:** 21<sup>st</sup> January 2019 – 10<sup>th</sup> May 2019  
**Coventry University Tier 4 licence number:** BDN68KDUX

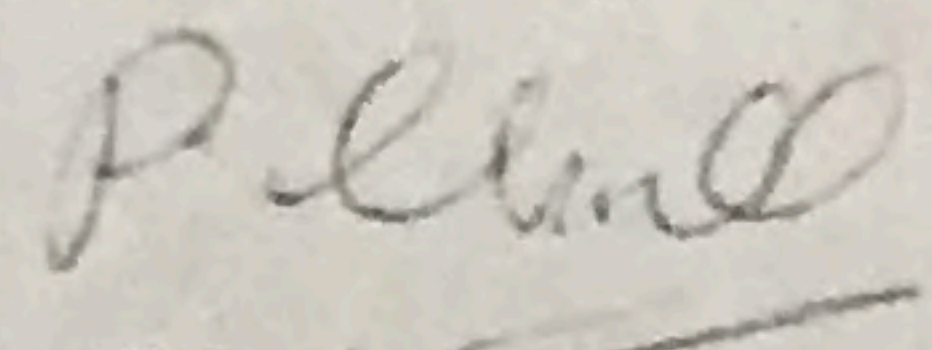
I am writing to confirm that we are inviting the above named student to join us for one academic term from 21<sup>st</sup> January 2019 to 10<sup>th</sup> May 2019 to undertake degree level study.

The above named is a full time student of University of Petroleum & Energy Studies, Uttarakhand, India. By agreement with them under the Study Abroad programme, Coventry University has accepted Shubham as a student for one academic term. After the term the student will be returning to their studies at University of Petroleum & Energy Studies, Uttarakhand, India.

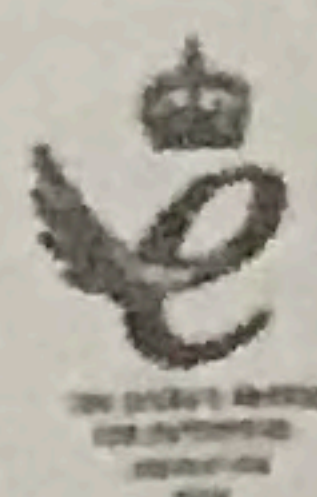
The visa is issued for a period of 6 months and students must return home within 30 days of the end of their period of study in the UK, or before the expiry of their visa, whichever is sooner.

We would be grateful if you could assist the student with their application for a short term study visa accordingly. If you should require any further information on this student please email [international.eec@coventry.ac.uk](mailto:international.eec@coventry.ac.uk)

Yours faithfully,

  
Pav Thind  
International Student Support  
International Office

INTERNATIONAL OFFICE  
COVENTRY UNIVERSITY



Gold for outstanding  
teaching and learning  
Teaching Excellence  
Framework (TEF)

Ranked No.12  
UK University  
Guardian University  
Guide 2019

1st for overseas  
student experiences  
Based on the number of student  
trips abroad - HESA 2014/15

Top 4 for Student  
Experience  
The Times and Sunday Times  
Good University Guide 2017



Dated: 18<sup>th</sup> July, 2019

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Ms. Aarohi saxena C/O- Mr Anand saxena, from UPES; Dehradun has done her training from 3<sup>rd</sup> june to 18<sup>th</sup> july 2019 in our Organization. During this period she has worked in quality testing and control department at Halonix Technologies Private Limited, Haridwar.

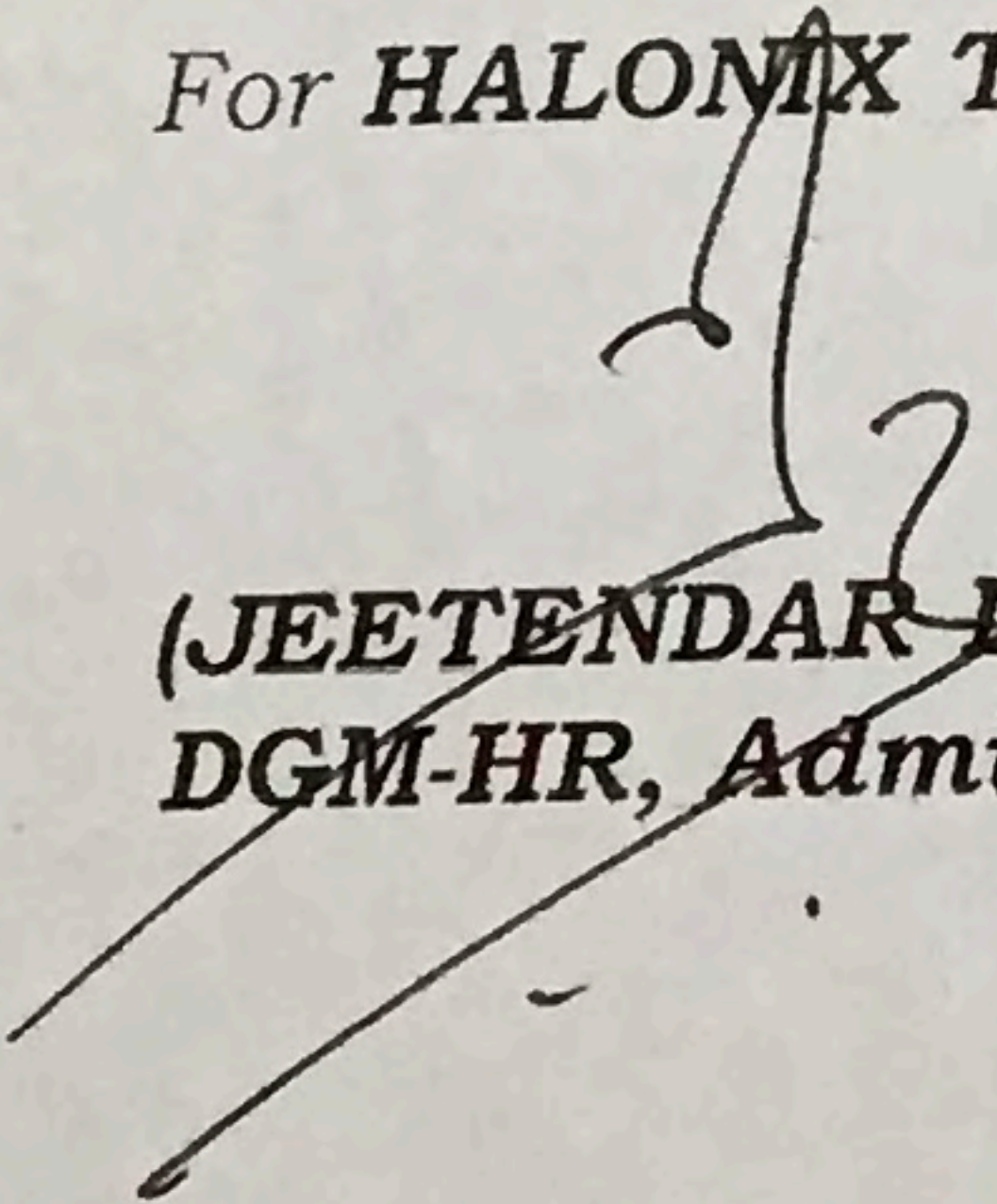
Her performance during the tenure was good and she was able to achieve the desired deliverables.

We wish her success in her future Endeavour.

Thanking You,

Yours Truly,

For **HALONIX TECHNOLOGIES PRIVATE LIMITED**

  
(JEETENDAR DAS)  
DGM-HR, Admin & EHS

**Halonix Technologies Pvt. Ltd.**

**Registered Office :**

B-31, Phase-II, Noida,  
Distt: Gautam Budh Nagar, Uttar Pradesh - 201305  
Tel: +91 120 4756100 | Fax: +91 120 4756101  
**CIN - U29268UP2009PTC036903**

*\* Formerly known as Halonix Technologies Limited*

**Manufacturing Unit :**

Plot No. 5, Sector-12, IIE, SIDCUL  
Haridwar, Uttarakhand - 249403  
Tel : +91 9568152111 | Fax : +91 01334 230696

**E-mail:** [customercare@halonix.co](mailto:customercare@halonix.co)

**Website:** [www.halonix.co](http://www.halonix.co)



July 11, 2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, the project entitled **SAS Analytics lifecycle and Real-world Applications** was submitted by **Harsh Gupta** to **SAS India Pvt. Ltd.**, towards the requirement of internship period 3<sup>rd</sup> June to 10<sup>th</sup> July 2019. He has completed his project satisfactorily and successfully under the supervision and guidance of Mr. Abhinav Sood.

During his internship, he has worked on:

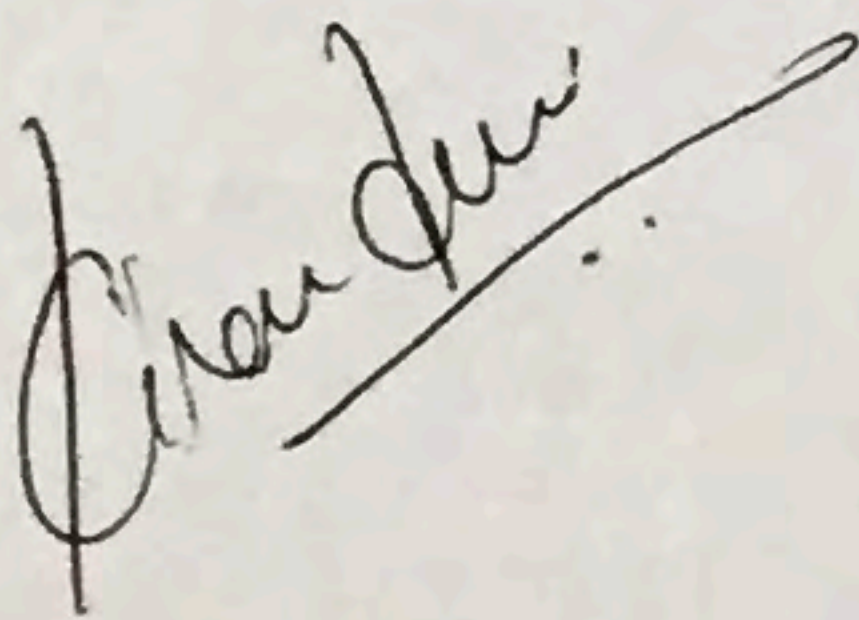
1. Data Quality and Imputation
2. Linear regression
3. Visualization

Overall objective of making him understand the Analytics lifecycle and real-world Applications is achieved.

During his tenure with us, we found him to be sincere, dedicated and committed.

We wish him success in his future endeavors.

**For SAS Institute (India) Private Limited**



**Kiran Rai**



**Senior Manager- Human Resources**





ऑप्टो इलेक्ट्रॉनिक्स फैक्टरी  
आयुध निर्माणी बोर्ड की इकाई  
भारत सरकार, रक्षा मंत्रालय  
रायपुर, देहरादून-248 008 (उत्तराखण्ड)  
**Opto Electronics Factory**

A Unit of Ordnance Factory Board  
Government of India, Ministry of Defence  
Raipur, Dehradun - 248-008 (Uttarakhand)

दूरभाष/Tele. : 0135 - 2787101-03 फैक्स/Fax : 0135 - 2787181 ई मेल/ e-mail : olf.ofb@nic.in

सभी पत्राचार महाप्रबंधक के नाम से करें, किसी अधिकारी के नाम से नहीं।  
All correspondence to be addressed to the General Manager & not to any Officer by name.



सं. ओ.एल.एफ./स्था./Voc.Trig./ 100 /2019

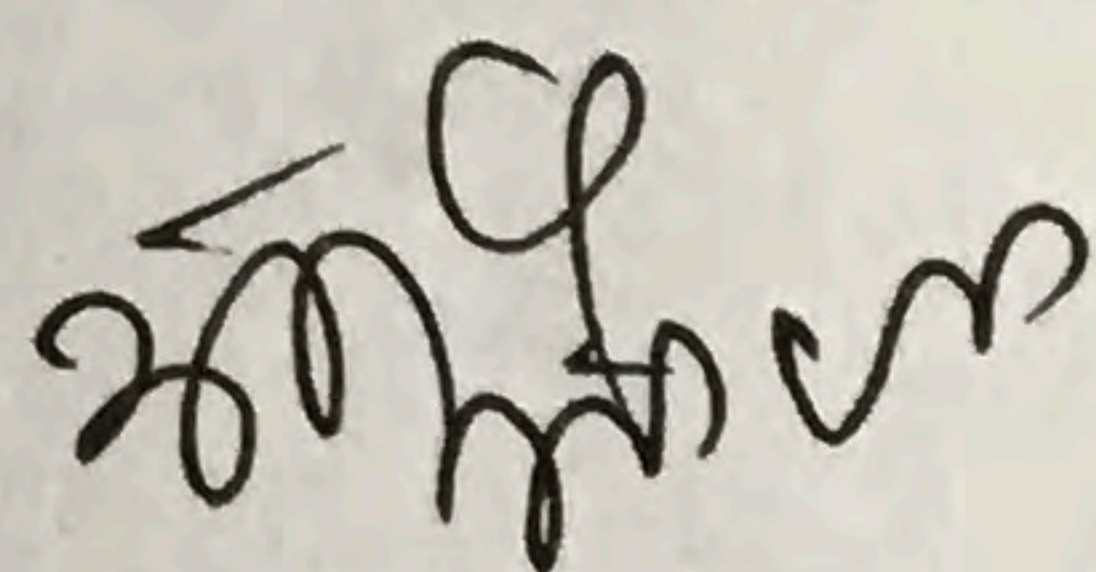
दिनांक : 12/07/2019

## व्यवसायिक प्रशिक्षण-प्रमाण पत्र

प्रमाणित किया जाता है कि श्री/सुश्री **AJAY PRATAP SINGH** जो कि **UNIVERSITY OF PETROLEUM & ENERGY STUDIES, DEHRADUN UTTARAKHAND** से **B.TECH (ELECTRONICS ENGINEERING)** व्यवसाय के छात्र/छात्रा हैं, ने ऑप्टो इलेक्ट्रॉनिक्स फैक्टरी, रायपुर, देहरादून (उत्तराखण्ड) में दिनांक 03-06-2019 से 12-07-2019 तक व्यवसायिक प्रशिक्षण सफलतापूर्वक पूर्ण किया है।

उपर्युक्त प्रशिक्षण अवधि के दौरान इनका आचरण व व्यवहार अच्छा रहा। हम इनके उज्ज्वल भविष्य की कामना करते हैं।



  
(अराधना गौतम त्यागी)  
कार्य प्रबंधक/प्रशा0  
कृते महाप्रबंधक



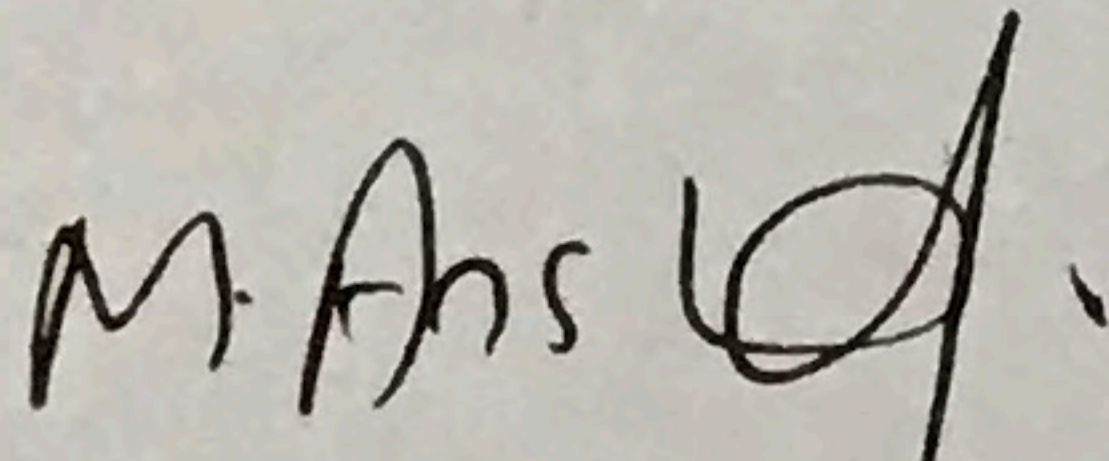
Ref. No.: PVNA/HR/2019/Internship/047

Date: July 17, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr. Ankit Kumar Singh** student of University of Petroleum and Energy Studies, Dehradun, Electronics Engineering Department has successfully completed his internship on projects "**SWG Controller and Electric Water Pump**" dated from **June 03<sup>rd</sup>, 2019 to July 17<sup>th</sup>, 2019** under the guidance of Mr. Manoj Kumar Joshi, General Manager (Electronics Design & Development).

His association with us was very fruitful and we wish him success in his future endeavors.

  
Authorized Signatory



Nº 001144

# ITTM

(A UNIT OF MTNL DELHI)



## Institute of Telecom Technology & Management

This is to certify that Mr./Ms. Harsh Verman, a student of

University of Petroleum & Energy Studies, Dehradun has  
successfully completed Six weeks Industrial Training in our organization with effect from 10 / 06 / 2019

He / She was found enthusiastic and sincere in learning during the entire training period

We wish him/her success in all future endeavors

S.D.E (TRG.)

D.E. (TRG.)

Principal General Manager (Trg.)

Enrolment No. 190408

Registration NO. 15

DATE 19-07-2019

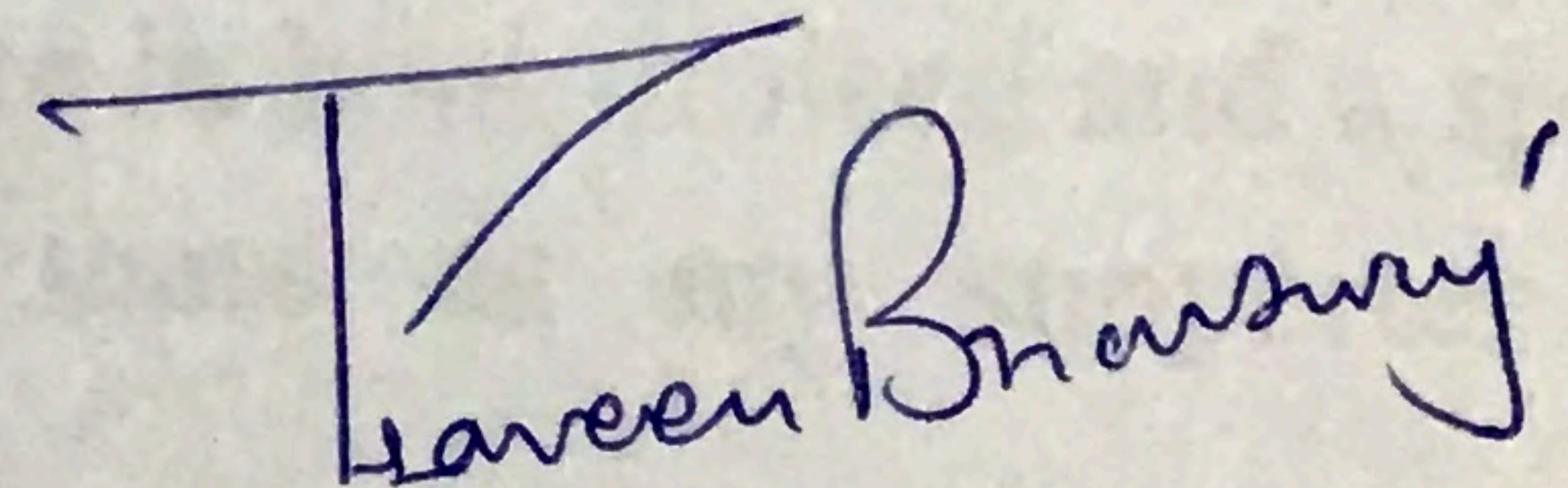
MTNL Sanchar Bhawan, Shadipur, Delhi-110008



# Certificate

---

This is to certify that this report on “**Industrial Training**” is bonafied work of **Miss Sakshi Srivastava** of **University Of Petroleum And Energy Studies**, Enrolment No. – R790216006, Sap ID – 500055065, which was carried out during Industrial Internship at “**Mahanagar Telecom Nagar Limited**” from 10th June 2019 to 18th July 2019.

  
Praveen Bhardwaj

Mr. Praveen Bhardwaj  
(PRAVEEN BHARDWAJ)

S.D.E. (Training)  
ITTM, MTNL  
T.E. Bldg., Shadipur, New Delhi-08





भारत हेवी इलेक्ट्रिकल्स लिमिटेड रानीपुर, हरिद्वार

BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARIDWAR

TRAINING CERTIFICATE

Registration No. : HWR/HRDC/201900242

Certificate No. : HWR/HRDC/201901141

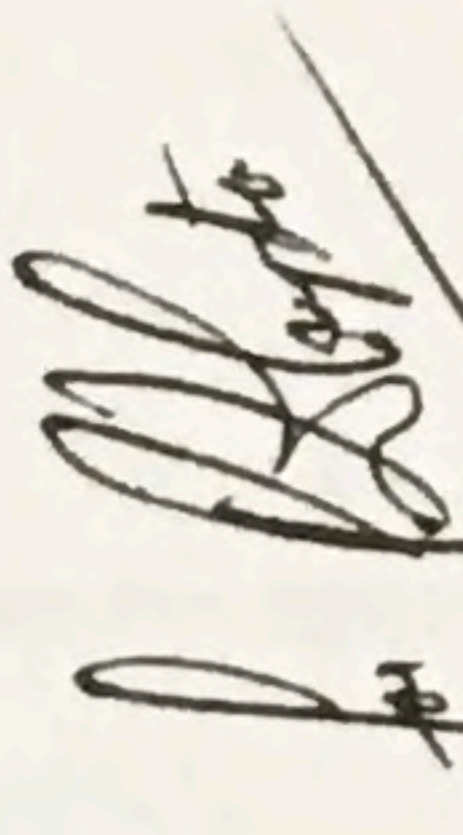
Mr SHUBHANKAR VERMA Son/Daughter/Wife of Shri SUMAN PRAKASH VERMA , Student of UNIVERSITY OF PETROLEUM & ENERGY STUDY, DEHRADUN (UTTARAKHAND) , ELECTRONICS ENGINEERING Branch has undergone Vacational Training in BHARAT HEAVY ELECTRICALS LIMITED, HARIDWAR from 06.06.2019 to 20.07.2019.

The area of training was **BASIC KNOWLEDGE OF CNC MACHINE DRIVE AND PLC (CNC BL-1)**

The performance of the trainee during the above training period was **VERY GOOD.**

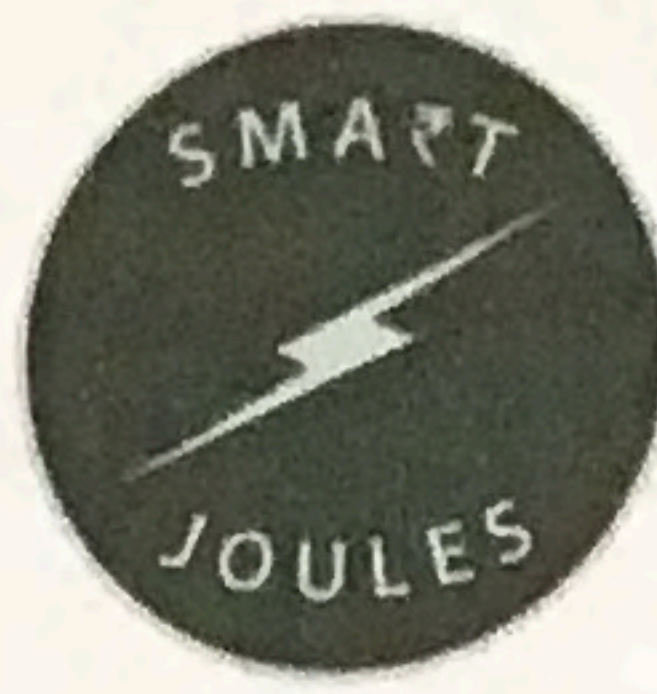
Date : 20.07.2019

  
(Checked by)

  
(Section Incharge)  
मन्जु शुक्ला  
अभिज्ञता

मान्य संस्था  
बी.एच.ई.





June 30, 2019

To Whomsoever It May Concern:

This is to certify that Arjun Vishwakarma pursuing his BTech in Electronics and Communication Engineering from University of Petroleum and Energy Studies, Dehradun has successfully completed 40 days of his internship and training with Smart Joules Pvt. Ltd. His internship tenure is from 20th May 2019 to 30th June 2019.

As an Embedded System Hardware Intern with Mr. Akshit Singhal (Embedded System Engineer), he worked in the project Joule Sense with LAN.

He has worked effectively and efficiently for performing each task assigned to him throughout his internship period.

We wish the very best for all his future endeavors.

Sustainably,

Arjun P Gupta  
Founder and CEO  
Smart Joules Pvt. Ltd.

**Smart Joules Pvt. Ltd.**

Regd. Office: 34 Shri Ram Road, Civil Lines, Delhi – 110054

CIN.: U40300DL2014PTC273904

[www.smartjoules.in](http://www.smartjoules.in); [info@smartjoules.in](mailto:info@smartjoules.in); +91-9811103484



**Ref: - HTPL/HR/UK/HDR/2019**

**Dated: 18<sup>th</sup> July, 2019**

**TO WHOM SO EVER IT MAY CONCERN**

*This is to certify that Mr. Aakarsh Kislay C/O- Mr. G.K Prasad, from UPES; Dehradun has done his training from 3<sup>rd</sup> June to 18<sup>th</sup> July 2019 in our Organization. During this period he has worked on Bluetooth enable Speaker Bulb at Halonix Technologies Private Limited, Haridwar".*

*His performance during the tenure was good and he was able to achieve the desired deliverables.*

*We wish him success in his future Endeavour.*

*Thanking You,*

*Yours Truly,*

**For HALONIX TECHNOLOGIES PRIVATE LIMITED**

**(JEETENDAR DAS)**  
**DGM-HR, Admin & EHS**

**Ref: - HTPL/HR/UK/HDR/2019**

**Halonix Technologies Pvt. Ltd.**

**Registered Office :**

B-31, Phase-II, Noida,  
Distt: Gautam Budh Nagar, Uttar Pradesh - 201305  
Tel: +91 120 4756100 | Fax : +91 120 4756101  
**CIN - U29268UP2009PTC036903**

*\* Formerly known as Halonix Technologies Limited*

**Manufacturing Unit :**

Plot No. 5, Sector-12, IIE, SIDCUL  
Haridwar, Uttarakhand - 249403  
Tel : +91 9568152111 | Fax : +91 01334 230696

**E-mail: [customercare@halonix.co.in](mailto:customercare@halonix.co.in)**

**Website: [www.halonix.co.in](http://www.halonix.co.in)**





सेल SAIL

भिलाई इस्पात संयंत्र  
BHILAI STEEL PLANT

मानव संसाधन विकास विभाग

HUMAN RESOURCES DEVELOPMENT DEPARTMENT

प्रमाणपत्र

CERTIFICATE

पंजीयन क्र.

Regn. No. P-19/9105

प्रमाणित किया जाता है कि श्री / कुमारी

Abhishek Kumar

This is to certify that Shri / Ku.

सेमेस्टर विद्यार्थी

Seventh.... Sem., student of

B.Tech of ...UPES, Dehradun... (E&I)

College / Institute

कालेज / संस्थान

ने अवकाश कालीन प्रशिक्षु के रूप में दिनांक

से

तक प्रशिक्षण प्राप्त किया ।

has undergone project based training from

03/06/2019

to 29/06/2019

प्रोजेक्ट

Project ..... Report on "Telephone exchange and general communication system"

इस अवधि में उनका कार्य निष्पादन

His / her performance during the training period has been

Good

रहा ।

भिलाई, दिनांक

Bhilal, Dated..... 29/06/2019

Dr. General Manager (HRD)  
Bhilal Steel Plant

*[Signature]*

*[Signature]*

प्रभारी (प्रशिक्षण)  
MUKUL SAHARIA  
In-charge (Training)  
Bhilal Steel Plant





सेल SAIL

भिलाई इस्पात संयंत्र  
BHILAI STEEL PLANT

मानव संसाधन विकास विभाग

HUMAN RESOURCES DEVELOPMENT DEPARTMENT

प्रमाणपत्र

CERTIFICATE

पंजीयन क्र.

Regn. No. P-19/9/106

प्रमाणित किया जाता है कि श्री / कुमारी

This is to certify that Shri / Ku. ....

Sahil Choudha

सेमेस्टर विद्यार्थी

Seventh Sem., student of

BTech of UPES, Dehradun

(E&I)

College / Institute

कालेज / संस्थान

ने अवकाश कालीन प्रशिक्षु के रूप में दिनांक

से

तक प्रशिक्षण प्राप्त किया ।

has undergone project based training from

03/06/2019

to 29/06/2019

प्रोजेक्ट

Project Report on "Telephone exchange and general communication system"

इस अवधि में उनका कार्य निष्पादन

His / her performance during the training period has been

Good

रहा ।

भिलाई, दिनांक

Bhilai, Dated

29/06/2019

Dy. General Manager

Bhilai Steel Plant

MUKUL SAHARIA  
प्रभारी (प्रशिक्षण)  
Asstt. General Manager (Training)  
BHILAI Steel Plant





**31-July-2019**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Tiyaasha Dhawa, a student of University of Petroleum and Energy Studies, Dehradun has successfully undergone summer training at Bechtel India Pvt. Ltd, Construction from 03-Jun-2019 to 31-Jul-2019.

We found Tiyaasha Dhawa to be sincere and hardworking with satisfactory conduct.

We wish Tiyaasha Dhawa all the best for future endeavors.

**Aparnesh Singh**  
**Regional HR Manager**





# WADIA INSTITUTE OF HIMALAYAN GEOLOGY

33 General Mahadeo Singh Road, Dehradun (India) – 248001



This is to certify that

**Mr BALENDU BHUSHAN MISHRA**

Of

**University Of Petroleum and Energy Studies  
Bidholi, Dehradun.**

Has successfully completed Summer Internship on the project titled

**“A REVIEW OF THE SEISMICITY AND SEISMOTECTONICS OF KISHTWAR REGION THROUGH  
DELINEATING MOMENT TENSOR SOLUTION BY USING ISOLA”**

**From 1<sup>st</sup> June to 1<sup>st</sup> August, 2019**

Place: Dehradun

**Date: 1<sup>st</sup> August 2019**

**Dr.Sushil Kumar**  
**Scientist „F“**  
**(Supervisor)**





## OGD Services Limited

(f.k.a., Essar Oilfield Services India Limited)

Registered Office

Tower - II

Equinox Business Park

L. B. S. Marg

Kurla (West)

Mumbai - 400 070

Maharashtra, India

Corporate Identity Number

U93090MH2006PLC163779

T + 91 22 6660 1100

F + 91 22 2354 4312

E: [contact@ogdservices.co.in](mailto:contact@ogdservices.co.in)

Date: 3<sup>rd</sup> August, 2019

### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. Bikramjeet Singh Bakshi, student of University of Petroleum and Energy Studies Energy Acres, PO Bidholi, Via Prem Nagar Dehradun, Uttarakhand-248007, has successfully completed an internship at our Land Rig Drilling Project from 01<sup>st</sup> July, 2019 to 31<sup>st</sup> July, 2019

During the period of his internship, he was imparted training in the Optimization of Drilling Fluid Parameters in CBM Wells. He has submitted a detailed report upon completion of this training.

For OGD Services Limited

Authorize Signatory





**Internship Report**

**On**

**Study on Evaluation of Coal Bed Methane(CBM) Resource  
Potential Evaluation and its Production Techniques**

**(03-06-2019 to 05-08-2019)**

Submitted by:

**ANVESHKA SHANKER**

**Geoscience Engineering(2016-2020)**

**University of Petroleum and Energy Studies, Dehradun**



**CSIR-CENTRAL INSTITUTE OF MINING AND FUEL RESEARCH**

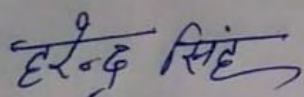
**BARWA ROAD, DHANBAD-826015**

**AUGUST, 2019**



### CERTIFICATE

This is to certify that the Internship report titled '**Study on Evaluation of Coal Bed Methane(CBM) Resource Potential Evaluation) and its Production Techniques**' is submitted by **Anveshika Shanker**, B.Tech Geoscience Engineering(2016-2020), University of Petroleum and Energy Studies, Dehradun. She has completed her summer training project under my supervision and guidance with full dedication. The project report prepared by **Anveshika Shanker** is based on her work carried out by her in the scientific laboratories of CSIR-Central Institute of Mining and Fuel Research (CIMFR), Barwa Road, Dhanbad.



Signature of the Guide

Date: 5/08/2019



### ACKNOWLEDGEMENT

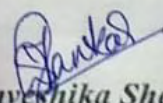
I would also like to thank **Dr. Pradeep K Singh**, Director, CSIR- CIMFR, who provided me with an opportunity to get hands on industry experience in the scientific laboratories of CIMFR.

I express my heartfelt thanks to my mentor, **Dr. Harendra Singh**, Senior Principal Scientist & HoS, Non-Conventional Gases Department, without whom this project would not have been successful and also for giving me the opportunity to do this work. I wish to express gratitude to him for his abundantly helpful and offered invaluable assistance, support and guidance throughout the study. I would also like to extend my thanks to **Dr. Debadutta Mohanty**, Principal Scientist, Non-Conventional Gases Division for his valuable technical insights and guidance. **Mr. Sujoy Chatteraj**, Senior Research Fellow It gives me immense pleasure to take this opportunity of expressing my sincere gratitude towards persons who directly or indirectly help in completing the entire project span.

It is inevitable to mention the kindness and helpful nature of **Dr. Sunil Kumar Khare**, **Head of the Department**, Department of Petroleum Engineering and Earth Sciences, University of Petroleum and Energy Studies. It would have not been possible to get the opportunity to do the training without his support.

I would like to extend my heartfelt gratitude to **Dr. Harinandan Kumar**, Department of Petroleum Engineering and Earth Sciences, University of Petroleum and Energy Studies, for giving me the opportunity to do the training.

Last but not the least, I would like to thank all the technical and non-technical staffs of the Non-conventional Gases Department, without whose support this project could not have been successful.



**Anveshika Shanker**

B. Tech Geoscience Engg.

(2016-2020)

UPES, Dehradun



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## **ABSTRACT**

Energy resources and its best utilization decide the industrial growth and prosperity of a country. Coal is a basic source of energy for industrial development in the world. The gas found in coal is also a source of energy which is being utilized to a great extent these days and this gas is known as coalbed methane because methane is the dominant constituent in all the gases present in it.

Methane is one of the potent greenhouse gases and a clean source of energy.

Coal Bed Methane (CBM) is a hydrocarbon gas found mainly adsorbed on the surface of micropores of coal. It is also found in free-state in macropores and a very small amount is dissolved in associated water. CBM generation and in-place-gas content are deciding factors for CBM exploration. These are guided by various petrography and geological factors like adsorption capacity, place-gas and gas generation are also controlled by permeability, microspores, the action of micro-organism, reservoir pressure, hydrodynamics of the area, cleat aperture, width and extension, fault, etc.

Continuous extraction of conventional sources and increased demand for clean energy has forced India to hunt for alternatives to conventional energy sources. Intense importance has been given to finding out more and more energy resources; mainly non-conventional sources like CBM, shale gas & gas hydrates, as gas is less polluting compared to coal & oil. CBM is considered to be one of the most viable alternatives to combat the situation. With growing demand and rising oil prices, CBM is definitely a feasible alternative energy source.

Working in CSIR-CIMFR has been a great opportunity for me. I have been able to learn about coal and various experiments done in the institute. I had the honour to visit the Rock Mechanics Lab and see the core and also do borehole logging. I have gained vast information on CBM and have performed Adsorption Isotherm Testing for the determination of in situ gas content. I have also performed proximate analysis on the coal samples. All my readings are included in the report.



# CHAPTER- 1

## INTRODUCTION TO COAL

Coal is a heterogeneous material essentially comprised of fossilized carbon that has been originated from organic materials which got accumulated in low-lying areas or sedimentary basins to form a soft, spongy sediment called *peat*. The parent organic material is typically vegetative in origin. It consists of trees, plants, roots, branches, pollen and spores. As time passes the organic materials undergo a process termed as *humification*, in which the organic materials are transformed into organic residue through decomposition under suitable anaerobic and acidic condition (N.Berkowitz, *An Introduction to Coal Technology*).

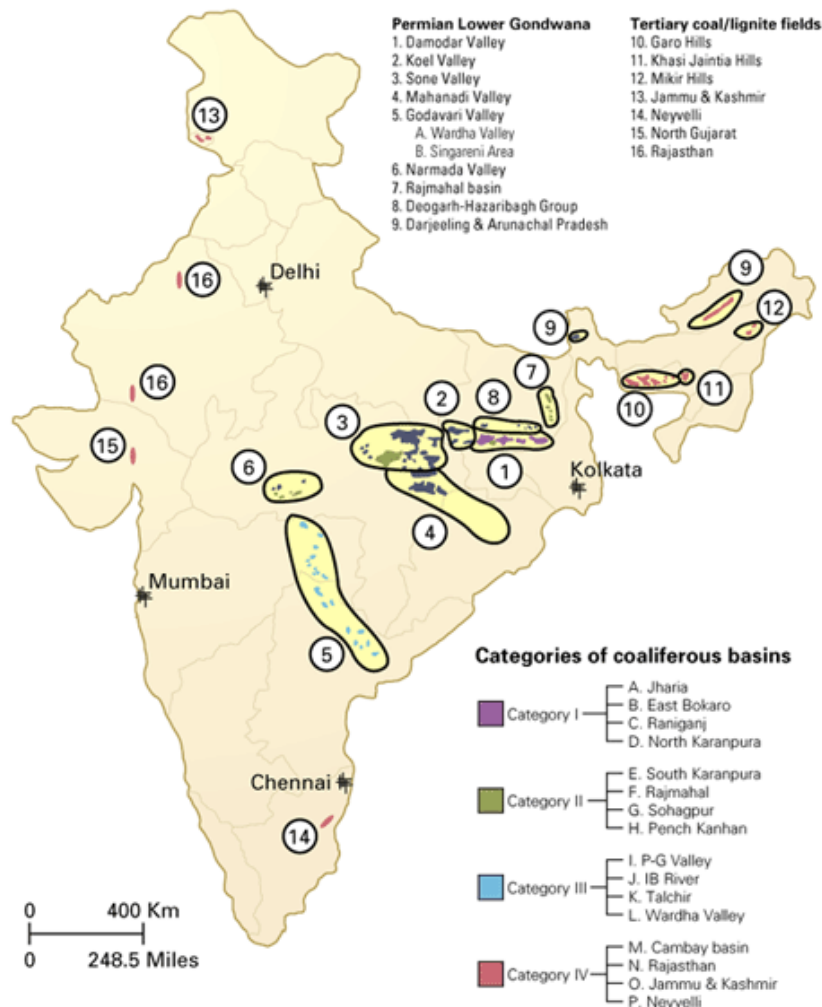
Vast deposits of coal originate in former wetlands called coal forests that cover much of the Earth's tropical areas during the late carboniferous (Pennsylvanian) and Permian times.

As a fossil fuel, coal supplies about a quarter of the world's primary energy and two-fifths of its electricity. Coal is used in most of the iron and steel industries also. On the dark side, coal damages our environment. As it is the largest anthropogenic source of carbon dioxide it is also responsible for climate changes. Due to these problems many countries have stopped or reduced the use of coal. The largest consumer and importer of coal is China, China mines almost half the world's coal followed by India and Australia.



**Fig. 1- Top 10 Coal Producing Countries(Source:google.com)**





**Fig. 2 : India's Coal Basins and Fields**(Source:Coal Atlas of India)

## 1.1 Origin of coal

### 1.1.1In-situ theory

According to this theory, the coal seams are observed where once forest grew. As the land was sinking slowly, the accumulated vegetation matters went under water slowly and did not decompose and destroyed. In the course of time, the rate of sinking of land was increased and coal forest was submerged under water. Again, land along with the coal forest emerged out of water after sufficient time and this cycle went on again and again, which is responsible for formation of coal strata and seams. The evidence of this phenomenon is observed in the coal



seam that the stem of fossil trees is found standing erect with their roots protruding into the under clays. The uniformity in thickness and composition of coal seams over wide areas suggests that the deposition of plant material took place in still water.

### **1.1.2 Drift theory**

This theory tells that the plant material was transported with the stream of water from one place to another, and finally get deposited in a place of swamp having suitable condition like sediments. The coal seams of India are of drift origin. The evidence of drift theory that the rocks associated with coal seams are of distinctly sedimentary. The coal seam itself behaves like sedimentary bed and they are observed to branch out. It is assumed that, at least some of the natural graphite are produced from anthracite by the effect of very high temperature.

Although samples of each rank of coal have distinct physical and chemical characteristics, the border line between two consecutive ranks of coal is difficult to determine. The first four samples in the series have a nearly continuous gradation of a given physical and chemical properties, such as moisture content, carbon content, heat content etc. Peat is the result of insufficient transformation. The composition and properties of peat vary greatly from one place to another, depending on the nature and type of the original plant material and extent of decay. It contains very large amount of water. Peat is not regarded as coal, but it is an important fuel in those countries which have large deposits of peat. It is mainly used as domestic fuel. Moreover, peat briquettes are largely used in steam boilers, power station and gas producers. It ignites easily with a long flame.

Lignite may be termed as brown coal, is lowest in coal rank and readily identified by its colour and texture. It is soft, has a woody and amorphous nature. Lignite breaks in slabs after long time exposure to weather. It is characterised by a high percentage of moisture, ranging from 30-50% with high oxygen content.

## **1.2 Factors affecting Coal formation**

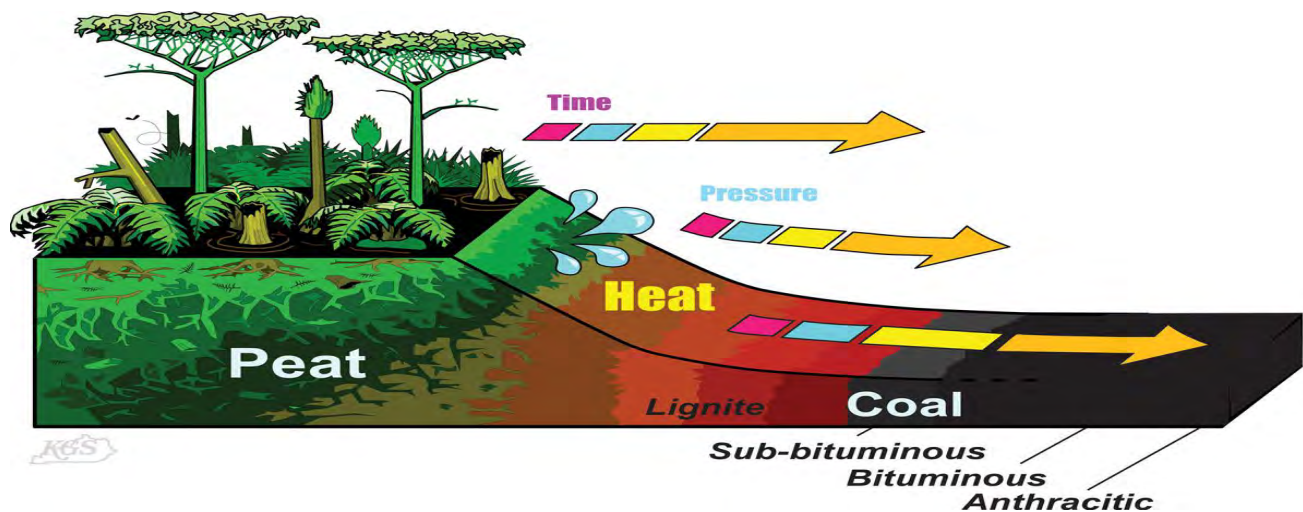
There are several factors affecting coal formation

- Nature and chemical composition of source plants.
- Climate
- Paleogeography
- Depositional environment
- Tectonic setting
- Time



### 1.3 Coalification

Coal is a sedimentary rock which is progressively developed during biochemical decomposition of plants substances and metamorphic transformation. In geologic past, the earth had dense forests. Due to natural disasters like flooding, soil erosion tsunami etc these forests were buried under the soil. More and more soil got deposited over them and they get compressed. The temperature rose and they sank deeper and deeper. Therefore, they aren't affected by biodegradation, oxidation, mud, acidic, water and the carbon is trapped in the deeply buried sediments under high temp and high pressure dead vegetation was slowly converted to coal and this process is called Carbonization. When the coal is formed from biomass which is decayed, compressed, hardened, because the heat and pressure over geologic time. This process is called *coalification*. Coalification includes stage from the burial of plants to the formation of coal. The early stage of coalification from peat to brown coal is mainly controlled by low temperature and pressure. The later stage is from brown coal to bituminous and anthracite coal, which is mediated by higher temperature and pressure, physical and chemical process. With increasing time, temperature and pressure coal progress through various stages from peat to lignite, sub bituminous and ultimately to anthracite. As thermogenic stage advances, the percentage of oxygen is progressively decreased due to loss of water resulting in increased percentage of carbon, hydrogen percentage remain almost constant until coal attains 92% of carbon. The overburden pressure and temperature gradient are sufficient in transformation of plants materials into coal. This is the evident from the fact that with depth the maturity of coal seams increase.



**Fig. 3:** Coalification Process(Source: Kentucky Geological Society)

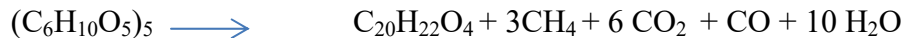


### **1.3.1 Biochemical process**

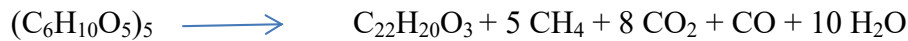
Biochemical decomposition of plant material takes place due to atmospheric oxidation by fungi and also by aerobic bacteria. The plant debris are converted into the precursors of the coal micro constituents and the main controlling factors for such biochemical transformation are hydrogen ion (pH) concentration and redox (Eh) potential of the medium. In anaerobic conditions the protoplasm, protein, lignin cellulose etc. are decomposed and transformed.



Cellulose                                      Bituminous coal



Cellulose



Cellulose                                      Bituminous coal

From the above reactions it is clear that biogenic gas is produced by the decomposition of organic matter by microorganism generated in peat and swamps. The breakdown of organic matter leading to methanogenesis is performed in a complex series of processes by a diverse population of microbes, each of which contributes to the partial oxidation of organic matter. The major requirements for the generation of significant amount of biogenic gas are: anoxic environment, low sulphate concentration, low temperature, abundant organic matters, high pH, adequate pore space and sedimentation.

### **1.3.2 Thermogenic process**

With increasing time, temperature and pressure, coal progresses through various stages from peat to lignite, sub – bituminous and ultimately to anthracite. As thermogenic stage advances, the percentage of oxygen is progressively decreased due to loss of water resulting in increased percentage of carbon. Hydrogen percentage remains almost constant until coal attains carbon percentage of 92%. The accumulated vegetable matters are accumulated and are subsequently transformed into coal by pressure and temperature. The overburden pressure and temperature gradient are sufficient in transforming plant material into coal. This is evident from the fact that with depth the maturity of coal seams increases.

Thermogenic coal bed gas generation results from devolatilisation of the coal beds. With increasing coalification resulting from higher temperature and pressures, coal becomes enriched in carbon as large amounts of volatile matter rich in hydrogen and oxygen are released.

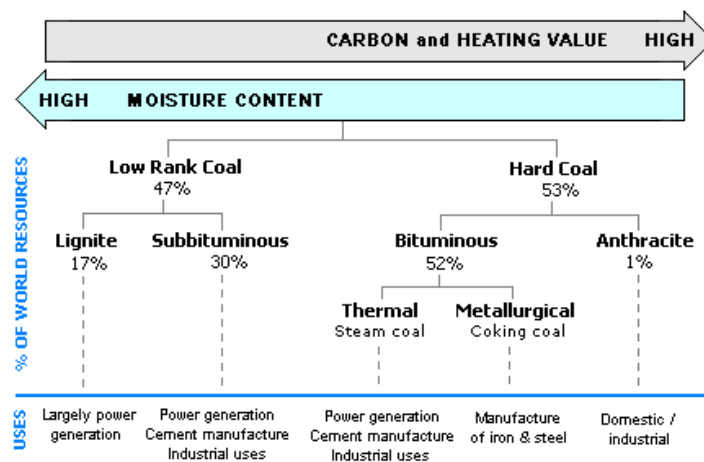


## 1.4 RANK OF COAL

Rank of coal is based on the degree to which the transformation of organic matter into coal has occurred and can be seen as a rough indication of how old the coal is: generally older the coal, higher the carbon content. The coal with the highest carbon content is the best and cleanest coal to use.

### 1.4.1 Anthracite Coal

Anthracite coals are high rank coals. They are shiny (glassy) and break with a conchoidal (glass-like) fracture. Most coals do not reach anthracite rank, which requires high heat from very deep burial, tectonic metamorphism, or contact metamorphism with igneous intrusions. The anthracite rank is divided into three parts; semi-anthracite, anthracite, and meta-anthracite. Anthracite is coal with the highest carbon content, between 86 and 98 percent and with heat value of nearly 15,000 BTUs-per-pound. Anthracite is most frequently associated with home heating. Anthracite however covers only a very small segment of the world coal market. Highest Grade Coal in U.S. with low sulfur content. Anthracite is very rare in the United States and make up only 2% of overall production. The only anthracite mines in the United States are located in north eastern Pennsylvania.



**Fig.4:Rank of Coal and Energy**

Variation(Source:Citizendium)(<http://en.citizendium.org/wiki/Coal>)

### 1.4.2 Bituminous Coal

Bituminous coals are black, shiny and generally hard. The Bituminous coal is the most abundant form of coal in the world. Bituminous coal is primarily used to generate electricity and make coke for the steel industry. Bituminous coal has a carbon content ranging from 45 to 86 percent carbon and a heat value of 10,500 to 15,500 BTUs-per-pound. It is also the most



abundant rank of coal found in the United States, accounting nearly half of U.S. coal production. However, Bituminous coal has a high sulfur content and is thus of a lower grade than Anthracite. Example – Illinois Coal.

### **1.4.3 Sub-Bituminous Coal**

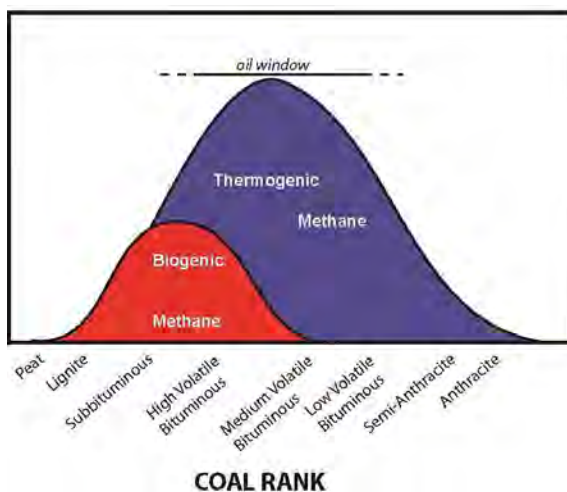
Sub-bituminous coals are transitional between lignite and bituminous coal. They are gray to black and shiny like bituminous coals. Sub-bituminous coals are sometimes referred to as black lignite. Sub-bituminous coal ranks below the bituminous coal and has 35-45 percent carbon content and heat value varying between 8,300 and 13,000 BTUs-per-pound. Although the heat value is lower for the Sub-bituminous coal, the sulfur content is typically less than other coal forms. The low sulfur content helps the coal to burn clean and makes it attractive to many end users. Over 40 percent of the coal produced in the United States is Sub-bituminous. Sub-Bituminous coal is mainly produced in the Western U.S.

### **1.4.4 Lignite Coal**

Lignite is a geologically young coal with the lowest carbon content, 25-35 percent and heat value ranging between 4,000 and 8,300 BTUs-per-pound. Lignite also called brown coal is also used for electric power generation. Mainly found in Western U.S., Lignite is crumbly and has high moisture content. About eight percent of the coal produced in the United States is lignite.

### **1.4.5 Peat**

Peat is a partial accumulation of decayed vegetation or organic matter. A mass of recently accumulated to partially carbonized plant debris. Peat is organic sediment. Burial, compaction, and coalification will transform it into coal. It has a fixed carbon content of less than 25 percent.



**Fig. 5:**Schematic showing biogenic and thermogenic gas generation in relation to coal rank and the oil window. (Modified from Moore, 2012a).



## **1.5 GRADE OF COAL**

Grade of coal defines the process comprising a series of successive changes, stages or degrees of coal. Different categories/qualities of coal are being produced by Coal India Limited (CIL). They are mainly

- Non-coking coal
- Coking coal
- Semi coking coal and weakly coking coal

where grading is based on ash and moisture %.

## **1.6 PHYSICAL PROPERTIES OF COAL**

Understanding the behaviour of coal, characterizing and understanding its physical properties is of paramount importance. The bulk properties of coal, and in particular the mechanical and thermal properties, have a significant impact on the various processes that are discussed in later chapters. In addition, the microstructure and porosity of coal are intimately involved in the complex heterogeneous reactivity of coal. In this chapter, the physical structures and properties of various coal types are described in terms of the most commonly used physical characterization techniques, including X-ray diffraction, X-ray scattering, surface area, and porosity measurement techniques. Other physical properties of coal such as optical, electrical and magnetic properties can also offer insight into the chemical structure and composition of coal. The physical properties of coal, including the mechanical, electromagnetic, and optical properties, are related to structural models of coal. The bulk thermodynamic properties of coal combustion are also introduced.

### **1.6.1 Mechanical Strength**

The mechanical strength of coal refers to its capacity to resist external forces and is related to physical properties of coal such as shatter indices and grind ability index. The mechanical strength of coal is related to factors such as the degree of coalification, lithotype, mineral content, and weathering. The mechanical strengths of high-rank and low-rank coals are greater than those of medium-rank fat coals and coking coal. In terms of the macroscopic lithotype of coal, the mechanical strength of fusain is lowest, followed by vitrain, and that of durain is the highest. The mechanical strengths of coals with high mineral contents are high, and are reduced by weathering.

### **1.6.2 Density**

Density is an important parameter, and it reflects the nature and structure of a material. The density depends on the closeness of the molecular structure and the molecular arrangement and



there is also a relationship between density and degree of coalification. The density can also be used for structural analysis of coal, using statistical methods. The coal density is the coal mass per unit volume. Coal volume has different meanings in different situations, because of the inhomogeneity of coal, so coal density has various definitions. The true relative density (TRD) of coal refers to the coal mass per unit volume, excluding the pores in the coal. It is an important indicator for calculating the average mass of a coal seam and in coal quality research. The TRD can be determined in aqueous media using a pycnometer.

### **1.6.3 Hardness**

Coal hardness reflects the coal's ability to withstand external mechanical actions. The representation and determination of coal hardness differ depending on the applied mechanical force. The scratch hardness (Mohr's hardness) is the relative hardness determined by scratching the coal surface with 10 types of standard mineral. The scratch hardness of coal is usually between 1 and 4. Coal hardness is related to coalification. Lignite, which has a low coalification degree, and coking coal, with medium coalification, have the lowest scratch hardnesses of 2–2.5, whereas anthracite has the highest scratch hardness that is close to 4. The micro Vickers hardness is referred to as the microhardness (symbol MH or Hm). It is determined by pressing a diamond indenter with a static load into the maceral under a microscope. The greater the indentation is, the lower the microhardness of the coal. The value of the microhardness is expressed by the load capacity per contact area between the indenter and the coal (in kilograms per square millimeter). The microhardness determined by the indentation method is widely used in the study of coal chemistry.

### **1.6.4 Porosity and Permeability of Coal**

Porosity is difficult to describe in terms of case of coal, where it constitutes a more or less integral part of the coal structures. This is not exactly measurable. Porosity is the volume of fraction of coal that may be occupied by a particular fluid. This includes large fractures, visible to unaided eye, down to intra molecular interstices beyond resolution of the most powerful microscope. The pores are generally classified as micro pores (capillaries and cavities) and macroporosity (cracks, cleats, fissures, vacant cells etc.)

Coal pores can be further classified as

- Primary Porosity
- Secondary Porosity.

The primary pores are incorporated into the coal structure during deposition while secondary porosity are formed during last stage of coalification. Porosity is the most important characteristic of coal bed reservoir. The bulk of the natural gas recoverable from coal bed reservoir is stored in the micro pore system: and the macropores network of fracture porosity provides the pathways through which reservoir fluids flow to the production well. A good

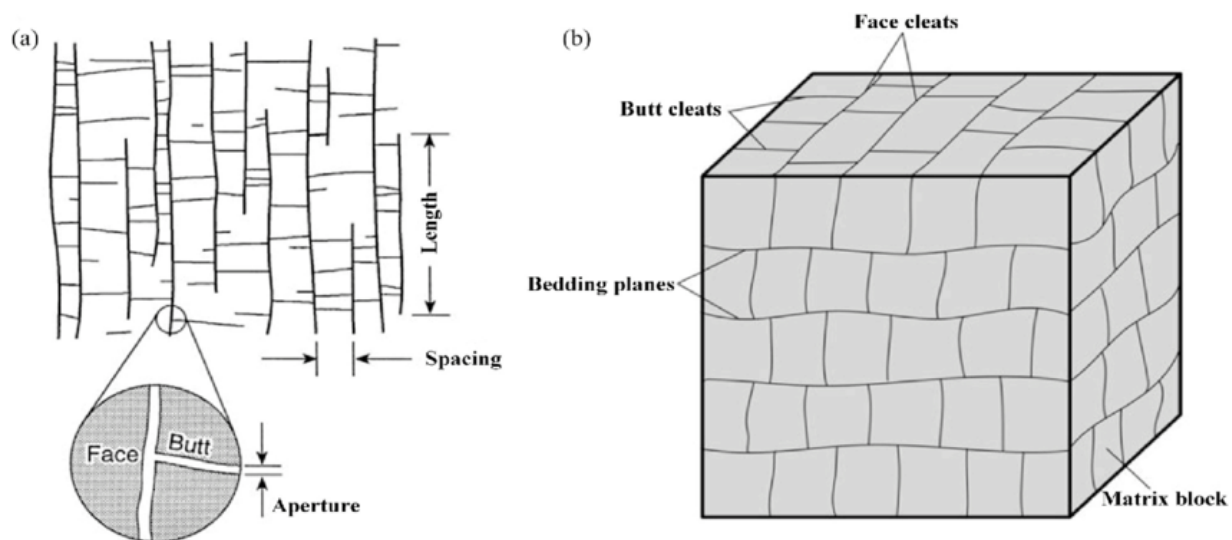


coalbed reservoir must provide, both a well-developed, accessible micropore structure and well developed and obstructed fracture porosity. Limitations of the former will reduce the gas storage capacity of the reservoir, whereas limitation in the latter will inversely influence the gas flow and production.

Permeability of the coal is also very important for commercial flow rate of methane. Permeability is not direct measurable quantity. It is affected by parameters like frequency of fractures, their interconnections, degree of fissure aperture opening, direction of butt cleat and face cleat, water saturation etc.

### **1.6.5 Cleat System**

- Exogenic Cleat : This is formed as a result of the external stresses acting on the coal seam. These include tectonic stresses, fluid pressure changes, folding and development of tensile stresses to which the coal seam is subjected during various time periods.
- Endogenetic Cleat: This is formed during the process of physical changes in the properties of the coal during the metamorphic process. Coal matter undergo density changes and a decrease in its volume. These process are associated with the changes in the internal stress system, compaction and desiccation, and the formation of the cleat plane are normal to the bedding plane of coal and generally occur in pairs. There are at least two sets of near perpendicular fractures that intersect the coal to form an interconnected network throughout a coal bed. These two factors are butt cleat and face cleats. The shorter butt cleat normally terminates at a face cleat, which is the prominent type of cleat .





**Fig. 6-** Cleat System (Source: Experimental study on physical structure properties and anisotropic cleat permeability estimation on coal cores from China(Research Gate))

### **1.6.6 Coal reflectivity**

The capacity of a polished coal surface to reflect vertically incident light is referred to as the reflective capacity of the coal. The visual performance under a microscope is the brightness of the polished surface. The reflective capacities of different coal types are different. Reflectivity is an important property of opaque minerals, and is also an important indicator of the coalification degree. The reflectivity is usually determined using a relative method: the reflected light intensity of a standard sheet with a known reflectivity is measured under a certain intensity of incident light (typically monochromatic polarized light) and compared with the intensity of reflected light of the material under investigation. Materials such as optical glasses, quartz, and diamond are commonly used as standards. As the resolution of coal in an oil medium is far better than that in air, the reflectivity is generally measured under an oil-immersion objective ( $R_o$ ).

### **1.6.7 Wettability**

When coal is in contact with a liquid, the wetting of the coal differs depending on the properties of the liquid and the coal surface, and the liquid–solid surface properties. At the intersection of a gas, liquid, and solid, the included angle between the liquid surface and the solid–liquid interface is called the contact angle,  $\theta$ . It is determined from the relative values of the interfacial tensions at the coal, liquid, and solid–liquid interfaces.

## **1.7 COAL RESERVES**

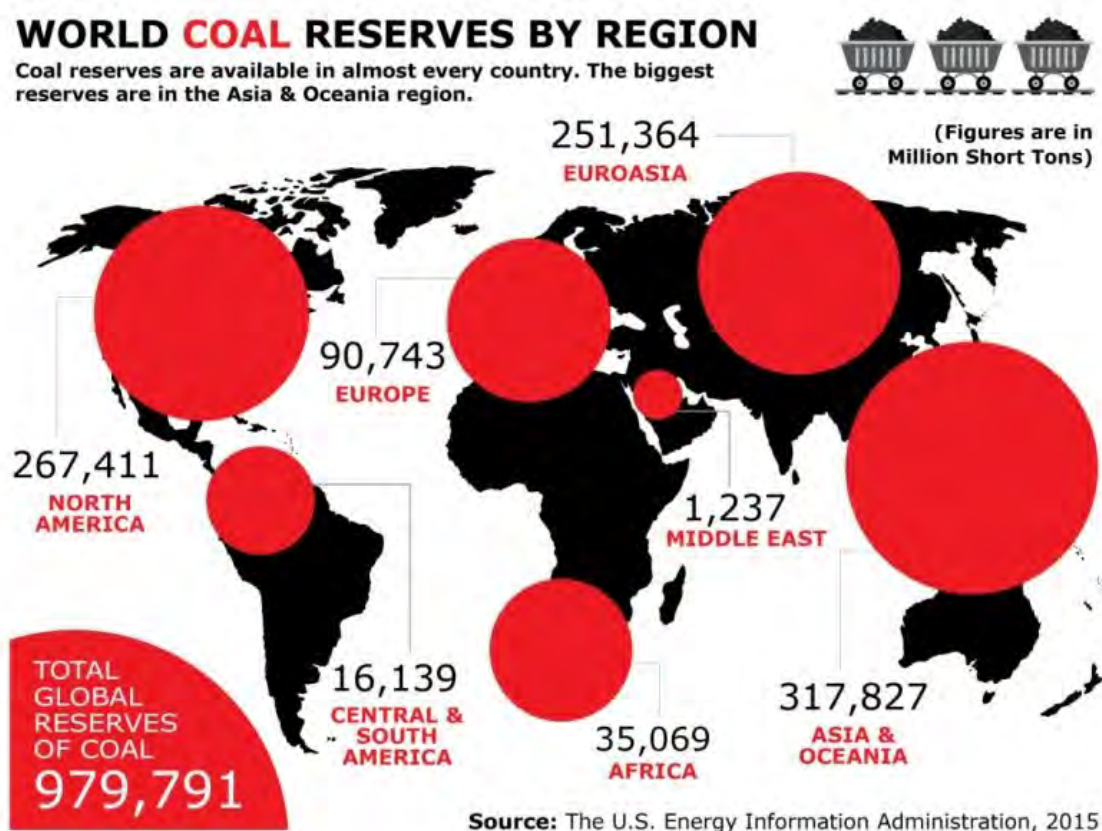
Coal reserves are available in almost every country worldwide, with recoverable reserves in around 70 countries. The biggest reserves are in the USA, Russia, China and India. There are an estimated 1.1 trillion tonnes of proven coal reserves worldwide. This means that there is enough coal to last us around 150 years at current rates of production.(World Coal Association)

India has the fifth largest coal reserves in the world. As on 31 March 2018, India had 319.04 billion metric tons (351.68 billion short tons) of the resource. The known reserves of coal rose 1.23% over the previous year, with the discovery of an estimated 3.88 billion metric tons (4.28 billion short tons). The estimated total reserves of lignite coal as on 31 March 2018 was 45.66 billion metric tons (50.33 billion short tons), a decrease of 0.96% from the previous year.

Coal deposits are primarily found in eastern and south-central India. Jharkhand, Odisha, Chhattisgarh, West Bengal, Madhya Pradesh, Telangana and Maharashtra accounted for 98.26% of the total known coal reserves in India. As on 31 March 2018, Jharkhand and Odisha had the largest coal deposits of 26.06% and 24.86% respectively.



The energy derived from coal in India is about twice that of the energy derived from oil, whereas worldwide, energy derived from coal is about 30% less than energy derived from oil. The production of coal was 675.40 million metric tons (744.50 million short tons) in 2017–18, a growth of 2.66% over the previous year. India is ranked 2nd in world coal production.



**Fig. 7-** Global Coal Reserves(Source: The U.S. Energy Information Administration)

**Table 1:** Estimated coal reserves in India by state as on 31 March 2018.(Source: Wikipedia)

<u>STATE</u>	<u>COAL RESERVES(in billion metric tonnes)</u>	<u>Type of Coalfield</u>
JHARKHAND	83.15	Gondwana
ODISHA	79.30	Gondwana
CHHATTISGARH	57.21	Gondwana
WEST BENGAL	31.67	Gondwana
MADHYA PRADESH	27.99	Gondwana
TELANGANA	21.70	Gondwana
MAHARASHTRA	12.30	Gondwana
ANDHRA PRADESH	1.58	Gondwana



BIHAR	1.37	Gondwana
UTTAR PRADESH	1.06	Gondwana
MEGHALAYA	0.58	Tertiary
ASSAM	0.53	Tertiary
NAGALAND	0.41	Tertiary
SIKKIM	0.10	Tertiary
ARUNACHAL PRADESH	0.09	Tertiary
INDIA	319.04	

## **1.8 USES OF COAL**

The coal industry has two principal markets, namely thermal coal or steam coal (i.e. for energy use, including power generation and cement manufacturing sectors), and metallurgical coal or coking coal (principally for steel making) but there are also other coal uses, including conversion into gas or other energy and chemical products ([Dave Osborne, The Coal Handbook: Towards Clener Production](#)).

Some other important uses of coal includes

- alumina refineries,
- paper manufacturers and
- the chemical and pharmaceutical industries.

Apart from this, several chemical products can be produced from the by-products of coal. For example, refined coal tar is used in the manufacture of chemical, such as creosole oil, naphthalene, phenol and benzene. Ammonia gas recovered from coke ovens which are used to produce ammonia salts, nitric acids and agricultural fertilizers. Thousands of different products such as soap, aspirins, dyes, plastics and fibres (rayon & nylon) have coal or coal by-products as a components.

- Coal is also an essential ingredient in the production of specialist products.
- Activated carbon is used in filtering water, air purification and also in kidney dialysis machines.
- Carbon fibres- an extremely strong but light weight reinforcement material used in construction, mountain bikes and tennis rackets. Silicon metal-used to produce silicones



and silicate, which are in turn used to make lubricants, water repellents, resins, cosmetics and toothpastes.



Fig8: Coal Sample ( Source: Google Images)



## **CHAPTER-2**

### **COALBED METHANE (CBM)**

Coalbed Methane/Coal Bed Methane (CBM), Coalbed Gas (CBG), or Coal Mine Methane (CMM) is a form of Natural Gas found in coal beds. CBM is natural gas that is produced during coalification process. It is then stored on the many surfaces of the coal. The methane is usually held in place by water pressure. CBM is generated by microbial (biogenic) or thermal (thermogenic) processes shortly after burial, and throughout the diagenetic cycle resulting from further burial. The main constituent of this thermogenic gases is methane.

This is the product that evolves during the process of coalification generally more in quantity than the coal can hold. Some of the gas escapes in the surroundings but some of it lie in the coal under hydraulic pressure. Generally the gas content increases with rank. Although CBM is primarily methane gas, it may also contain very small amounts of Ethane, Propane, Carbon Dioxide or Nitrogen.

The methane trapped in coalbeds can be released before, during, or even after mining. “Coalbed methane” technically refers only to methane gas located in coal seams that are not yet being mined. Methane released from active mines is called “coalmine methane,” or CMM. Methane extracted from mines that are no longer in use is known as “abandoned mine methane or AMM. In practice, however, the term *CBM* often is used generically to refer to all types of methane gas associated with coal seams.

#### **2.1 Understanding Coalbed Methane**

Coal forms through the bioconversion of ancient organic matter. During the process of “coalification,” anaerobic organisms generate methane that becomes locked inside coal seams. All coalfields contain coalbed methane, although the quantity can vary significantly. Because methane attaches to coal at the molecular level through “micro porosity,” coal generally can store more gas than petroleum sands. Methane is generated under high-temperature, high-pressure conditions, as carbon containing material is buried beneath deeper layers.



## **2.2 TYPES OF CBM**

It is important to distinguish different categories of methane from coal as explained below:

### **2.2.1 Coal Mine Methane (CMM)**

Methane released as a result of mining activity when a coal seam is mixed out and if not controlled to prevent the accumulation of flammable mixtures of methane in air (5-15%) it presents a serious hazard. Methane capture and its utilization from coal mines is generally not practiced in India on commercial basis as present levels of coal production in gassy mines are generally achievable using ventilation controls but even where there may be some safety benefit there is some resistance to introducing gas drainage due to lack of technology, expertise and experience. Additionally, there is a perception that CMM is not commercially viable.

### **2.2.2 Ventilation Air Methane (VAM)**

Methane released from coal seams into the ventilation air of the active coal mine is called ventilation air methane (VAM). Concentration of methane in the ventilation air generally, limited by law, for safety reasons, at 0.5 to 2% in different parts of mine with variation depending on the country. Concentrations can be controlled by the volume of ventilation air circulated (dilution) or through special drainage (CMM). The concentration of methane in VAM is typically 0.8% or less and is too low for conventional utilization purposes. However technologies are being developed to remove methane, where additional gas is available to generate electricity using thermal energy recovered.

### **2.2.3 Abandoned Mine Methane (AMM)**

When an active coal mine is closed and abandoned, methane continues to be emitted from all the coal seams distributed by mining, decaying gradually over time unless arrested by flooding due to ground water recovery. Depending on the methane concentrations, local regulations and geology it may be possible, or required for public safety reasons to continue draining or venting this abandoned mine methane. AMM methane extraction and utilization schemes aim to recover the gas left behind in unmined coal above and below the goaf areas formed by longwall mining method.

### **2.2.4 Virgin Coalbed Methane (VCBM)**

Coalbed methane and virgin coalbed methane are terms conventionally used for methane drained and captured directly from coal seams. CBM is generally reserved to describe the gas produced from the surface boreholes ahead of mining for coal mine safety and coal production reasons. VCBM is produced by similar process but completely independent of mining activity. Methane



concentration in VCBM is generally high (around 90%) and can be used as a replacement for natural gas supplies.

### **2.3 TYPES OF MINES ON THE BASIS OF METHANE EMISSION**

There are three types of mines based on the amount of methane ( $\text{CH}_4$ ) emission. They are:

- Degree 1 gas mines- Percentage of inflammable gas in general body is less than 0.1% and rate of methane emission should be less than 1 (cubic metre/tonne)/day.
- Degree 2 gas mines- Percentage of inflammable gas in general body is more than 0.1% and rate of methane emission should be less than 1 to 10 (cubic metre/tonne)/day.
- Degree 3 gas mines- Only rate of methane emission is more than 10 (cubic metre/tonne)/day.

### **2.4 POTENTIAL OF CBM AND FUTURE OF CBM**

CBM is a remarkably clean fuel if utilized efficiently. Having fourth largest proven coal reserves in the world, India holds significant prospects for exploration and exploitation of CBM even in future.

Approximately 70 countries have coal-bearing regions, and more than 40 of these have initiated CBM activity of some type. In about 20 countries, active drilling programs are either in progress or have been in the past. Several innovative applications to help improve the economics of CBM development around the world have been covered in this article, but there are more in development.

Some examples include real-time fracture monitoring, new CBM fracture-delivery systems, special cements and new perforating methods. Fracture monitoring allows operational changes to be made in real time to optimize the rate and delivery of the fracture fluids.

The fracking technique, an extreme overbalanced stimulation using coiled tubing, was developed specifically for CBM operations. It delivers nitrogen at high pressures and rates with low friction losses. Using coiled tubing adds operational efficiencies to this method. Acid-soluble cements offer the option of completing a well, dissolving the cement across zones of interest and stimulating the well free of cement-induced flow restrictions. Fit-for purpose perforating charges have been developed that perform better in coal seams than do shaped charges designed for conventional reservoirs. These technologies are either currently being tested or already in use. In the future the CBM industry may take an entirely new direction, becoming an essential player in carbon storage.

A number of enhanced coalbed methane (ECBM) projects have investigated unminable coal seams and depleted CBM fields as candidates for  $\text{CO}_2$  sequestration. The organic materials that make up coals generally have a stronger affinity for  $\text{CO}_2$  than for methane. In a process similar to that used for secondary oil recovery,  $\text{CO}_2$  is pumped into a coal seam and is adsorbed by the



coal while displacing and liberating methane. ECBM projects offer the opportunity of removing greenhouse gases from the atmosphere and simultaneously increasing natural gas supplies. The studies have progressed from the data-gathering and analysis phase to implementation, and the results have been encouraging. The USA led the way in the early days of CBM development. Australia, China, India and other countries are quickly catching up. CBM is a global resource, poised to become a major contributor of clean, abundant energy. New technologies and techniques have not yet removed the “unconventional resource” label from CBM, but they have created an atmosphere in which producing gas from coal is a global reality.

## **2.5 RESERVES AND RESOURCES OF CBM IN INDIA**

In India CBM reserve of 9.12 Trillion Cubic Feet (TCF) has been established in 6 CBM blocks in the states of West Bengal (2), Jharkhand (2) and Madhya Pradesh (2). India is believed to have large bituminous coal reserves “within the CBM window.” These reserves, which date from the Paleozoic and Tertiary ages, are located at depths ranging from 250 to 1,200 meters. India’s coal resources are estimated to have gas content values that vary from 1 to 23 cubic meters (m<sup>3</sup>) per tonne. The CBM associated with India’s coal reserves has not yet been exploited on a significant scale. In large part, this is because information has not been available on key elements such as gas content, producible CBM reserves, reservoir saturation, and permeability.

India’s Ministry of Coal and Directorate General of Hydrocarbons (Ministry of Petroleum & Natural Gas) has directed studies aimed at identifying potential locations where coalbed methane can be produced. The Central Mine Planning & Design Institute Limited (CMPDI) has carried out studies and exploratory drilling to delineate blocks for CBM prospecting and exploitation in several coalfield locations throughout India, including Jharia, Raniganj, East Bokaro, West Bokaro, and South Karanpura.

**Table-2** Coal Reserves and CBM Resources at Five Coalfields in India

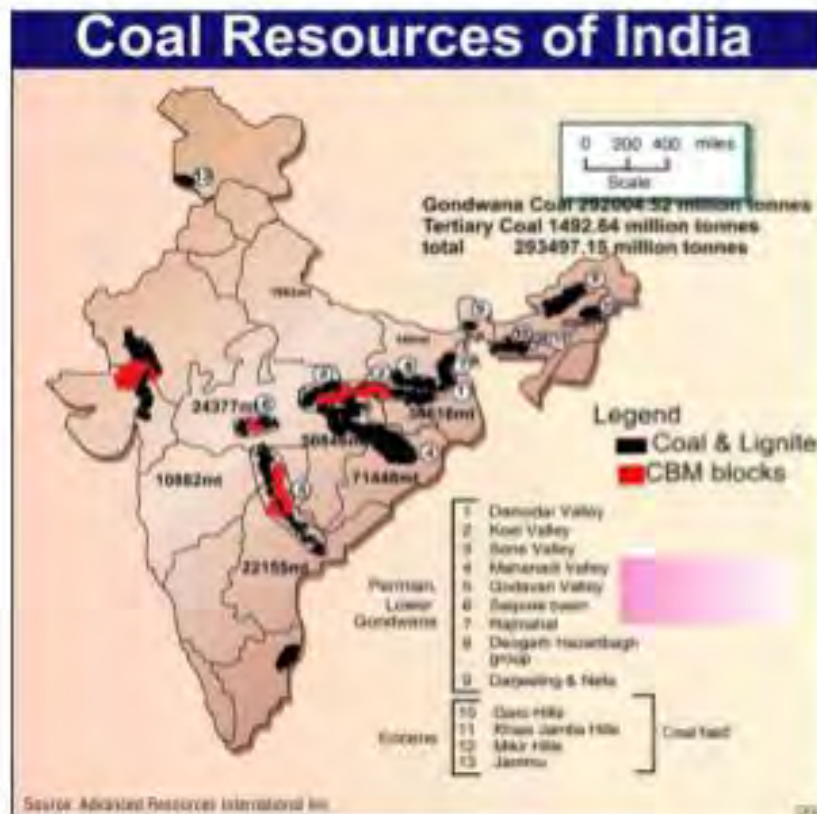
<b>Coalfields</b>	<b>Coal Reserves in Unmined Areas, in Billion Tonnes(BT)</b>	<b>Coal Reserves in Unmined Seams Below Developed Areas (BT)</b>	<b>Total Coal Reserves (BT)</b>	<b>Predicted CBM Resources, in Billion Cubic Meters</b>
Jharia	4.3	3.1	7.40	50
Raniganj	*	*	8.20	40
East Bokaro	2.1	0.9	3.00	30
West Bokaro	1.5	0.1	1.60	10
South Karanpura	1.0	2.68	3.68	20



<b>TOTAL</b>			<b>23.88</b>	<b>150</b>
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\*Itemized figures not available.

## Indian CBM Reserves..



**Fig. 9: CBM Reserves**(Source: Advanced Resources Institution)

In India, efforts to identify CBM prospects have focused primarily on areas that are known to contain high-rank coal seams with large amounts of gases present. Many technical challenges remain while extracting this CBM.

For example, ancient deposits of Gondwana coal are believed to have high CBM potential. But producing this gas in usable form may prove difficult.

In India, efforts to identify CBM prospects have focused primarily on areas that are known to contain high-rank coal seams with large amounts of gases present.



**Table-3** Predicted CBM Resources in West Bengal, Jharkhand, Madhya Pradesh, and Gujarat

West Bengal	110
Jharkhand	175
Madhya Pradesh	114
Gujarat	311*
<b>TOTAL</b>	<b>710</b>

\*Lower-end estimate.

## **2.6 BEHAVIOUR OF GAS IN CBM WELL**

Productivity of CBM wells depends primarily upon permeability within micro-fractures. Typical values for cleat-permeability range from a few milli-Darcys to a few tens of milli-Darcy. Generally, the cleats in coal-beds are initially saturated with water. This water must be produced before gas can start desorbing from the matrix into these micro-fractures. This initial phase of water production is known as "dewatering". In this phase, gas production starts to build-up and reaches a maximum value. This stage requires disposal of huge amount of water, which has a significant impact on environment. Unlike produced water from conventional oil and gas, much of CBM produced water may be put to beneficial use, such as agricultural use (irrigation of crops, hydroponic system), livestock watering, industrial use (dust control, equipment washing, power generation) or some water flood projects (depending on the quality of produced water). In other cases it requires to treat produced water using chemical methods.

## **2.7 STORAGE MECHANISMS**

Gas can exist in a coal seam in two ways. It can be present as free gas within the natural porosity of the coal (joints and fractures), and it can be present as an adsorbed layer on the internal surfaces of the coal. The fine micro pore structure of coal has a very high storage capacity for methane. Methane molecules adsorb to the micro pore walls. Because the bulk porosity of the coal cleat system is small (less than five percent) and the initial gas saturation in the coal cleats is typically low (less than ten percent), most of the gas-in-place in coals (greater than ninety percent) is adsorbed in the coal matrix. The adsorbed gas volume is significant even in coals that have gas saturated cleat systems at initial reservoir conditions.

For example, a water saturated coal containing 375 scf/ton of adsorbed gas has the same gas-in-place as a conventional sandstone reservoir at 400 psi with 51 percent effective gas porosity, and the same gas-in-place as a conventional sandstone reservoir at 1,600 psi with thirteen percent effective gas porosity. For most coal seams, the quantity of gas held in the coal is primarily a function of coal rank, ash content, moisture content, and the pressure of the coal seam. The adsorbed capacity of a coal seam varies non-linearly as a function of pressure. This relationship



is best described using a Langmuir isotherm. The following figure shows typical desorption isotherms as a function of coal rank.

Water is stored in coals in two ways: as bound water in the coal matrix and as free water in the coal cleat system. The bound water in coals is formed as a byproduct of the coalification process. Matrix bound water is not mobile and has not been shown to significantly affect methane recovery from coal. The free water contained in the cleat system is mobile at high water saturations (greater than thirty percent). Many blanket coal deposits are active aquifer systems and thus are 100 percent water saturated in the cleat system. Coals that are not aquifers may have initial water saturations less than 100 percent. The minimum mobile water saturation of the coal cleat system is determined by relative permeability testing of cleated coal samples.

### **2.7.1 Types Of Retention Mechanism**

Methane can be retained as:

1. As ‘adsorbed’ molecules on internal surfaces or ‘adsorbed’ within the molecular structure. (adsorbed on the surfaces of the coal).
2. As gas molecules held within the matrix porosity (macro- and micro-porosity).
3. As free gas within the fracture network. (Stored as free gas in the cleats).
4. As dissolved gas in groundwater and other solutions within the bed.

**2.7.1.1 Adsorbed State:** Maximum (98%) methane retention is in the form of adsorbed state. The methane adsorption generally takes place at high pressure. Methane (adsorbate) is adsorbed on the surface of the bed (adsorbent) and their molecules are held together by a weak force of attraction i.e. Vander Waal’s force. It is totally different from absorption phenomenon. Absorption takes place on the surface at low temperature. It is chemical phenomenon and there is always a strong bond between the atoms. In contrast of it adsorption takes place at depth and high temperature and pressure. It is physical phenomenon and there is no bond between the molecules of methane and coal except a weak force of attraction.

The pores may be of three types:

- a) Macro pores (>50nm)
- b) Meso pores (2-50 nm)
- c) Micro pores (< 2 nm)

All these three pores are primary pores and it is very important for methane retention than secondary pores like fractures and joints (cleat system).



### **2.7.1.2 Free gas state**

In this state methane molecules are present in the fractures and cleats of coal/shale samples. In these state gases are easily movable from fractures and cleats to the borehole. All the three primary pores (micro pores, meso pores and macro pores) is less important for methane retention than secondary pores like fractures and joints (cleat system).

### **2.7.1.3 Gas dissolved in ground water**

Some methane molecule is found dissolved in solutions present in the pore spaces. Its amount is very less than the gases present in adsorbed state and free-state.

## **2.7.2 Flow mechanism in a reservoir**

A coal/shale unit can be taken as a cube which is bounded by butt and face cleats as shown in figure. Within the cube, a network of micro pores and interconnecting capillaries leads to the bounding of cleats. According to literature, the movement of gas has three distinct stages. Within the cube, a network of micro pores and interconnecting capillaries leads to the bounding of cleats.

According to literature, the movement of gas has three distinct stages: Desorption of the gas from surface due to decrease in the pressure. Diffusion through the matrix from a zone of higher concentration to lower concentration. Flow of gas through the coal seam cleat network under Darcy flow condition.

### **2.7.2.1 Desorption Phenomenon**

In this phenomenon methane molecule detach from micro pores surface of the coal matrix and enter the cleat system where methane molecule exists as a free gas. The desorption isotherm defines the relationship between adsorbed gas concentration in the coal matrix and the free gas present in coal system. In the desorption stage the desorption isotherm is the link between the flow in the matrix system (where flow is controlled by concentration gradient) and flow in the cleat system (where flow is controlled by pressure gradient). The relationship between gas concentration and pressure is a non-linear fraction that is generally defined by the Langmuir equation.



### 2.7.2.2 Diffusion Mechanism

In this process, there is a random molecular motion from higher concentration to lower concentration. Here methane molecule desorbs from the matrix into the coal cleat system in response to methane concentration gradient. Diffusion of gas through the micro pores of coal is described by Fick's law.

### 2.7.2.3 Darcy's Flow

After local diffusion of gas through the micro pores of the coal, the transport of gas occurs in fracture and cleats. The fluid flow in the cleat system can be described by Darcy's law. Darcy's law relates the flow rate in the reservoir, as features in a coal seam to the pressure drop across the reservoir using proportionality constant i.e. permeability. The Darcy's equation is given by;

$$Q = -KA \frac{(\Delta P)}{\mu L} \quad \text{Eq. (1)}$$

Where, Q= volume of fluid flow through a column in unit time.

K = permeability (a constant)

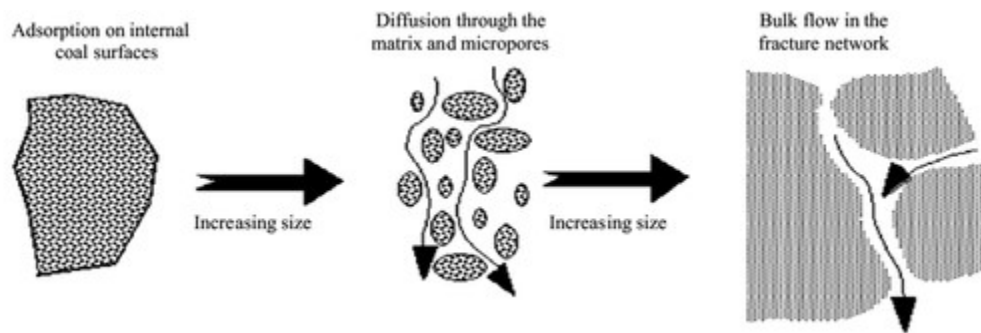
A= cross sectional area of the column

$\Delta P$ = pressure difference, ( $P_f - P_i$ ),  $P_f > P_i$

L=traveling length

$\mu$ = viscosity

Here, negative sign indicates that the flow is in the direction of higher pressure to lower pressure.



**Fig. 10:** Schematic of CH<sub>4</sub> flow dynamics in coal seams (Source: Sorption behaviour of coal for implication in coal bed methane an overview(Research gate))



## **2.8 ESTIMATION OF GAS IN PLACE IN A VIRGIN COAL BLOCK**

Gas-in-Place determination is a complex process and requires the following data:-

- Area of coal beds
- Thickness of coal
- Average coal-bed interval density
- In-situ Gas content

The first three values are used to estimate coal mass in place and can be determined from well log data and analysis of core or cuttings. The fourth parameter, in-situ gas content, varies widely and is most accurate if measured directly on fresh core. The experimental method uses adsorption isotherms to obtain gas content. It is very important that gas-in-place is corrected for moisture and ash content. These non-coal components sorb negligible amount of gas. Higher quantities of moisture and ash reduce the amount of gas present in coal.

$$\text{GIP} = M_{\text{coal}} X G_c$$

$$M_{\text{coal}} = A \cdot h \cdot p,$$

$$G_c = \text{In-situ Gas content}$$

Where, A = area of coal block

h = thickness of coal

p = density of coal

## **2.9 COAL BED METHANE PRODUCTION**

- Demarcation of Basin/Block/Area – This is the first step towards the development of Coal Bed Methane. We demarcate the largest fields for producing coal.
- Geological Information- Basic geological information like Structural, Lithology, stratigraphic geological information. A geologist can get this information from regional offices from Geological Survey of India.
- Site Selection and Suitability- After the demarcation of the area and getting basic information geologist select few preferable sites for the test drilling based on earlier



studies and research of the area. Generally, sites should be free from structural complexes and intrusive. There should be enough water present near the drilling site because of its requirement during water/mudbased drilling. Finally, Well drilling is started.

### **2.8.1 Drilling of Well**

The first step in creating a drilling program for a CBM well involves gathering information about existing wells in a given area. These data include:

- Reservoir depths and pressures
- Drilling histories
- Environmental considerations

Sources of this information include:

- Regulatory agencies
- Service companies
- Coal-mine operators
- Published literature

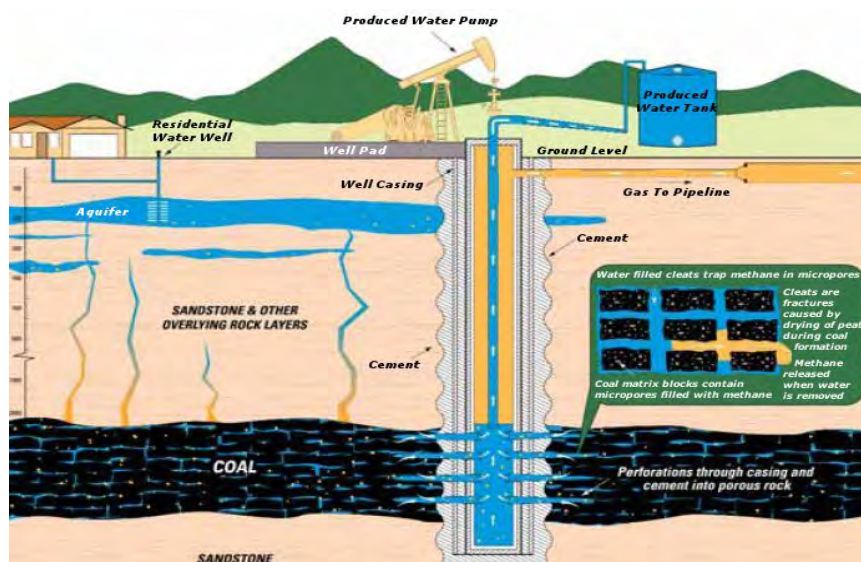
After these data are gathered and analyzed, a preliminary drilling and completion prognosis can be drafted with the input of field operations personnel. An important aspect in drilling frontier or appraisal wells is to keep the drilling procedures relatively simple. For example, water-based drilling fluids may be more damaging to the coals than air or gas drilling, but they are safer in the event of a gas kick, and the damage can be mitigated by fracture stimulation.

CBM wells range in depth from a few hundred meters to more than 3000 m. As a result, several rig types and sizes may be suitable for a given well plan. The most common rig type is the conventional rotary drilling rig, although modified water-well rigs commonly are used to drill shallow coal wells in locations such as the Powder River basin of Wyoming. Other rig types include:

- Top-drive rigs
- Mining rigs
- Coiled-tubing drilling units

In some cases, a drilling rig is used to drill the well to the top of the target coal seams and set/cement casing. A modified completion rig is used to drill the target coals and complete the well while the drilling rig moves to the next well. The selection of a rig, associated equipment, and drilling fluids is often guided by the completion method. For example, if a dynamic-cavity completion is planned, the rig should be equipped with a power swivel for rotating, reciprocating, and circulating during cleanouts. Auxiliary equipment for this completion will include air compressors and boosters, blowout preventers, a rotating head, and specially designed manifold and flowlines for production testing. In some instances, it is more efficient to select a drilling rig by starting with the desired completion method and designing backwards.





**Fig. 11:** Section of drill site (Source: Energy Justice Network)

### **2.8.2 Coring**

Coal cores can be obtained with several different techniques including conventional, wireline, and pressure coring. Conventional coring equipment is drillpipe conveyed, which can result in trip times of an hour or more. Because coal samples begin to desorb gas as they are lifted from the bottom of the well, long trip times can result in large volumes of lost gas. Desorbed gas volumes can be corrected for this effect, but the correction may not provide accurate gas content. As an alternative, many operators use wireline-coring equipment, which can bring samples to the surface in 15 to 20 minutes, significantly reducing lost-gas volumes.

A few operators use pressure coring, which traps the coal downhole in a sealed barrel, preventing any gas loss. This technique requires specialized equipment, which can be difficult to operate, and is approximately five times more expensive than conventional coring. The best applications for pressure coring are those cases in which there are large discrepancies between existing gas content data and well behavior. For example, pressure coring in some San Juan basin wells showed that gas contents were twice as high as those values obtained from conventionally cored wells.

### **2.8.3 Completion**

To obtain representative gas content values, high core recoveries are imperative. Unfortunately, recoveries are often low because higher-quality coals tend to be highly cleated and friable, causing them to break up. In addition, many operators wait to core until they see a gas kick on the mud log or a change in the rate of penetration. Waiting until this point means that the top few feet of the coal seam will be missed, and if the coal seam is thin, it may be missed entirely.



Several different types of CBM completions have been developed to link the wellbore to the cleat system effectively. The most common completion type is to run casing, perforate, and hydraulically fracture the coal seams. Frac jobs in low-permeability coals require long, narrow, propped fractures, whereas short, wide, unpropped fractures are used in higher-permeability coals. If the permeability is high enough and the coals are relatively undamaged by drilling, a simple openhole completion may be sufficient. In a few areas, dynamic-cavity completions are used, resulting in gas rates that are substantially greater than fracture-stimulated wells. It is important to stress that optimizing completion methods in a coal reservoir is likely to be a trial-and-error process. This process can be shortened by fully understanding the different completion types available, where they are most applicable, and by collecting sufficient reservoir data to select the best completion. Reviewing publications from the Gas Research Institute (now the Gas Technology Institute), which has been involved in a wide range of CBM completion studies for many years, is a good place to start.

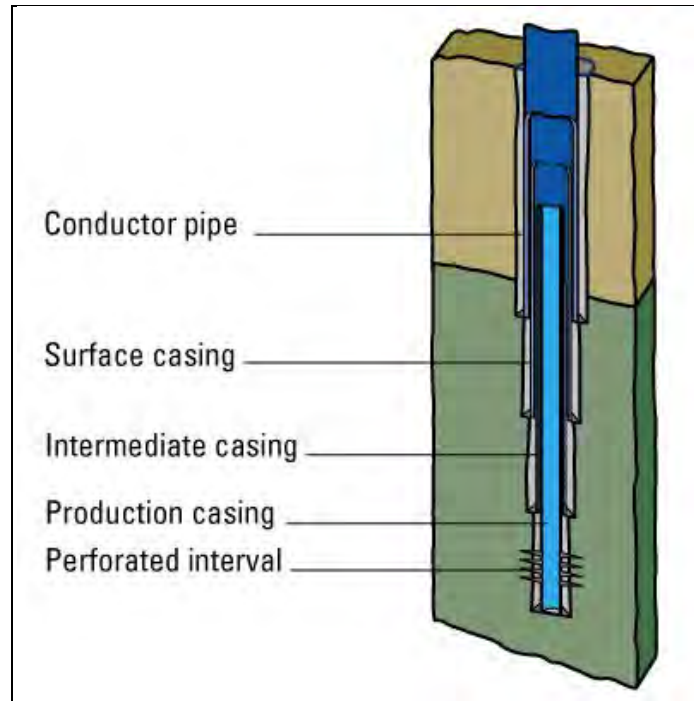
#### **2.8.4 Casing**

Casing is large diameter pipe that is assembled and inserted into a recently drilled section of a borehole and typically held in place with cement.

Purpose of Casing

1. It prevents the contamination of fresh water in well zones.
2. It prevents the formation from caving and differential sticking.
3. It helps in isolating the upper formation that may have different fluid or pressures.
4. It seals off high pressure zone from surface and prevent blowout.
5. It provides a smooth surface for installation of production equipment.





**Fig. 12:** Types of Casings( Source: Rigzone)

There are three types of casing used –

1. Conductor Casing
2. Surface Casing
3. Intermediate Casing (Optional)
4. Production Casing
5. Production Liner

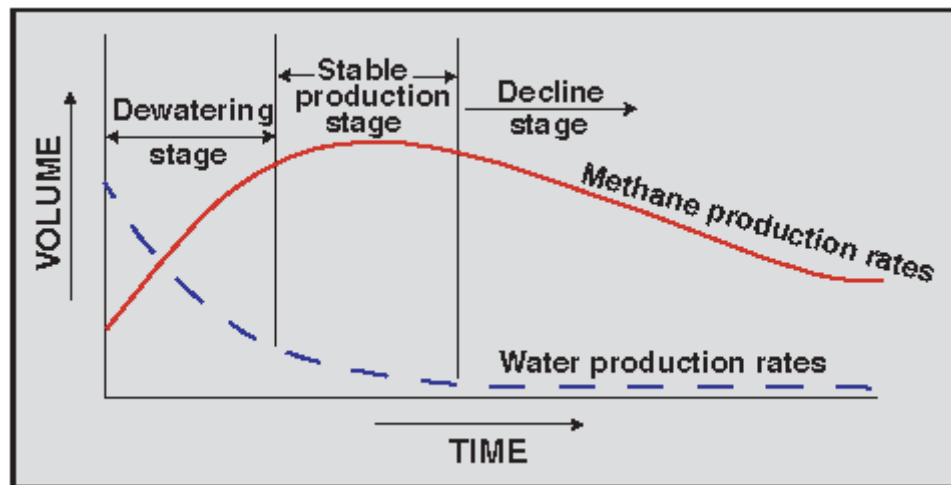
### **2.8.5 Cementing**

- Primary Cementing provides zonal isolation. Cementing is performed by circulating the cement slurry through inside the casing and out of the annulus through the casing shoe at the bottom of the string. First the definite volume of slurry is pumped behind the bottom plug and the top plug is behind the displacement fluid which gets bumped onto casing shoe. Pressure is spiked at the cement pump which can be seen at surface. To prevent the flow of cement backward float collar is used above the casing shoe as a check valve.
- Squeeze Cementing – It is a dehydrating process where cement slurry is pumped in problem area through cement retainer. It is done to correct problem in primary cementing job.



## **2.9 STAGES OF PRODUCTION IN CBM WELLS**

1. Dewatering (Water Production)- After drilling and completion techniques reservoir is ready for the production. Generally, in most of the CBM wells the water is the important thing which keep the adsorbed methane in place. As the completion is over and reservoir is set for production during production first the water comes to the wellbore from the reservoir which is then pumped to the surface by using pumps.
2. Stable Gas Production-As the water production happens the sorbed methane starts releasing from the reservoir and as the water production rate goes on decreasing the methane gas emission starts and reaches a final stage.
3. Decline Stage- As the production starts the pressure in the reservoir declines and the methane production rate starts declining.



**Fig. 13:** Production graph(Source:google.com)

### **2.9.1 Hydraulic Fracturing**

Hydro fracturing is an age-old method of stimulating oil and gas formations but now-a-days this is being used commonly in almost all CBM formations for improving the connectivity between the cleat systems in coal bed thereby increasing the permeability to CBM gas.

The characteristics of coal, being different in many ways from sandstone or limestone formations, the fracturing treatment, principally being same, differs to a large extent during application in CBM formation. The complete geometry of fracture changes and also the selection of fracturing fluid, proppant etc. needs careful analysis. The well then can be fractured in multiple stages, with treatments optimized for a particular coal seam or group of seams. To ensure the appropriate interval is treated, stages can be isolated with:

- Bridge plugs
- Frac baffles
- Sand plugs



- Ball sealers

## 2.9.2 Need for Frac Treatment

There are four primary reasons why fracture treatments are needed in cased hole completions:

- To by-pass wellbore damage: The natural fracture network that is essential for fluid production in coals can be invaded and plugged by drilling fluid and cement.
- To accelerate dewatering and pressure drawn: Pressure drawdown must extend deep into the seam to accelerate the release of gas from the micropores. A propped fracture will extend the effective wellbore radius if high fracture conductivity contrast can be established. This is especially important in lower permeability coals, where a relatively long propped fracture is desirable.
- To distribute the pressure drawdown to reduce fines production: This is accomplished by reducing the pressure in the near well-borne area, where the coal is often in a degraded condition. Again, high fracture conductivity contrast is essential.
- To effectively connect the wellbore to the entire reservoir: Due to abrupt vertical discontinuities previously mentioned, perforations may not connect with all the fracture networks, even at high density.

## 2.10 Uses of CBM

A permit that gives a company, country etc. the right to emit a specified amount of carbon compounds into atmosphere and may be purchased if emissions are expected to exceed a quota or sold if the quota is not reached: companies can accumulate carbon credits by funding new forest growth.

1. **Power Generation**: CBM can be ideal fuel for Power Plants to bring in higher efficiency and is preferred fuel for new thermal power plant on count of lower capital investment and higher operational efficiency.
2. **Auto Fuel in form of Compressed Natural Gas (CNG)**: CNG is already an established clean and environment friendly fuel. Depending upon the availability of CBM , this could be a good end use. Utilization of recovered CBM as fuel in form of CNG for mine dump truck is a good option.
3. **Feed stock for Fertilizer**- Many of the fertilizer plants in the vicinity of coal mines where coal bed methane is drained have started utilizing fuel oil as feedstock.
4. **Use of CBM at Steel Plants**- Blast furnace operations use metallurgical coke to produce most of the energy required to melt the iron ore to iron. Since coke is becoming increasingly expensive, in the countries where CBM is available, the steel industry is



seeking low-capital options that reduce coke consumption, increase productivity and reduce operating costs.

5. **Fuel for Industrial Use-** It may provide an economical fuel for a number of industries like cement plant, refractory, steel rolling mills etc.
6. **CBM use in Methanol Production –** Methanol is a key component of many products. Methanol and gasoline blends are common in many countries for use in road vehicles. Formaldehyde resins and acetic acid are the major raw material in the chemical industry, manufactured from methanol.
7. **Other uses-** Besides above, option for linkages of coal-bed methane produced by coal mines, through cross country pipelines may be considered.

Environmental issues related to CBM drainage – The core environmental issues related to CBM drainage are listed below:

- Groundwater table draw down due to pumping large quantities of groundwater;
- Disposal of large volumes of produced water;
- Methane contamination of shallow groundwater;
- Noise pollution from compressors and other sources
- Air pollution from compressor exhaust gases, methane leakage, and dust; and
- Surface disturbance from construction of roads, pipelines, and other facilities.



## CHAPTER-3

### PROXIMATE ANALYSIS

**Proximate analysis** is a way to determine the distribution of products when the samples are heated under specified conditions.



**Fig. 14:** Digital Weighing Balance    **Fig. 15:** Desiccator

#### **3.1 Moisture content**

Water is considered to occur in four different states in coal, as described by [Krumin, 1963](#).

- Adherent moisture: It is mechanically retained on the surface of the coal or in cracks and internal cavities. The synonymous terms of adherent moisture are “free moisture”, “bulk water”, “superficial water”.
- Inherent moisture: These are condensed or physically sorbed in the capillaries and micropores of the coal substance, distinguished by subnormal vapour pressure. Synonymous terms are “true bed moisture”, “natural bed moisture”, or “capacity moisture”.
- Chemically combined water: It is bound into molecular structure of the coal and released only by the breaking of molecular bonds. This can occur either naturally during coalification or artificially during pyrolysis.
- Moisture of Hydration: It is the moisture of hydration of inorganic constituents in the coal, especially clay minerals.



- Total moisture: The coal which has been exposed to contact with water in the seam or coal and coke wetted by rain, may carry free or visible water. This water plus the moisture within the material, is referred to as total moisture.

The moisture content of any given coal sample is variable, and may range from near zero up to a maximum capacity moisture content, which is reflective of the rank of the coal and composition.

### **3.2 Sample Preparation for Proximate Analysis:**

Before preparation of coal sample for analysis, one must clean the floor and equipment. If not cleaned properly, the equipment would remain contaminated and not give proper or good result.

### **3.3 Procedure:**

#### **Step 1: CRUSHING TECHNIQUE**

Take 300gm of drilled core sample of coal to be crushed by the use of hand Mortar up to suitable size for Grinder machine. Used for crushing samples upto the size  $<8\text{mm}$  of the coal sample.



**Fig. 16:** Mortar and Grinder (Source: Google Images)

#### **Step 2: GRINDING TECHNIQUE**

Total crushed same (approx. 300gm) sample of coal is taken for next stage of preparation for analysis. If the particle size of an inhomogeneous sample is too large, the analytical results may show considerable standard deviations. For reducing the deviation in analysis, the grinder machine is used to maintain coal sample size to  $-212\mu\text{m}$ .

#### **Step 3: SIEVE TECHNIQUE**

Fine-grinded sample of same coal size is grounded to pass  $-212\mu\text{m}$  IS sieve size. All 300gm coal sample is grounded to pass from  $-212\mu\text{m}$  IS sieve and the residual sieved sample that cannot pass is again crushed by the use of Mortar to reduce the standard deviation for analysis. When the



entire sample (approx. 300gm) passes through the sieve, the same sample of coal is sent to laboratory for the analysis of coal to determine coal quality through Proximate Analysis.

### **3.4 Determination of Moisture Content**

Loss in weight of the coal sample is caused by the heating of coal sample for one hour at  $108 \pm 2^\circ\text{C}$  in the moisture oven. A known amount of finely powdered coal sample is kept in a silica crucible and heated in a moisture oven at  $108 \pm 2^\circ\text{C}$  for one hour. Thereafter, the crucible is taken out, cooled in a desiccator and weighed.



Fig. 17: **Oven**



Fig. 18: **Crucible to calculate moisture content**

The percentage of moisture is measured by the given formula –

$$\% \text{ Moisture in coal} = [\text{weight of sample (After heating)} \div \text{weight of sample (Before heating)}] * 100$$

$$\% \text{ Moisture in coal} = \{M2 - M3\} \div \{M2 - M1\} * 100$$

Where,  $M1$  = weight of crucible

$M2$  = weight of sample + crucible (Before heating)

$M3$  = weight of sample + crucible (After heating)



### 3.5 Volatile Matter

Volatile matter in coal refers to the components of coal, except for moisture, which are liberated at high temperature in the absence of air. This is usually a mixture of short and long chain hydrocarbons, aromatic hydrocarbons and some sulfur. The volatile matter of coal is determined under rigidly controlled standards. Any coal which has high volatile matter content:

- Can ignite easily.
- Burns with long smoky yellow flame.
- Has low calorific value.
- Needs large furnace volume for combustion.
- High tendency of catching fire.

#### 3.5.1 Determination of Volatile Matter

It is the loss in weight of moisture free powdered coal when heated in a crucible fitted with cover in a muffle furnace at  $900 \pm 10^\circ\text{C}$  for 7 minutes. Thereafter, the crucible is taken out, cooled in a desiccator and weighed.



**Fig. 19:Muffle Furnace (or Volatile Matter furnace) Fig. 20Crucible to calculate Volatile matter**

The percentage of Volatile Matter is measured by the given formula –

$$\% \text{ Volatile Matter} = \left[ \frac{M2 - M3}{M2 - M1} \right] \times 100$$

Where,  $M1$  = weight of crucible

$M2$  = weight of sample + crucible (Before heating)

$M3$  = weight of sample + crucible (After heating)



### **3.6 Ash Content**

Ash content of coal is the non-combustible residue left after coal is burnt. It represents the bulk mineral matter after carbon, oxygen, sulfur and water (including from clays) has been driven off during combustion. Analysis is fairly straightforward, with the coal thoroughly burnt and the ash material expressed as a percentage of the original weight.

#### **3.6.1 Determination of Ash Content**

It is the weight of residue obtained after burning a weighed quantity of coal in an open crucible (i.e. in presence of air) at  $815 \pm 10^\circ\text{C}$  in a muffle furnace till a constant weight is achieved. Thereafter, the crucible is taken out and cooled in the desiccator.



**Fig. 21Ash Furnace**



**Fig. 22Crucible to calculate ash content**

The percentage of Ash content is measured by the given formula –

$$\% \text{ Ash in coal} = \left[ \frac{M3 - M4}{M2 - M1} \right] \times 100$$

Where, M1 = Mass of crucible (in gm)



M2 = Mass of crucible and sample (in gm)

M3 = Mass of crucible and ash (in gm)

M4 = Mass of dish after brushing out the ash and on Reweighing (in gm)

### **3.7 Fixed Carbon**

The fixed carbon content of the coal is the carbon found in the material which is left after volatile materials are driven off. This differs from the ultimate carbon content of the coal because some carbon is lost in hydrocarbons with the volatiles. Fixed carbon is used as an estimate of the amount of coke that will be yielded from a sample of coal. Fixed carbon is determined by removing the mass of volatiles, determined by the volatility test, from the original mass of the coal sample.

The elemental constituents of coal are carbon, hydrogen, nitrogen, sulphur and oxygen and these are determined by ultimate analysis.

#### **3.7.1 Determination of Fixed Carbon**

It is determined indirectly by deducting the sum total of moisture, volatile matter and ash percentage from 100.

$$\% \text{ Fixed Carbon in coal} = 100 - (\% \text{ moisture} + \% \text{ ash} + \% \text{ volatile matter})$$

#### **3.8 Result:**

Table 4: Proximate Analysis Results

<b>Input Sample Details</b>		
Sample		<b>DST/95/174/-72M</b>
Sample Location		<b>0</b>
Date		<b>26.04.2016</b>
Vessel Number		<b>4</b>
Temperature(°C)		<b>30</b>
Eq. Moist (%)		<b>1.1</b>



<b>Proximate Analysis (air dried basis)</b>			
<b>Moist (%)</b>	0.9	<b>Ash (dry)</b>	17.1
<b>Ash (%)</b>	17.0	<b>VM (dry)</b>	19.4
<b>VM (%)</b>	19.2	<b>FC (dry)</b>	63.5
<b>FC (%)</b>	62.9	<b>VM (daf)</b>	23.4
		<b>FC (daf)</b>	76.6



## **CHAPTER-4**

### **PETROGRAPHIC ANALYSIS**

#### **4.1 Introduction to Petrography and its Importance**

Petrography is a branch of petrology that focuses on detailed descriptions of rocks. The mineral content and the textural relationships within the rock are described in detail. The classification of rocks is based on the information acquired during the petrographic analysis. Petrographic descriptions start with the field notes at the outcrop and include macroscopic description of hand specimens. The detailed analysis of minerals by optical mineralogy in thin section and the micro-texture and structure are critical to understand the origin of the rock. So, Petrography is the study of rocks under microscope.

Rocks like coal are premeditated under reflected light microscope as coal is made up of macerals and they do not allow light to pass through them. Coal petrography is an important technique to determine the coal's rank (Degree of Coalification) and type (amount of macerals).

The rank of the coal is determined by measuring the percentage reflectance of the maceral vitrinite whereas type is determined using a point count procedure to obtain the volume percent of the various coal macerals, or fossilized plant remains. It is also done to determine the mineral matter (inorganic constituents) present in the macerals which may help in revealing the depositional environment. It also helps in knowing the methane content as vitrinite in coal indicates more cleat system and hence more is the chance of methane adsorption in the micropores. If, more liptinite is present then more methane will be generated.

#### **4.2 Introduction of Macerals**

A maceral is a component having organic origin. The term 'maceral' in reference to coal is analogous to the use of the term 'mineral' in reference to igneous or metamorphic rocks. Examples of macerals are inertinite, vitrinite, and liptinite. They have a heterogeneous chemical composition and non-crystalline structure. The study of macerals is done under a reflected light microscope and reflectance is in the increasing order of Inertinite, Vitrinite and Liptinite. Vitrinite reflectance indicates the maceral maturity along with carbon, hydrogen and nitrogen composition of a coal. Under the reflectance light microscope liptinite is identified by a dark band while vitrinite and inertinite with brighter bands. In determination of the rank of coal, vitrinite reflectance is used as an identification tool. The band colour changes from dark grey to light grey indicating a shift from peat to anthracite. Vitrinite is used as a reflectance indicator due to its compositional origin. Liptinite composition includes plant oil, seed and petals which are



difficult to analyse under a reflectance microscope also inertinite has a wide range of variation and thus do not confirm particular composition.

### **4.3 Mineral Matter and Microlithotype**

All the maceral group are divided, based on physical and optical characteristics, chiefly into three groups vitrinite, inertinite and liptinite. Further subdivision of individual groups is done based on similar characteristics except for liptinite group where precursors determine the type of subdivision.

- ✦ Maceral Group: Defined by level of reflectance
- ✦ Maceral Subgroup: Defined by degree of destruction
- ✦ Maceral : Defined by morphology and degree of gelification

#### **4.3.1 Vitrinite**

It is a coalification product of humic substance, which essentially originates from the lignin and cellulose of cell walls of a plant. The two most significant processes of vitrinite formation during peat and brown coal stage are humification and gelification. Humification involves slow progressive oxidation, which may be accelerated by addition of oxygen. In presence of oxygen, the lignin is first attached by wood and then by aerobic bacteria and is converted into humic substance. These are characterized by relatively high oxygen content and make more chances of presence of cleats in the coal. Vitrinite is derived from wood and parenchymatous tissues of roots, stem, barks and leaves composed of cellulose and lignin. Vitrinite fluorescence begins approximately at 0.5% random reflectance and attains a maximum intensity between 1% to 1.2% Rr. And thereafter declines rapidly. Chemically vitrinite is rich in aromatic substance.

#### **Classification of Vitrinite**

- **Telovitrinite:** It is a subgroup of the maceral group vitrinite, where botanical structures are preserved, which may or may not be visible. Parenchymatous and woody tissues of roots, stem barks and leaves composed of cellulose and lignin, which originates from herbaceous and arborescent plants, give rise to the maceral of this subgroup.
- **Telinite:** It is a maceral of the vitrinite group, subgroup telovitrinite consisting clearly recognizable cell walls of more or less intact plant tissues. The reflectance of telinite often differs from that of the cell filling. It describes layers of vitrinite with distinct cell structure. The term is restricted for coalified cell walls of recognizable plant tissue.



- **Collotelinite:** It is a maceral under subgroup telovitrinite, with a homogenous, more or less structureless appearance. The term denotes vitrinite layers which may exhibit poorly defined structure. It is widely used to determine the rank of coal and organic matter in sediments. It is derived from the parenchymatous and woody tissues of stems, leaves, and roots of cellulose and lignin.

### **4.3.2 Inertinite**

Based on optical and technological properties, macerals like fusinite, semifusinite, sclerotinite and micrinite were grouped inertinite. Subsequently four additional macerals- macrinite and inertodetrinite, funginite and secretinite are included in this group, latter two replaces sclerotinite. The term inertinite implies that the constituents are more inert than macerals of vitrinite and liptinite, particularly in carbonization process in which they behave as diluent. It has highest reflectance and textural patterns among all three maceral types.

#### **Classification of Inertinite**

- **Fusinite:** Since the dehydrated, charred and commonly thinned cell walls of the fusinite are composed of almost pure carbon, they are rather inert and resist any post depositional alteration by aerobic bacteria that might less stable macerals.
- **Semifusinite:** It is intermediate between vitrinite and fusinite showing well defined structure of wood and sclerenchyma. The cell cavities, round, oval and elongated in cross section, vary in size but generally smaller and sometimes less defined compared to that in fusinite. It is brighter than vitrinite but paler than fusinite of the same coal.
- **Funginite:** High reflecting single or multi celled fungal spores, sclerotia, hyphae and mecelia and other fungal remains are included in this class. It occurs as round or oval bodies of varying size having light grey to white colour. It may occur as an irregular cellular structure which is referred to as the 'plactenchyme' type of sclerotinite. It has strong relief and hardness.
- **Secretinite:** Round to oblong vesicle to non-vesicle, non-cellular forms with high reflectance are considered as secretinite. It has higher relief than macrinite. It is pale grey to yellowish white and non-fluorescing. It does not fuse during coking but may contribute to coke strength when dispersed in fused matrix.



### **4.3.3 Liptinite**

They originate from relatively rich plant material as sporopollenin, resin cutin, suberin, wax balsam, latex, fat and oil and as well as from bacterial degradation products of protein, cellulose, and other carbohydrates. Although the proportion of liptinite is small in most of the them, Gondwana coals rarely cross the 20% mark, high hydrogen content of liptinite influences the technological and suberinite have considerable palaeo-environment significance. Presence of alginate, particularly telalginite, invariably signifies lacustrine condition. During coalification, petrographic changes of liptinite differ for the different liptinite macerals. In sporinite a first jump occurs at a vitrinite reflectance of 0.5% R<sub>r</sub> when petroleum like substance begin to form. Liptinite macerals tend to retain their original plant form. These are hydrogen rich and have the highest calorific value of all coals macerals and also contributes maximum in making of methane gas.

### **4.4 SAMPLE PREPERATION**

To make a sample (pellet) of coal for petrography in case of studying macerals, following procedure is followed:

- Coal blocks were taken from different coal seams to cover all representative sample which are crushed and broken in the laboratory. It is allowed to pass through -60 and +25 mesh size.
- A representative coal block sample is used to prepare a pellet of 2.5 cm in diameter. The coal particles were mounted on Montana wax or resin epoxy at a low temperature. It is heated and mixed with nigrosine powder and was put in a mount which applies a pressure of 17 MPa pressure to remove bubbles.
- Carborundum powder (120,300, 600, 1200 ASTM mesh size), Alumina (0.05 micrometer), magnesia powder, glass plate.
- The sample is rubbed having carborundum powder of 120 mesh size on glass plate using little amount of water and then in series we use 300,600 mesh size carborundum and was rubbed on the pellet. Carboxyl carbide paper was taken and 600 mesh carborundum powder was rubbed on it.
- Pellet is again rubbed by magnesium, gamma-alumina powder simultaneously.



#### **4.5 REFLECTED LIGHT MICROSCOPE AND ITS WORKING**

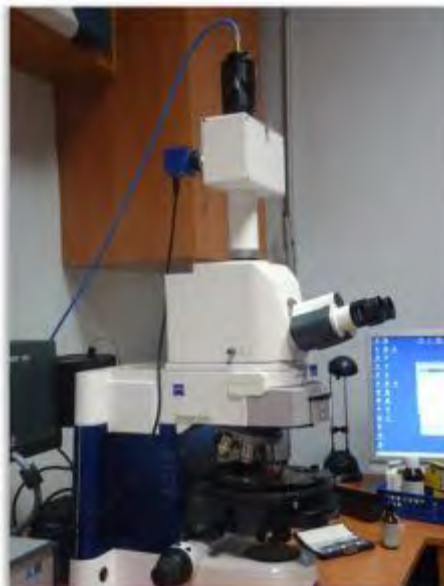
Reflected light microscopy is often referred to as incident light, epi-illumination, or metallurgical microscopy, and is the method of choice for fluorescence and for imaging specimens that remain opaque even when ground to a thickness of 30 micrometers. Much like the fluorescence microscope, in reflected bright field microscopy the sample is illuminated from above through the objective. The Köhler illumination principle applies in cases where the objective with its pupil plane is also utilized as the condenser.

Standard equipment eyepieces are usually of 10x magnification, and most microscopes are equipped with a nosepiece capable of holding four to six objectives. The stage is mechanically controlled with a specimen holder that can be translated in the x- and y- directions and the entire stage unit is capable of precise up and down movement with a coarse and fine focusing mechanism. Built-in light sources range from 20 and 100 watt tungsten-halogen bulbs to higher energy mercury vapor or xenon lamps that are used in fluorescence microscopy. Light passes from the lamphouse through a vertical illuminator interposed above the nosepiece but below the underside of the viewing tube head. The specimen's top surface is upright (usually without a coverslip) on the stage facing the objective, which has been rotated into the microscope's optical axis. The vertical illuminator is horizontally oriented at a 90-degree angle to the optical axis of the microscope and parallel to the table top, with the lamp housing attached to the back of the illuminator. The coarse and fine adjustment knobs raise or lower the stage in large or small increments to bring the specimen into sharp focus.



**Fig 23:** Setup for Petrographic Analysis( Source: google.com)





**Fig 24:** Reflectance Microscope (Source: Zeiss Official Site)

The coal petrography is performed by examining polished specimen of -60 mesh and +25 mesh size.

#### 4.6 Result:

		% Vit	% Vit mmf	% Int	%Int mmf	% Lip	%Lip mmf	%MM	%Rr
Jharia	B-1	63.2	67.6	21.2	22.7	9.1	9.7	6.5	0.76
	B-2	42.6	47	39.6	43.7	8.4	9.3	9.4	1.18



## **CHAPTER-5**

### **ESTIMATION OF IN-SITU GAS CONTENT OF COAL**

Coal gas reservoir deliverability is a function of the amount of gas-in-place and the gas storage capacity and movement characteristics. To reliably estimate these values, one must know in-situ – gas content and desorption gas behaviour. Desorption describes the physical mechanisms by which gas is released as reservoir pressure is reduced. Many accepted procedures for correcting and interpreting gas content data from coals are now found inadequate. Using these procedures without understanding their limitation can result in inaccurate simulation input data and reserve estimate.

#### **5.1 Gas Content**

It is the amount of gas present in the coal. Gas content usually increases with depth due to increase in the adsorptive capacity of coal with increasing hydrostatic pressure. The amount of gas present in the coal not only depends upon depth but also upon ash content, rank of coal, its burial history, chemical makeup of coal, temperature and the amount of gas lost over the geological time. Gas adsorbed on the coal cannot be detected on geophysical logs as in conventional reservoirs but is determined by volumetric calculations based on coring data.

Gas content can be determined by “**Direct**” or “**Indirect**” methods. While the Direct Method is globally accepted, data generated by indirect methods are not always reliable.

##### **5.1.1 In-Situ Gas Content Determination by Direct Method:**

The Direct method is being followed wherein the gas content of coal is determined by measuring the gas released from a sample of the coal core taken from the seam. A recovered coal sample is placed in sealed desorption canister. The reduction in pressure from a reservoir pressure to atmospheric pressure (at surface) causes the sample to release gas inside the canister. By measuring the amount of gas released and weight of the sample, the gas content is determined.

##### **Direct Method for in-Situ Gas Content:**

The Direct Method of determination of in-situ gas content of coal core samples. Coal core samples are collected during drilling of exploratory boreholes.

There are mainly three steps involved in measurement of in-situ gas content of coal core samples retrieved from an exploratory borehole.

- Sampling of coal cores
- Estimation of Lost Gas ( $Q_1$ ),
- Measurement of Desorbed Gas ( $Q_2$ ) and
- Evaluation of Residual Gas ( $Q_3$ )



- Total Gas Volume(Q)

#### **5.1.1.1 Lost Gas (Q<sub>1</sub>):**

Lost gas denoted by Q<sub>1</sub> is the amount of gas lost by core sample since its extraction from the undisturbed coal seams to its confinement in the desorption canister. The amount of lost gas depends primarily on the drilling medium and the time required for sealing the sample in the canister. Since water was used as the drilling medium for cooling, the lost time is calculated by the usual procedure as the time elapsed between initial desorption time when the core is half way out of the hole and the time of sealing the core in the canister. The amount of lost gas was estimated by fitting the least squares straight line for first few desorption data based on the relationship that the initial values of gas desorbed is proportional to the square root of desorption time.

A plot of the cumulative emission after each reading against the square root of the time that the sample has been desorbing ideally would produce a straight line. A sample of experimental data and supplementary information used to construct a lost gas graph follows

- Drilling Medium
- Time coalbed encountered (A)
- Time core started out of hole (B)
- Time core reached surface (C)
- Time core sealed in canister (D)
- Lost gas time calculation

#### **Lost Time:**

Lost Time = D – A (if air or mist is used)

Lost Time (if water or mud is used) =  $D - C + \left(\frac{C-B}{2}\right)$

#### **5.1.1.2 Desorbed Gas (Q<sub>2</sub>):**

Desorbed gas volumes were measured at atmospheric pressure and ambient temperature in a graduated glass burette by displacement of water.

First few desorption data were collected at intervals of every 5 minutes and later at intervals of every 10 to 15 minutes for the first few hours. Measurement of desorbed gas volumes were then continued once or twice every day till the released gas volume was 0.05 ml/g/day for several consecutive days.



The changes in temperature and pressure were recorded at the time of taking each reading for correction of gas volumes to standard temperature and pressure.

Cumulative value obtained by desorbed gas volume measurement gave desorbed gas ( $Q_2$ ) for the coal samples.

In addition to the data listed for lost gas volume, care must be taken that the data listed below are also noted and recorded.

- Volume measured at each desorption point.
- Head space volume.
- Canister temperature, ambient pressure and ambient temperature at each measure point.
- Periods of excessive positive pressure (greater than 10 psig) in the desorption canister(s).
- Desorbed gas sample collection intervals.
- Desorbed gas composition as a function of time.
- Length of desorption test.
- Sorption time.
- Sample weight

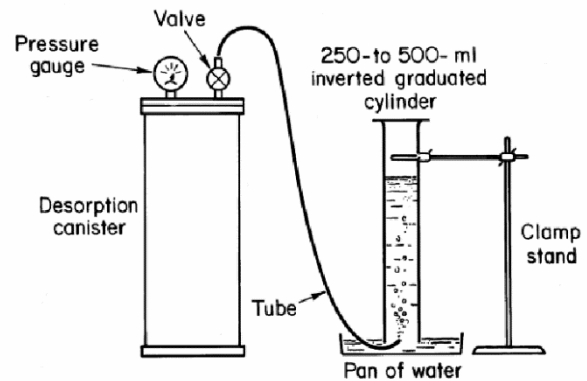


Fig. 25: Desorption Canister at CSIR-CIMFR

### **5.1.1.3 Residual Gas ( $Q_3$ ):**

Subsequent to the determination of  $Q_2$ , the coal core sample was weighed and known weight of the sample was transferred into an airtight steel vessel, which contained several brass rods to grind the coal samples. The steel vessel was initially purged off air prior to crushing and filled with nitrogen to avoid absorption of oxygen of the air initially present in the vessel by the crushed coal.

The crushing arrangement is similar in design as that used by Diamond and Levine and has been found to crush the coal samples to fine powders below 200 mesh BSS size in about 40 minutes. The volume of residual gas released on crushing was measured by water displacement method.



From the measured volume of gas obtained after crushing a portion of the samples, the residual gas ( $Q_3$ ) was calculated for the total weight of the samples.

#### **5.1.1.4 Total Gas Volume (Q):**

The total volume of gas obtained by the addition of  $Q_1$ ,  $Q_2$  and  $Q_3$  gave the in-situ methane content of the sample when divided by the total weight of the sample.

$$\text{Gas content } Q = (Q_1 + Q_2 + Q_3) / W$$

Where,

$Q$  = Gas content

$Q_1$  = Lost gas

$Q_2$  = Desorbed gas

$Q_3$  = Residual gas

$W$  = Weight of sample

#### **5.1.1.5 Result:**

- Name of Coalfield-Jharia Coalfield
- Borehole No.- JSJ
- Sponsor Company-ONGC
- Drilling Company- MECL
- State-Jharkhand
- Drilling Medium-Mud
- Core Size-NQ
- Ambient Temperature-30 degrees
- Type of core retrieval-wire line
- Core Interval- 713.00-716.00
- Desorbed Interval-714.65-715.15
- Core No.-5
- Date and Time Coring Started- 20/06/19 (15:00)
- Date and Time Coring Completed- 20/06/19 (17:10)
- Date and Time Pulling out started- 20/06/19 (17:32)
- Date and Time core reached surface(C)-20/06/19(17:45)
- Date and Time core sealed in canister(D)- 20/06/19(17:55)



- Total weight of Coal-1480 gm
- Wt. of crushed coal- 300 gm
- Residual gas volume-90 cc
- Temperature-30.5 degrees celsius
- Pressure-738 mm of Hg

Now,

$$\text{Lost Time} = (D-C) + ((C-B)/2)$$

$$\text{Lost Time} = \underline{16.5 \text{ minutes}}$$

Therefore,

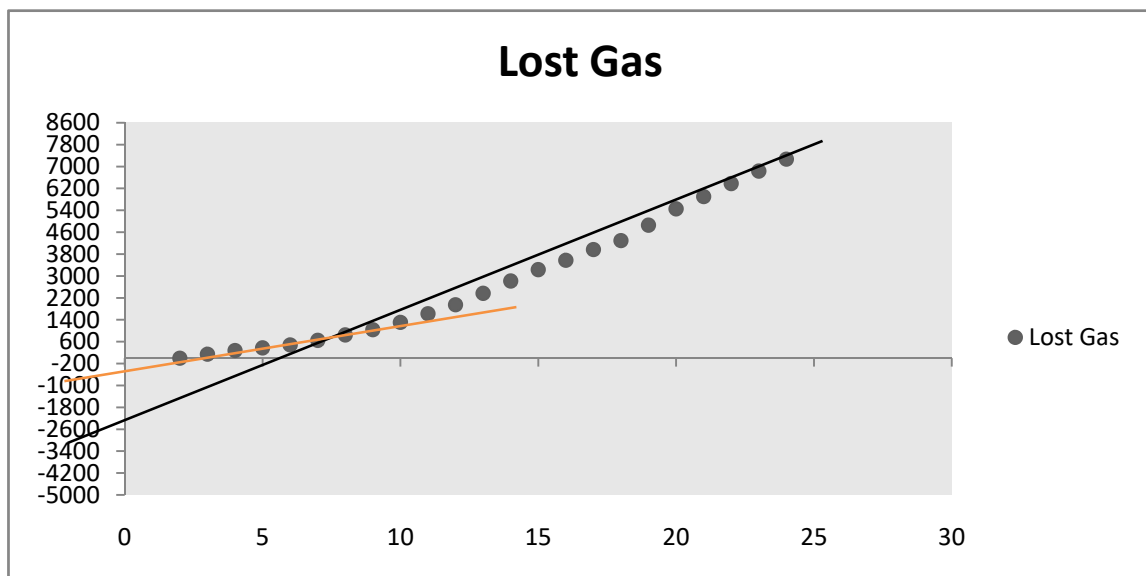
$$\text{Q} = \underline{6.178 \text{ cc/gm}}$$

Table 5: Direct Method For In Situ Gas Content Calculation

DATE (dd/mm/yy yy)	Temp. (in °C)	Atm. Press. (in Hg)	Can. Temp. (in °C)	Dessor b. Gas (ml)	Total des. Vol. (ml)	Cum. Des. Gas vol.)
20/06/2019	28	73.8	30.4	0	0	4.06
	28	73.8	30.4	80	80	4.64
	28	73.8	32.1	100	180	5.147
	28	73.8	36.8	120	300	5.061
	28	73.8	40.1	150	450	6.04
	28	73.8	45.4	220	670	6.44
	28	73.8	49.1	270	940	6.82
	28	73.8	51.2	290	1230	7.17
	28	73.8	49.8	270	1500	7.52
	28	73.8	51.3	300	1800	7.84
	28	73.8	52.1	310	2110	8.15
	28	73.8	51.6	300	2410	8.45
	28	73.8	50.4	280	2690	8.75
	28	73.8	51.6	230	2920	9.027
	28	73.8	51.8	200	3120	9.3005
	28	73.8	49.1	170	3290	9.565
	28	73.8	51.2	200	3490	10.075
	28	73.8	49.4	140	3630	10.559



	28	73.8	49.6	300	3930	11.895
	28	73.8	48.9	250	4180	13.0958
	28	73.8	48.9	200	4380	14.195
	28	73.8	49.3	310	4690	16.17
	28	73.8	49.4	200	4890	17.93
21/06/2019	28	73.8	49.6	600	5490	23.695
	29	73.7	50.1	560	6050	28.31
	31	73.7	49.1	300	6350	30.356
	33	73.8	50.1	150	6500	32.27
	33	73.8	49.4	90	6590	34.08
	30	73.8	49.6	110	6700	37.43
	28	73.8	50.7	120	6820	40.515
22/06/2019	28	73.8	51.1	100	6920	42.679
	27	73.7	50.4	70	6990	45.403
	27	73.7	50.6	60	7050	46.7
	32	73.7	50.4	50	7100	49.208
	33	73.7	50.3	0	7100	51.0049
	35	73.6	50.3	0	7100	52.739
	29	73.5	50.2	0	7100	54.69
	29	73.5	50.6	0	7100	56.049
23/06/2019	29	73.6	50.1	0	7100	60.179





### 5.1.2 In-Situ Gas Content Determination by Indirect Method

Conventional indirect methods for estimating gas content require sorption isotherm testing and analysis as well as knowledge of reservoir pressure and temperature. Isotherm testing is a laboratory measurement of the gas that can be adsorbed as a function of pressure. Isotherm testing indicates storage capacity, whereas canister desorption testing indicates actual gas content.

Sorption isotherm analyses are typically performed with laboratory grade methane (or gas mixture) up to and above the measured reservoir pressure.

1. Using Isotherms
2. Kim Method
3. Bulk density logs method

#### 5.1.2.1 Using Isotherm

Sorption analysis of bituminous coal typically incorporates Langmuir's theoretical relationship. Langmuir hypothesized that the volume of gas sorbed at a constant temperature (thus the term isotherm) is proportional to the concentration of the gas in free gas phase. In other words, the concentration of gas sorbed depends on the pressure.

#### 5.1.2.2 Using Kim's Method

In 1977, Kim proposed another indirect method for estimating the gas content of bituminous coalbeds (Kim, A.G. 1977). Kim combined relationship from various isotherm experiments to formulate one equation to describe the gas storage capacity as a function of temperature pressure, coal rank, and moisture content. The method was intended to approximate the dry, ash- free storage capacity of bituminous coal bed at any depth, when only proximate analysis data are available. Proximate analysis data includes moisture, ash, volatile matter, and fixed carbon contents present in coal sample. The Kim relationship is shown below.

$$G_{saf} = (0.75)(1-a-w_c)X[k_0(0.095d)^{n_0} - 0.14\{(1.8d/100) + 11\}]$$

Where,  $k_0$  and  $n_0$  are constant determined as

$$k_0 = 0.8 * (x_{fc}/x_{vm}) + 5.6$$

$$n_0 = 0.315 - 0.01 * (x_{fc}/x_{vm})$$

where,  $G_{saf}$  = adsorbed gas (daf) basis,  $cm^3$ ,

$a$  = Ash content, wt.%,

$w_c$  = Moisture content, wt.%,

$d$  = depth of sample, m

$x_{fc}$  = Fixed carbon, wt. %, and



$x_{vm}$  = Volatile matter content, wt. %

Because Kim's representation was derived empirically using regression analysis on specific sample proximate analysis result, some precautions are required. In Kim's equation gas content increases systematically with increasing rank and depth, and that it is not affected by the composition of the maceral (vitrinite, inertinite and exinite maceral groups). Further, the equations that describe the rank-dependent constants,  $k_o$  and  $n_o$  may be based on statistically inadequate data sets that are not applicable to other reservoirs.

### 5.1.2.3 Using Bulk Density Logs

Another indirect method involves estimating gas content from calibrated bulk density well logs (Olszewski, A.J. *et.al.*, 1993). Relationship between core-determined gas content and ash content allow such calculations. Because gas sorbed only on the coal fraction, an inverse correlation exists between coal gas and ash content data. Core ash content can be mathematically related to high resolution bulk density well log data because ash content usually has the greatest influence on coal bed reservoir density. Thus when you have representative in-situ gas content data available, you can estimate gas content from bulk density well log data. These indirect procedures can only be extrapolated to other wells or same as when you have adequate control information.



## **CHAPTER-6**

### **ADSORPTION ISOTHERM**

In 1938, Brunauer<sup>1</sup> categorized the adsorption of a gas on a solid into five types of isotherms. "Isotherm" refers to the volume of gas adsorbed on a solid surface as a function of pressure for a specific temperature, gas, and solid material. According to Brunauer's classification, a Type I isotherm, applies to the adsorption of gases in microporous solids. At high pressures, the amount adsorbed becomes asymptotic with pressure. At higher temperatures, the amount adsorbed decreases. At low pressures, large volumes of gas adsorb or desorb with small changes of pressure.

Consequently, that at abandonment of a coalbed methane (CBM) well at a low reservoir pressure, the recovery factor will be highly dependent on how far the drawdown in the reservoir proceeds. Type I isotherms closely describe the adsorption/desorption behavior of methane on coals, and the model has been applicable without exception. The Langmuir equation fits the adsorption data of methane on coal and is used exclusively in the CBM process to describe the Type I curves. The model is such a close fit of the adsorption data of all coals that use of the Langmuir equation is universal in the industry. Further, its simplicity is appealing.

The relation between the adsorbed gas volume and pressure due to overburden is fixed by Langmuir equation and adsorption isotherm (Langmuir curve). The adsorption isotherm assumes that the gas molecules attach on the surface of the coal and cover the coal surface as a single layer (mono layer). Nearly all the gas stored by adsorption exist in a condensed and near liquid state.

The typical formulation of Langmuir Isotherm is:

$$V(P) = \frac{V_L P}{P_L + P}$$

Where,

P = pressure (psia)

V (P) = amount of gas at P, also known as gas content (scf/ton)

V<sub>L</sub> = Langmuir volume parameter (scf/ton)

P<sub>L</sub> = Langmuir pressure parameter (psia)



## **6.1 Langmuir Isotherm:**

The most commonly used equation to describe the adsorption of gases on a solid is that of Langmuir, who developed the theory in 1918. The major assumptions in deriving the equation are as follows:

- One gas molecule is adsorbed at a single adsorption site.
- An adsorbed molecule does not affect the molecule on the neighbouring site.
- Sites are indistinguishable by the gas molecules.
- Adsorption is on an open surface, and there is no resistance to gas access to adsorption sites.

The assumption of an open surface is a troublesome one in the Langmuir theory because micropore throats leading to cavities in the coal may be thousands of molecular diameters long and only several molecular diameters wide.

Therefore, the adsorbate does not have unrestricted access to the adsorption sites, which are far from comprising an open surface.

The development of the Langmuir equation reveals how the faulty assumption still serves the true phenomenon.

At equilibrium for a given temperature, the rate of molecules of adsorbed gas leaving adsorption sites will equal the rate of those attaching to adsorption sites, somewhat similar to evaporation from the surface of liquid water.

This state of equilibrium can be described if we let  $r$  = rate of adsorption and desorption from complete monolayer coverage at constant temperature

The Langmuir isotherm equation has 2 parameters:

### **6.1.1 Langmuir Volume ( $V_L$ ):**

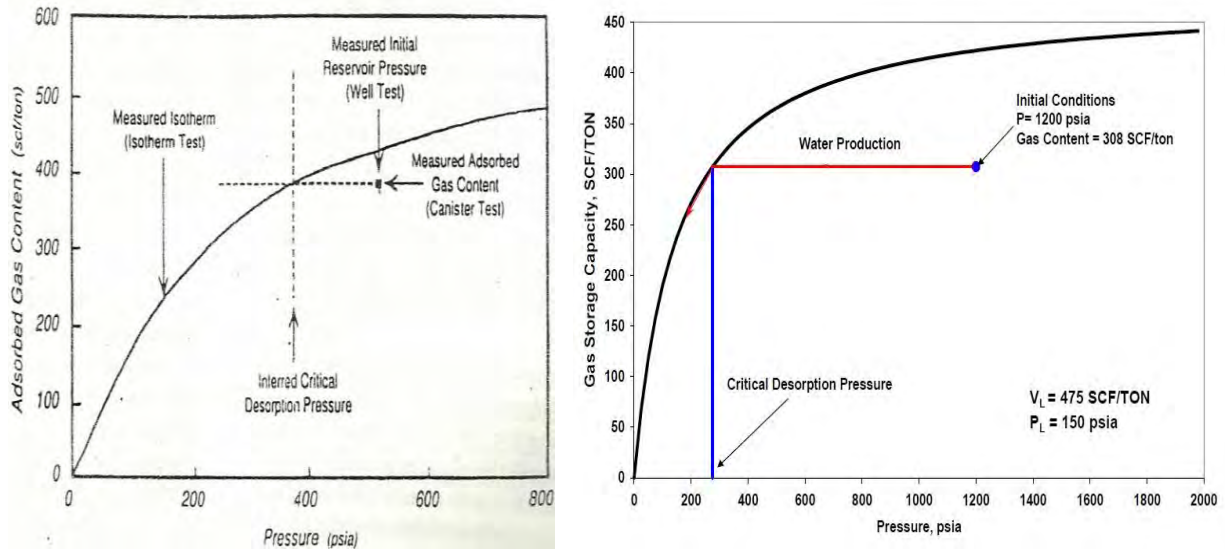
This is the maximum amount of gas that can be adsorbed on a piece of coal at infinite pressure. The following image is of a typical isotherm and shows its relationship with  $V_L$ .

Typically, the units for the Langmuir volume parameter ( $V_L$ ) are scf/ton (volume gas per mass of unit coal). The volume parameter can be converted to a scf/ft<sup>3</sup> (volume gas per volume unit coal) by multiplying it by the coal bulk density.



### 6.1.2 Langmuir Pressure ( $P_L$ ):

This parameter affects the shape of the isotherm. The Langmuir pressure is the pressure at which



The Impact of Langmuir Volume and Pressure Constant on the Isotherm

**Fig 26:** The impact of Langmuir Volume and Pressure Constant on the Isotherm

½ the gas is desorbed from the coal.

## 6.2 Methods carried out for Adsorption Isotherm:

### 6.2.1 Sample preparation:

It involves three steps which are following:

#### a) Sample Selection:

Sample for Isotherm can be collected from exploratory borehole or from underground mines and sample is selected on the basis of depth and ash content. For experiment, ash free coal is suitable to avoid the influence of mineral matter on adsorption capacity. For this purpose, before performing experiment, proximate analysis of the sample is carried out. The purpose of proximate analysis is to quantify the mass of coal present in the isotherm samples.

#### b) Sample Crushing:

The sample is then crushed and passed to a sieve of size  $-0.630 \text{ mm} + 0.400 \text{ mm}$ . The small size of coal sample is used for adsorption and desorption of methane in a shorter time period. A larger particle size results in longer waiting periods for reaching sorption equilibrium.



**c) Equilibration of moisture:**

Moisture content is an important influencing parameter of adsorption isotherm. Equilibration of moisture affords a means of estimating the bed moisture of either coal that is wet and shows visible surface moisture, or coal that may have lost some moisture. When samples are collected, the equilibrium moisture is considered to be equal to bed moisture with the exception of some low rank coals that yield equilibrium moisture values below bed moisture.



Fig. 27: Desiccator containing K<sub>2</sub>SO<sub>4</sub> at the bottom

For samples preparation, coal samples are weighted and at 50°C and deionized or distil water is added to increase the moisture content greater than the equilibrium moisture content. A known weight of the sample is placed in an evacuated desiccator containing water vapor in equilibrium with saturated solution of K<sub>2</sub>SO<sub>4</sub> and desiccator is placed in an air incubator that maintains reservoir temperature.



Fig. 28: Air incubator to maintain the temperature during sample preparation



This saturated solution of  $K_2SO_4$  is used to maintain the relative humidity up to 96%. Samples are periodically reweighed and placed in the evacuated desiccator until a change in weight does not exceed 0.001 gm. Thus, the coal sample obtained in equilibrium moisture condition is ready for methane adsorption isotherm studies.

### **6.3 Adsorption Isotherm Determination:**

The adsorption isotherm determination experiment involves 2 stages:

1. Measurement of void space (dead volume) in the samples.
2. Determination of adsorption capacity.

In this experiment adsorbate (pure methane) is supplied to adsorbent (coal sample) to adsorb methane molecule at reservoir temperature and pressure and the adsorbed gas volume is calculated by drop in pressure transducer.



Fig 29: High Pressure adsorption Isotherm Construction at CSIR-CIMFR

#### **6.3.1 Measurement of dead volume:**

The volume which is not occupied by the sample is known as dead volume. It is determined by non-adsorbing gas usually helium, which is an inert gas and has the smallest molecule that can enter easily into the micro-pores of the samples. For determination of dead volume, equilibrated moisture coal



sample is put into the sample cell. Dead volume is determined by evacuating and then filling the reference cell with helium and allowing it to equilibrate at reservoir temperature. Helium is then admitted to sample cell from reference cell and a drop in pressure is recorded. Dead volume is calculated by measured drop in pressure.

Procedure of determination of dead volume:

- The equilibrated moisture coal sample was into the sample cell.
- Now vacuum pump is switched on, to evacuate the air present in the sample cell as well as reference cell.
- As reference cell and sample cells were kept in water bath, the water bath should be at the desired temperature for the isotherm determination.
- Valves to the vacuum pump and sample cell were then closed and valves to reference cells were opened.
- Then helium gas was injected into the reference cell at known pressure.
- Now valves to reference cell were closed and the temperature is allowed to equilibrate with the water bath for one hour.
- Now valves to reference cells were opened and then helium was slowly admitted to the sample cells.
- The setup was left for one hour for temperature equilibrium in the sample cells.
- Drop in pressure was recorded which determines the dead volume.

### **6.3.2 Measurement of adsorption capacity:**

After determination of dead volume, the apparatus is again evacuated for determination of the adsorption isotherm. Methane is added to reference cell, allowed to equilibrate at reservoir temperature and then admitted into the sample cell. The amount of gas adsorbed is calculated by drop in pressure. The drop in pressure is recorded to determine the adsorption isotherm. The procedure is repeated at increasing pressure steps until the highest pressure is reached. Computation of Langmuir pressure and volume and adsorption isotherm is performed on Excel spreadsheet.

Procedure for measurement of adsorption isotherm:

- After determination of dead volume, valves to reference cells, sample cells and vacuum lines were opened.
- The whole system was evacuated.
- Valves to vacuum pump and sample cells were then closed and valves to reference cells were opened.
- The methane gas was introduced into the sample cells at a known lowest at 500 kPa.



- Valves to reference cells were closed and temperature was allowed to equilibrate with water bath for one hour.
- Now valves to sample cells were opened and methane gas was slowly admitted to sample cells.
- The whole setup was left, for at least one hour for temperature equilibrium in the sample cell.
- Drop in pressure was recorded.
- Pressure was increased in the reference cell to the next pressure step by adjusting the regulator on the gas cylinder.
- The steps were repeated at increasing pressures up to 8000 kPa.
- The above procedure was repeated by decreasing pressures up to 500 kPa.

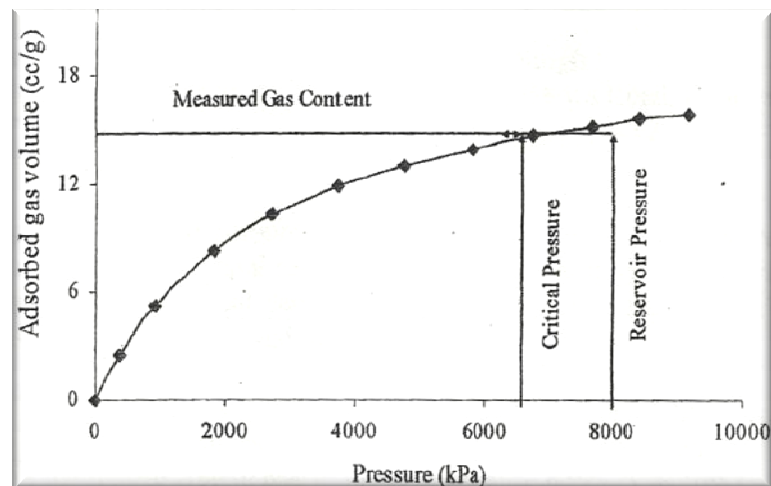


Fig. 30: Methane Adsorption Curve

#### **6.4 Application of Adsorption Isotherm:**

Adsorption isotherm is used-

- 1) Determination of the saturation level of coal.
- 2) Determination of the critical desorption pressure.
- 3) Determination of the abundant reservoir pressure.
- 4) Determination of the recovery factor.
- 5) Future prediction of recovery of gas by reducing hydrostatic pressure of the reservoir.
- 6) Determination of total recoverable gas from the well.
- 7) Analysis of the age of the well.
- 8) Investigation of the economic viability of the well.



## **6.5 Significance of adsorption isotherm:**

### **1) Determination of degree of saturation of coal seam**

By preparing an isotherm we can calculate the maximum volume of gas ( $V_L$ ) and Langmuir pressure. We can also calculate total gas content of coal ( $V_A$ ) by direct method.

If  $V_A = V_L$ , coal is said to be saturated.

If  $V_A < V_L$ , coal is said to be under saturated. Higher the degree of saturation higher is the gas production.

### **2) Assessment of rate of gas production –**

In order for the gas to be produced it has to diffuse methane from the coal matrix to the cleat system. We have to reduce the overlying pressure by hydro-fracturing & dewatering. If the pressure is known, we can calculate the corresponding volume of gas desorbed by reducing pressure.

### **3) Determination of percentage recovery of gas during production -**

To start the diffusion, we have to reduce the pressure of coal seam. After a certain limit we cannot reduce the reservoir pressure. This limit is called abandoned pressure and the corresponding volume of gas is called the abandoned gas volume which is unrecoverable i.e., we cannot exploit the 100% of the contained in the seam. In actual practice we can exploit only 30-45 % of adsorbed gas volume due to technical problem.

## **6.6 Result:**

**Table6:** Adsorption Isotherm Method For In Situ Gas Calculation

Input Sample Details		
Sample		<b>DST/95/174/-72M</b>
Sample Location		<b>0</b>
Date		<b>26.04.2016</b>
Vessel Number		<b>4</b>

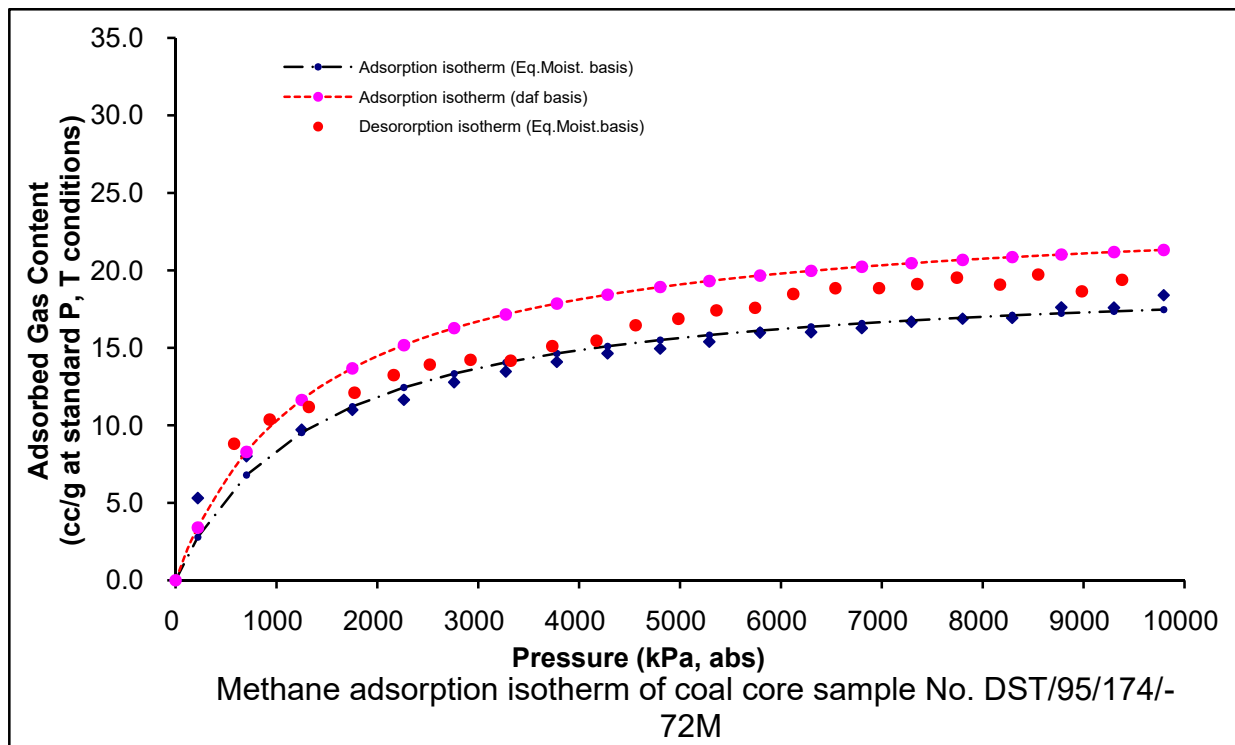


Temperature(°C)	<b>30</b>
Eq. Moist (%)	<b>1.1</b>

Table 6: Adsorption Isotherm Method For In Situ Gas Calculation

Input CH <sub>4</sub> Pressures			Output Adsorbed Gas Content		
Pressure		Pressure	Moisture Equilibrated		daf
(kPa, abs)		(atm)	cc/g (at std. Reporting)		cc/g (at std. Reporting)
<b>221</b>		2.18	<b>5.3</b>		6.5
<b>703</b>		6.94	<b>8.0</b>		9.8
<b>1250</b>		12.34	<b>9.7</b>		11.8
<b>1752</b>		17.29	<b>11.0</b>		13.4
<b>2264</b>		22.34	<b>11.6</b>		14.2
<b>2761</b>		27.25	<b>12.8</b>		15.6
<b>3273</b>		32.30	<b>13.5</b>		16.4
<b>3780</b>		37.31	<b>14.1</b>		17.2
<b>4282</b>		42.26	<b>14.6</b>		17.9
<b>4804</b>		47.41	<b>14.9</b>		18.2
<b>5291</b>		52.22	<b>15.4</b>		18.8
<b>5793</b>		57.17	<b>16.0</b>		19.5
<b>6300</b>		62.18	<b>16.0</b>		19.5
<b>6802</b>		67.13	<b>16.3</b>		19.9
<b>7294</b>		71.99	<b>16.7</b>		20.4
<b>7801</b>		76.99	<b>16.9</b>		20.6
<b>8293</b>		81.85	<b>16.9</b>		20.7
<b>8780</b>		86.65	<b>17.6</b>		21.5
<b>9302</b>		91.80	<b>17.6</b>		21.5
<b>9794</b>		96.66	<b>18.4</b>		22.5
<b>Output results</b>			<b>As analysed</b>	<b>daf</b>	
Langmuir Volume (V <sub>L</sub> ) (cc/g)			19.9	24.3	
Langmuir Pressure (P <sub>L</sub> ) (kPa)			1357	1357	
Langmuir Pressure (P <sub>L</sub> ) (atm)			13.4	13.4	







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# WADIA INSTITUTE OF HIMALAYAN GEOLOGY

33 General Mahadeo Singh Road, Dehradun (India) – 248001



This is to certify that

**Mr HRITHIK VERMA**

Of

**University Of Petroleum and Energy Studies  
Bidholi, Dehradun.**

Has successfully completed Summer Internship on the project titled

**“STUDY OF SOURCE MECHANISM OF EARTHQUAKE IN THE KISHTWAR REGION BY USING ISOLA  
CODE”**

**From 1<sup>st</sup> June to 1<sup>st</sup> August, 2019**

Place: Dehradun

**Date: 1<sup>st</sup> August 2019**

**Dr.Sushil Kumar**  
**Scientist „F“**  
**(Supervisor)**





# हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड

(भारत सरकार का उपक्रम) रजिस्टर्ड ऑफिस 17 जमशेदजी टाटा रोड, मुंबई - 400020.

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Thalamuthu Natarajan Building, 1, Gandhi-Irwin Road, Post Box. No. 3045, Chennai - 600 008.  
टेलिफोन / Telephone : 044-2888 2100, 2888 2200  
CIN : L23201MH1952GOI008858

Ref: SZ/PB/HR

Date:23.07.2019

### WHOMSOEVER IT MAY CONCERN

This is to certify that Mr Robin Miranda (SAP Code:500054664), student of III B.Tech 'Geo Science' from University of Petroleum and Energy Studies had undergone Internship Training in our *Chennai Lube Plant* from 25.06.2019 to 22.07.2019.

His conduct during the above period was "Satisfactory".

P Balakrishnan

Sr Manager – HR, SZ.



# **FOCUS ENERGY LIMITED**

REGD. OFFICE : 3<sup>rd</sup> FLOOR, GOPALA TOWER, 25 RAJENDRA PLACE, NEW DELHI - 110008 (INDIA)  
PHONES : (011) 25747696, 25751934/35/36, FAX: (011) 25751937  
CIN No.: U74999DL1986PLC023587

Ref No.Focus/Int./2019/2


July 4, 2019

## **TO WHOMSOEVER IT MAY CONCERN**

We confirm that Mr. Manpreet Singh Guliani studying in B.Tech Geoscience (2016-2020) in University of Petroleum and Energy Studies did his internship for the period from 27<sup>th</sup> May, 2019 to 28<sup>th</sup> June, 2019 in Focus Energy Limited. He did his internship in log interpretation of various wells in the company.

Thank you,

For Focus Energy Limited

  
V. Krishna Kumar  
Asstt. General Manager



Mr. Manpreet Singh Guliani  
B.Tech Geoscience (2016-2020)  
University of Petroleum and Energy Studies

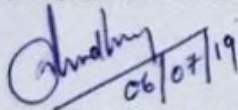


TO WHOM IT MAY CONCERN

This is to certify that Ms. Anushka Agarwal has successfully completed her Summer Internship Five Week Programme from 03rd June 2019 to 06th July 2019 at our Company.

During the period of her internship she demonstrated good design skill with a self motivated attitude to learn new things. Her performance exceeds expectation and was able to complete the project successfully on time. We wish her every success in her life.

For JBLGEO TECHNOLOGIES PVT LTD

  
06/07/19  
Authorized Signatory



JBLGEO Technologies Pvt. Ltd.

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Shipra Sun City, Indirapuram  
Ghaziabad, UP - 201014

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E: [info@jbltech.in](mailto:info@jbltech.in)  
W: [www.jbltech.in](http://www.jbltech.in)





RIL (E&P)/HR/19-20/S109

21<sup>st</sup> June '2019

### CERTIFICATE

This is to certify that **Mr. Rishabh Garg**, pursuing **B.Tech ( Geo-science Engineering)** from **University of Petroleum And Energy Studies, Dehradun** has done Internship (Training) on the Topic "**Overview of KGD6 and Hydrate Formation and Inhibitors**" during 27.05.2019 to 21.06.2019 to as a partial fulfillment for the award pursuing **B.Tech ( Geo-science Engineering)**

His conduct during this period was GOOD.

For RELIANCE INDUSTRIES LIMITED

B. Mallikarjuna Rao  
B. Mallikarjuna Rao  
General Manager



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# **WADIA INSTITUTE OF HIMALAYAN GEOLOGY**

**33 General Mahadeo Singh Road, Dehradun (India) – 248001**



**This is to certify that**

**Mr SANJAY YADAV**

**Of**

**University Of Petroleum and Energy Studies  
Bidholi, Dehradun.**

**Has successfully completed Summer Internship on the project titled**

**“STUDY OF WAVEFORM INVERSION OF MODERATE EARTHQUAKE IN KISHTWAR REGION BY USING  
ISOLA TECHNIQUE”**

**From 1<sup>st</sup> June to 1<sup>st</sup> August, 2019**

**Place: Dehradun**

**Date: 1<sup>st</sup> August 2019**

**Dr.Sushil Kumar  
Scientist „F“  
(Supervisor)**



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Date-15-07-2019

### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Rahul kumar student of B.Tech - Power system Engineering of collage of Engineering studies(COES) Under University of petroleum & Energy studies(UPES), Dehradun has done Vocational Training at our Nabinagar site, Nabinagar Power Generation Company(NPGC), Bihar state, India from 25<sup>th</sup> May 2019 to 10<sup>th</sup> July 2019.

During the training Period his performance was Satisfactory. And we wish him all the best for his Future endeavors.



For, NIGAM ENTERPRISES PVT. LTD.





July 20, 2019

To Whomsoever It May Concern:

This is to certify that Shubham Dhiman pursuing his B.Tech Power System Engineering from University of Petroleum And Energy Studies, Dehradun has successfully completed 2 months of his internship and training with Smart Joules Pvt. Ltd. His internship tenure is from 20<sup>th</sup> May 2019 to 20<sup>th</sup> July 2019.

As an Energy Engineer Intern with Mr. Manash Jyoti Deka (BMS Project Manager) he worked in the project – "DeJoule Deployment". Shubham was responsible for Workstation Installation in MGCH and GKNMH Hospitals, UPS Layouts For SSH and SPH Hospitals and Debugging and testing of HVAC equipments and DeJoule equipments.

He has worked effectively and efficiently for performing each task assigned to him throughout his internship period.

We wish the very best for all his future endeavors.

Sustainably,

Arjun P Gupta  
Founder and CEO  
Smart Joules Pvt. Ltd.



**Smart Joules Pvt. Ltd.**

Regd. Office: 34 Shri Ram Road, Civil Lines, Delhi – 110054

CIN.: U40300DL2014PTC273904

[www.smartjoules.in](http://www.smartjoules.in); [info@smartjoules.in](mailto:info@smartjoules.in); +91-9811103484





राष्ट्रीय इस्पात निगम लिमिटेड Rashtriya Ispat Nigam Limited

विशाखपट्टणम इस्पात संयंत्र Visakhapatnam Steel Plant

तकनीकी प्रशिक्षण केन्द्र Technical Training Institute

विशाखपट्टणम Visakhapatnam-530031

No. 08082

प्रमाण पत्र CERTIFICATE

17/06/2019 to 03/08/2019

प्रामाणित किया जाता है कि श्री/This is to certify that

SRITHEERUBUDUR D. MADHAVAN

Mr./Ms. a student of

111/B TECH/ELECTRICAL ENGG

(वर्ष/पाठ्यक्रम/शाखा Year/Course/Branch/

UNIVERSITY OF PETROLEUM & ENERGY STUDIES, DEHRADUN

विद्यार्थी ने from से

INTERNSHIP

has undergone प्रशिक्षण training विशाखपट्टणम इस्पात संयंत्र

THERMAL POWER PLANT

के at Visakhapatnam Steel Plant in

17/06/2019

03/08/2019

विभागों में depts. from दि से to तक प्राप्त किया।

\*\*\*\*\*

परियोजना शीर्षक The project title is

है।

प्रशिक्षण अवधि में उनका आचरण His/Her conduct during the period of training is

GOOD है।

स्थल/Place : Visakhapatnam

दि/Date 03/08/2019

*Mac*

प्रशिक्षण समन्वयक के हस्ताक्षर मोहर के साथ।

Signature of Training Co-Ordinator with Seal

जे. प्रभाकर राव-J. PRABHAKARA RAO

प्रबंधक (प्रशिक्षण)-Manager (Tg.)

तकनीकी प्रशिक्षण संयंत्र

Technical Training Institute

आर आइ एन एल, विशाखपट्टणम इस्पात संयंत्र

RINL, Visakhapatnam Steel Plant

विशाखपट्टणम-Visakhapatnam-530 031





# यूजेवीएन लिमिटेड

(उत्तराखण्ड सरकार का उपक्रम)

## UJVNL LIMITED

(A Govt. of Uttarakhand Enterprise)

अधिशास्त्री अभियन्ता (उत्पादन) चिब्रो विद्युत गृह, चिब्रो, पो 0 ओ 0 चिब्रो वाया कालसी देहरादून, -248164 दूरभाष 01360-254009 फैक्स 01360-222180  
Executive Engineer (Generation), Chibro Power Station, Chibro, P.O Chibro Via kalsi Dehradun - 248164 Ph- 01360-254009 Fax 01360-222180

CIN No.U40101UR2001SGC025866

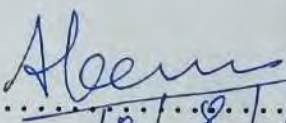
ISO 9001:2008 Certified

### To Whom It May Concern:

This is to certify that **Mr. Aditya Arya S/o Mr. Uttam Kumar Arya** Student of B-Tech 3<sup>rd</sup> Year (Power System Engineering) of University of Petroleum & Energy Studies, Bidholi Via Prem Nagar, Dehradun (Uttarakhand) has undergone **Industrial/ summer/ practical training** under Chibro Power Station, Chibro (Dehradun) from **07-06-2019 to 20-07-2019** as per terms & condition contained in Nigam Order No 314/UJVNL/ 05/Director HR/DGM (HR)/Industrial Training 2019 Dated 07-06-2019.

During above training period, his behavior & conduct were found to be good.

We wish him all success in his life.

Signature .....  .....  
10/08/19

Name: **Anand Kumar** Executive Engineer (Generation)  
Chibro Power Station

Designation: **Executive Engineer (Generation)**

Official Seal/Stamp.....



765/400/220 के.वी.उपकेन्द्र, रूडकी रोड मटौर (दौराला), मेरठ-250 221 दूरभाष 01237-231319, 231673

765/ 400/220 KV SUBSTATION, ROORKEE ROAD, MATAUR (DAURALA), MEERUT. TELE.- 01237-231319, 231673

सन्दर्भ.स. उ.क्षे-1/मेरठ/मा.स. /प्रशिक्षण

दिनांक- 23.09.2019

**To whom so ever it may concern**

यह प्रमाणित किया जाता है कि इंस्टिट्यूट ऑफ पेट्रोलियम & एनर्जी स्टडीज, देहरादून में अध्ययनरत श्री अनुभव ठाकुर (500054937), बी.टेक. (PSE) 3<sup>rd</sup> वर्ष के छात्र ने अपना औद्योगिक प्रशिक्षण दिनांक 28.05.2019 से 20.07.2019 तक 400/220 के वी उपकेन्द्र, देहरादून में सफलतापूर्वक पूरा कर लिया है. प्रशिक्षण अवधि के दौरान श्री अनुभव ठाकुर का प्रदर्शन अच्छा रहा है।

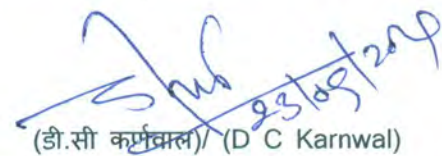
यह प्रमाणपत्र इन्हे केवल पाठ्यक्रम / शैक्षणिक आवश्यकता के तहत न कि किसी अन्य उद्देश्य के लिए जारी किया जा रहा है।

हम इनके उज्ज्वल भविष्य की कामना करते हैं

This is to certify that Sh Anubhav Thakur (500054937) student of B.Tech (PSE) 3<sup>rd</sup> Year of Institute of Petroleum & Energy, Dehradun has successfully completed his industrial training at 400/220 KV sub-station, Dehradun for the period from 28.05.2019 to 20.07.2019. The performance of Sh Anubhav Thakur is good.

This certificate is being issued to him as required under his course curriculum / academic requirement only & not for any other purpose.

We wish every success in his career.



(डी.सी. कर्णवाल) / (D C Karnwal)

उप प्रबंधक (प्र.मा.स.)/Dy Manager (I/C HR)

**दीप चन्द कर्णवाल / D. C. Karnwal**  
उप प्रबंधक (प्र.मा.स.) / Dy. Manager (I/C HR)  
पावरग्रिड, मेरठ / POWERGRID, MEERUT





July 20, 2019

To Whomsoever It May Concern:

This is to certify that Ayush Saini pursuing his B.Tech Power System Engineering from University of Petroleum And Energy Studies (UPES), Dehradun has successfully completed 2 months of his internship and training with Smart Joules Pvt. Ltd. His internship tenure is from 20<sup>th</sup> May 2019 to 20<sup>th</sup> July 2019.

As an Energy Engineer Intern with Mr. Manash Jyoti Deka (BMS Project Manager) and Mr. Rakesh Kumar (BMS Project Manager) he worked in the project – "Building Management System (BMS) Planning and Deployment". Ayush was responsible for Autocad Drawings of Panels and Layouts, Earthing Tests for Panels, DeJoule Deployment Schematics and Vendor Hunting for Modbus.

He has worked effectively and efficiently for performing each task assigned to him throughout his internship period.

We wish the very best for all his future endeavors.

Sustainably,

Arjun P Gupta  
Founder and CEO  
Smart Joules Pvt. Ltd.



**Smart Joules Pvt. Ltd.**

Regd. Office: 34 Shri Ram Road, Civil Lines, Delhi – 110054

CIN.: U40300DL2014PTC273904

[www.smartjoules.in](http://www.smartjoules.in); [info@smartjoules.in](mailto:info@smartjoules.in); +91-9811103484



# पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड

POWER GRID CORPORATION OF INDIA LIMITED

(भारत सरकार का उद्यम)

(A Government of India Enterprise)



765/400/220 के.वी.उपकेन्द्र, रूडकी रोड मटौर (दौराला), मेरठ-250 221 दूरभाष 01237-231319, 231673

765/ 400/220 KV SUBSTATION, ROORKEE ROAD, MATAUR (DAURALA), MEERUT. TELE.- 01237-231319, 231673

सन्दर्भ.स. उ.क्षे-1/मेरठ/मा.स./प्रशिक्षण

दिनांक- 23.09.2019

## To whom so ever it may concern

यह प्रमाणित किया जाता है कि इंस्टिट्यूट ऑफ पेट्रोलियम & एनर्जी स्टडीज, देहरादून में अध्ययनरत श्री मृतुन्जय सिंह (500053299), बी.टेक. (PSE) 3rd वर्ष के छात्र ने अपना औद्योगिक प्रशिक्षण दिनांक 28.05.2019 से 20.07.2019 तक 400/220 के वी उपकेन्द्र, देहरादून में सफलतापूर्वक पूरा कर लिया है। प्रशिक्षण अवधि के दौरान श्री मृतुन्जय सिंह का प्रदर्शन अच्छा रहा है।

यह प्रमाणपत्र इन्हे केवल पाठ्यक्रम / शैक्षणिक आवश्यकता के तहत न कि किसी अन्य उद्देश्य के लिए जारी किया जा रहा है।

हम इनके उज्ज्वल भविष्य की कामना करते हैं

This is to certify that Sh Martunanjay Singh (500053299) student of B.Tech (PSE) 3<sup>rd</sup> Year of Institute of Petroleum & Energy, Dehradun has successfully completed his industrial training at 400/220 KV sub-station, Dehradun for the period from 28.05.2019 to 20.07.2019. The performance of Sh Martunanjay Singh is good.

This certificate is being issued to him as required under his course curriculum / academic requirement only & not for any other purpose.

We wish every success in his career.

(डी.सी कर्णवाल)/ (D C Karnwal)

उप प्रबंधक (प्र.मा.स.)/Dy Manager (I/C HR)

दीप चन्द कर्णवाल / D. C. Karnwal  
उप प्रबंधक (प्र.मा.स.) / Dy. Manager (I/C HR)  
पावरग्रिड, मेरठ / POWERGRID, MEERUT



TPDDL/HR L&D/INT/S.No. 1774

Date 16/07/2019

TO WHOMSOEVER IT MAY CONCERN

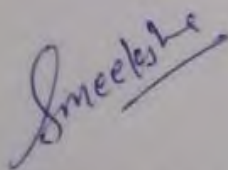
This is to certify that **Mr. Parth Pratim Rai** from **University of Petroleum and Energy Studies** has undergone an Internship for a period of **7 Weeks** from **27<sup>th</sup> May to 15<sup>th</sup> July 2019** at Tata Power DDL on the following project-

**"Electric Substation Automation & Protection System (LDR)"**

**In Technical Services- Grid Automation Department**

We wish him success in his future endeavors.

**FOR TATA POWER DELHI DISTRIBUTION LIMITED,**



**Smeeksha Gulati**  
**HoG (Capability Building- II)**  
**HR – Learning & Development**

**TATA POWER DELHI DISTRIBUTION LIMITED**

TPDDL Learning Centre, CENPEID

Pocket F, Sector – 11, Rohini, Delhi – 110085

Tel. : 011-65464370, 011-27570583 Telefax : 011-27570725



## SHAVAK NANAVATI TECHNICAL INSTITUTE

An ISO 9001:2008 Organization

### CERTIFICATE

*This is to certify that Rishav Ratnam (Reg. No. VT20190590),  
student of UNIVERSITY OF PETROLEUM AND ENERGY STUDIES,  
has undergone Vacation Training Programme at **TATA STEEL LTD.**, Jamshedpur from  
28-May ,2019 to 16-July ,2019 . The details of the programme are as under:*

Department Covered	<b>MILLS &amp; UTILITIES ELECTRICAL MAINTENANCE</b>
Project Title	<b>STUDY OF POWER GENERATION &amp; DISTRIBUTION</b>

He/She has successfully completed the Programme.



Place : **Jamshedpur**  
Date : **05-08-2019**  
Ref No. : **VT20190590**

**Coordinator**  
**Vacation Training**  
**TATA STEEL LTD.**

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SHAVAK NANAVATI TECHNICAL INSTITUTE, TATA STEEL Ltd, N-ROAD, BISTUPUR, JAMSHEDPUR -831001, INDIA  
Telephone : 91-657-2320243, Fax : 91-657-2320243, E-mail-sntl.office@tatasteel.com



## Training Certificate

This is to certify that **Ms. Sakshi Saxena** student University of Petroleum & Energy Studies, Dehradun has successfully completed Internship Training in the field "**Electrical**" at Adani Dahanu Thermal Power Station of Adani Electricity Mumbai Ltd. for the period 28<sup>th</sup> May, 2019 to 12<sup>th</sup> July, 2019.

During Internship period, we found her sincere, hardworking, and result oriented. He worked well as part of a team during her tenure. We take this opportunity to wish all the best for her future assignment.



A handwritten signature in blue ink, appearing to read "D. R. Mantri".

**D. R. Mantri**  
In-Charge (Training)



TPDDL/HR L&D/INT/S.No. 1775

Date 16/07/2019

**TO WHOMSOEVER IT MAY CONCERN**

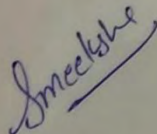
This is to certify that **Mr. Shubham Gupta** from **University of Petroleum and Energy Studies** has undergone an Internship for a period of **7 Weeks** from **27<sup>th</sup> May to 15<sup>th</sup> July 2019** at Tata Power DDL on the following project-

**"Grid Substation Automation & Basic Protection System"**

**In Technical Services- Grid Automation Department**

We wish him success in his future endeavors.

**FOR TATA POWER DELHI DISTRIBUTION LIMITED,**



**Smeeksha Gulati**  
**HoG (Capability Building- II)**  
**HR – Learning & Development**

**TATA POWER DELHI DISTRIBUTION LIMITED**

TPDDL Learning Centre, CENPEID  
Pocket F, Sector – 11, Rohini, Delhi – 110085  
Tel. : 011-65464370, 011-27570583 Telefax : 011-27570725



TPDDL/HR L&D/INT/S.No. 1772

Date 16/07/2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Mr. Vipul Grover** from **University of Petroleum and Energy Studies** has undergone an Internship for a period of **7 Weeks** from **27<sup>th</sup> May to 15<sup>th</sup> July 2019** at **Tata Power DDL** on the following project-

**"Impact of Electric Vehicles on Tata Power DDL Load and Reactive Power  
Analysis of Tata Power DDL with new compensation methods"**

**In Power System Control Department**

We wish him success in his future endeavors.

**FOR TATA POWER DELHI DISTRIBUTION LIMITED,**



**Smeeksha Gulati  
HoG (Capability Building- II)  
HR – Learning & Development**

**TATA POWER DELHI DISTRIBUTION LIMITED**

**TPDDL Learning Centre, CENPEID**

**Pocket F, Sector – 11, Rohini, Delhi – 110085**

**Tel. : 011-65464370, 011-27570583 Telefax : 011-27570725**



TPDDL/HR L&D/INT/S.No. 1773

Date 16/07/2019

**TO WHOMSOEVER IT MAY CONCERN**

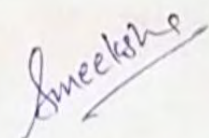
This is to certify that **Mr. Deepanshu Kashyap** from **University of Petroleum and Energy Studies** has undergone an Internship for a period of **7 Weeks** from **27<sup>th</sup> May to 15<sup>th</sup> July 2019** at Tata Power DDL on the following project-

**"Impact of Renewable Energy on Tata Power DDL"**

**In Power System Control Department**

We wish him success in his future endeavors.

**FOR TATA POWER DELHI DISTRIBUTION LIMITED,**



**Smeeeksha Gulati**  
**HoG (Capability Building- II)**  
**HR – Learning & Development**

**TATA POWER DELHI DISTRIBUTION LIMITED**

**TPDDL Learning Centre, CENPEID**

**Pocket F, Sector – 11, Rohini, Delhi – 110085**

**Tel. : 011-65464370, 011-27570583 Telefax : 011-27570725**