

## Report on educational tour to B.V.F.C.L, Namrup

An educational tour was arranged on 08.01.2022 by the Physics Deptt of Namrup College to BVFCL Namrup With all total nine Honours students guided by Dr.Ranjana Bora Bordoloi,(HOD),Dr.Durga Prasad Gogoi(asso.Prof.Physics Deptt)and lab assistant Mr Jugesh Gogoi.

Brahmutra valley Fertilizer corporation ltd (B.V.F.C.L) is located on the bank of dilli river in the south-western border of Dibrugarh district of Assam,India.It is the first factory of India,Who use natural gas as basic raw material for producing nitrogenous fertilizer.The Namrup Fertilizer complex was renamed as Brahmaputra valley Fertilizer corporation Limited after bifurcation from Hindustan Fertilizer corporation Limited from 01/04/02.Till 1960's Namrup was not known to the rest of the country.Discovery of oil and natural gas in Naharkatia region promoted a serious thinking on proper utilization of gas passed out.

Many of our students(Phy Honours) are working as employee in BVFCL,Namrup so it may be considered as most important to visit the factory by our students and to get some practical knowledge of working of the factory.BVFCL,Namrup infact supplies nitrogeneous fertilizer to the rest of the country and through Namrup is a small town, it becomes famous for rest of the country for this factory

*08/01/22*  
*04/02/22*  
Principal i/c  
Namrup College

*Ranjana Bora Bordoloi*  
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Dr. Ranjana Bora Bordoloi  
(HOD),Physics Deptt  
Head, Deptt of Physics  
Namrup College

# An educational tour to BVFCL, Namrup

On 8<sup>th</sup> January 2022 an educational tour to BVFCL was organized by Department of Physics, Namrup College. Our journey began at 10: 30 am from Namrup College, after 5 minutes of travel we reached our destination, i.e; BVFCL, Namrup. At the BVFCL we meet Ashif Iqbal Ahmed, the Deputy Chief Engineer at BVFCL, Namrup. He guided us the tour of the factory. At first we visited the control room. The control room is digitally equipped; it contains lots of information and data which are essential for the production of urea. There were operators who were remotely adjusting the requirements in the processes. At the control room our guide briefly explained the process of production of urea. And also told us about the BVFCL: It is operating gas based Ammonia- Urea; which has three sets of plants. We visited the third urea plant which is known as Namrup- III unit. The following is the process of production of urea:

The urea production process consists of five process steps:

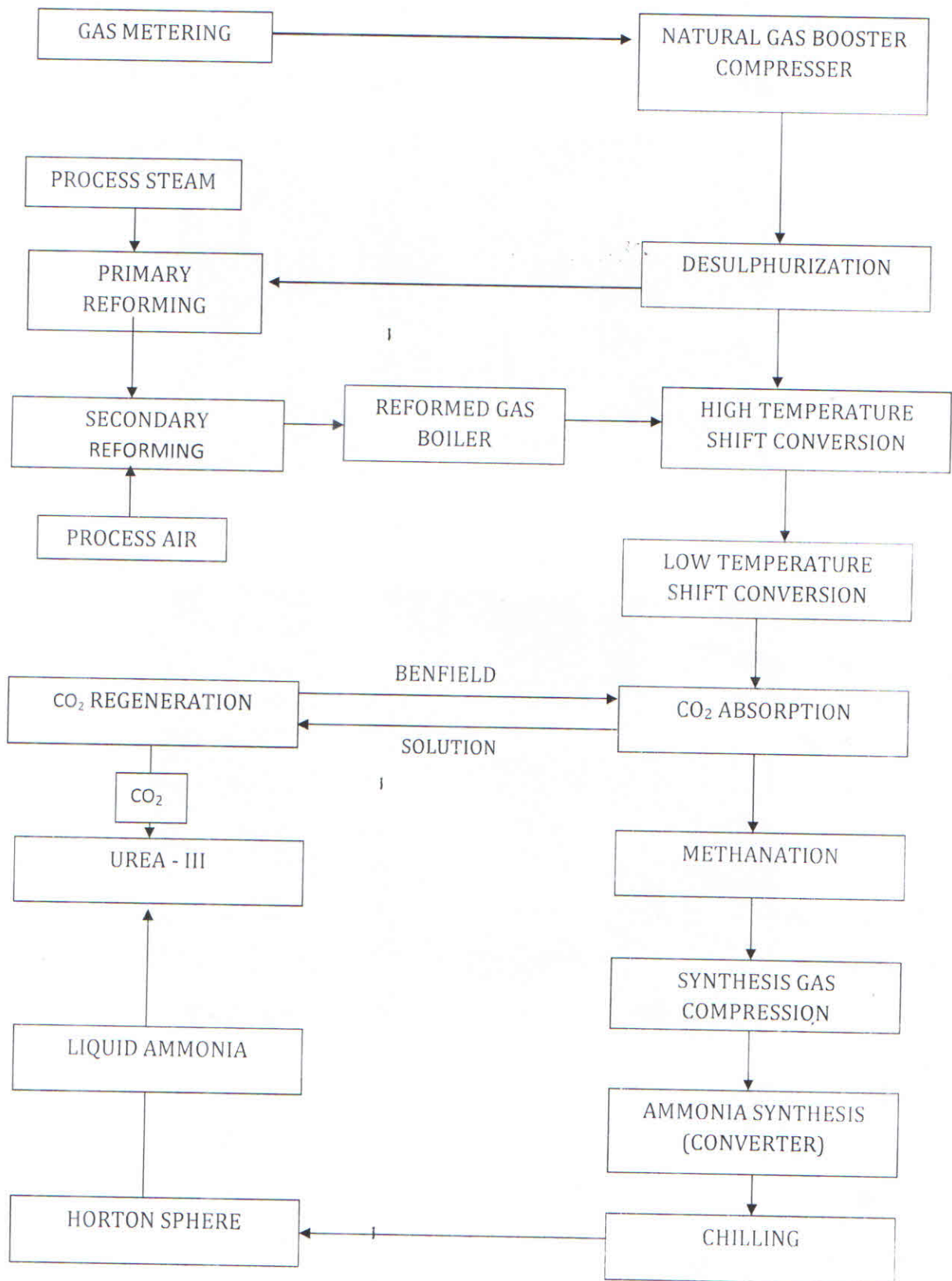
- **Synthesis** - Ammonia and carbon dioxide are synthesized to form ammonium carbamate, which in turn is partly dehydrated to urea.
- **Decomposition** - The unconverted ammonium carbamate is decomposed back to ammonia and carbon dioxide.
- **Recovery** - ammonia and carbon dioxide gases released from the decomposition step are scrubbed out with water, cooled and usually totally or partly recycled to the synthesis section.
- **Concentration** - The excess water is removed to produce molten urea. Usually, evaporation is used to produce fertilizer grade urea, whereas crystallization is used to produce technical grade urea.
- **Finishing** - The highly concentrated urea solution from the concentrators is processed either through a prilling tower or urea granulator to produce urea.

The educational tour was successfully organized with the support of staff and teachers of physics department. The visit to BVFCL, Namrup was very productive and inspirational for us. We came to know about different aspects of the industrial process in a grand level. We thank our teachers, specially the principal i/c of Namrup College Mr. Bimol Chandra Gogol and the authorities at BVFCL, Namrup who allow and grant us permission for this educational tour.

*Bimol Chandra Gogol*  
04/02/22  
**Principal i/c  
Namrup College**

*Ashif Iqbal Ahmed*  
04/02/22  
**Head, Deptt of Physics  
Namrup College**

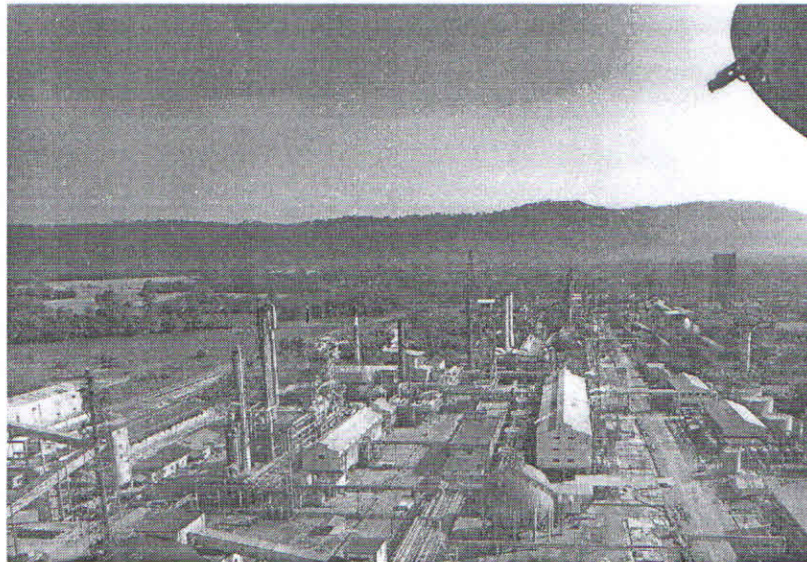
# BLOCK DIAGRAM OF AMMONIA PROCESS



Followings are some picture of the educational tour at BVFCL, Namrup:



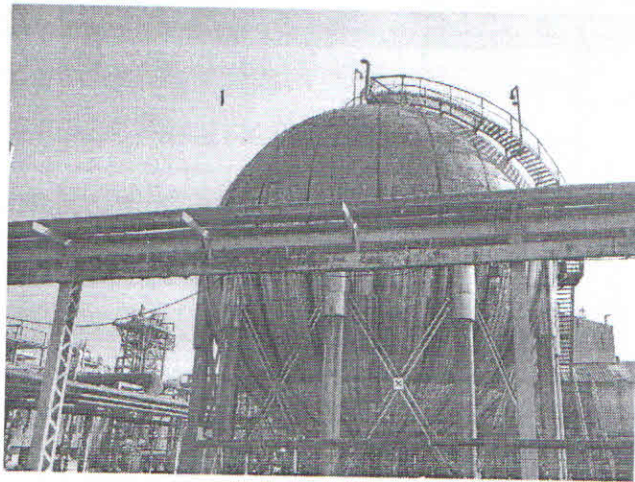
At the gate of BVFCL, Namrup



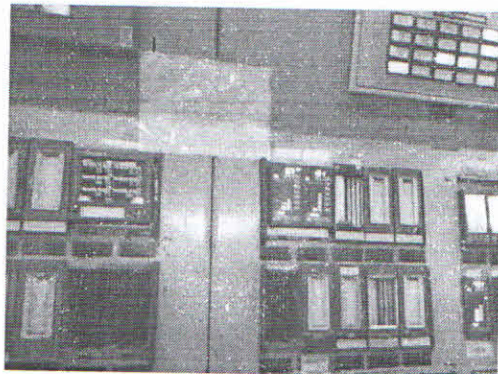
Overview of the factory



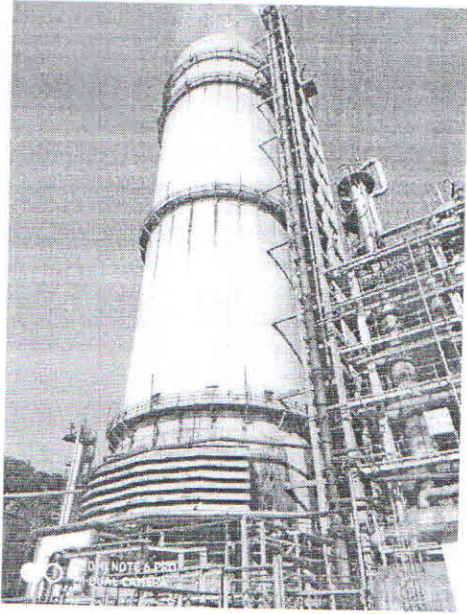
Control room



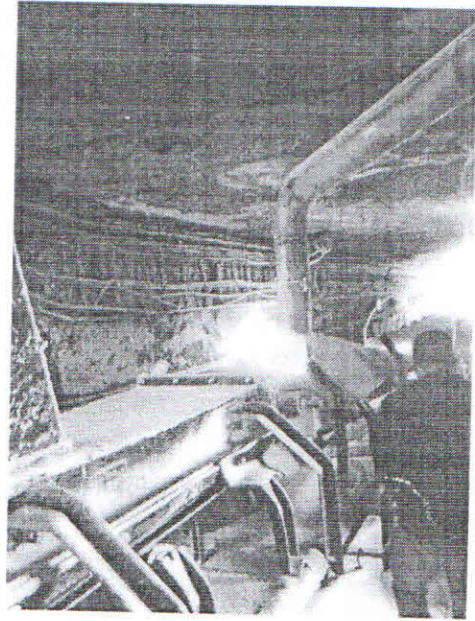
Horton Sphere



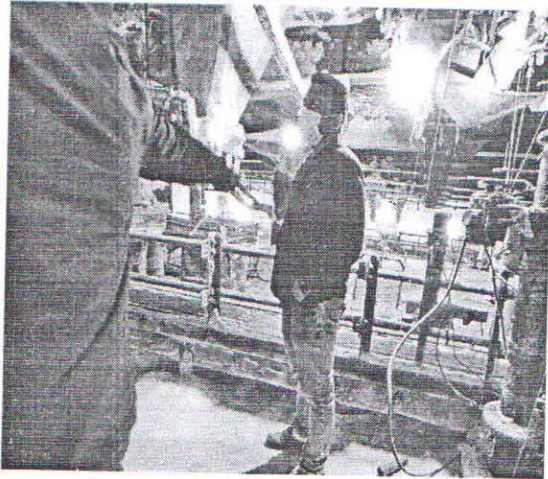
Meters old and new



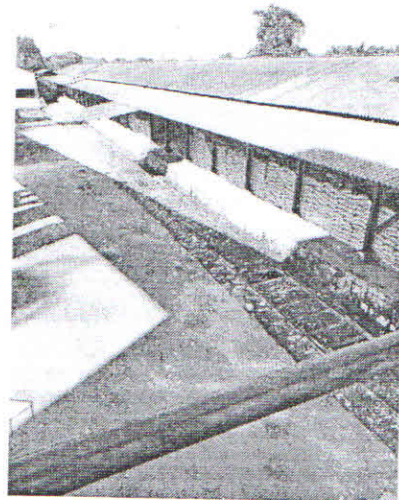
The Tower



Conveyer belt carrying fresh Urea



Bagging area



Store house

The teachers and staff who had joined this tour:

- Dr. Ranjana Bora Bordoloi (HoD of Physics Department),
- Dr. Durga Prasad Gogoi (Associate Professor),
- Mr. Jugesh Gogoi (Lab Bearer)

The students who had joined this tour:

➤ B.Sc 1<sup>st</sup> semester:-

- Dinesh Shah,
- Zubeen Debnath.

➤ B.Sc 3<sup>rd</sup> semester:-

- Ananta Dutta,
- Anand Kashyap,
- Rinku Baruah,
- Likita Das,
- Monti Saikia,
- Babli Garh,
- Yubraj Chetri.

Report prepared by Anand Kashyap (Bsc 3<sup>rd</sup> Sem).