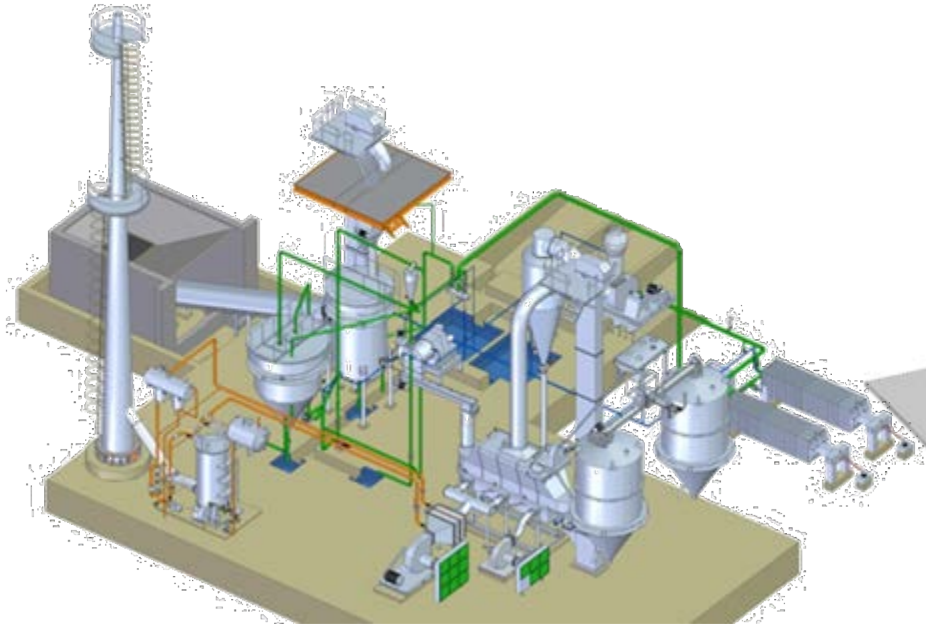
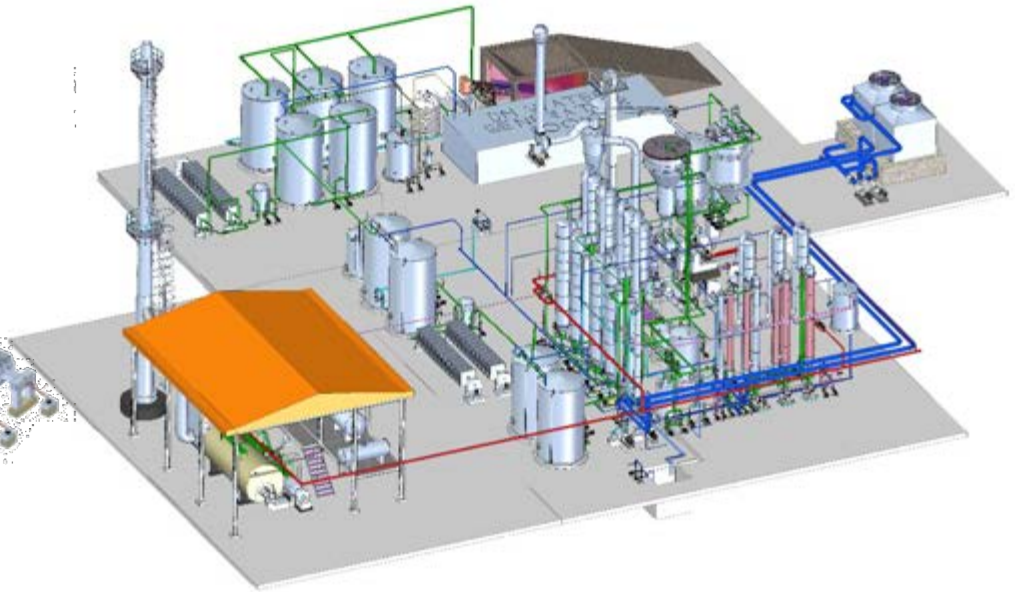
WORLD SALT SYMPOSIUM
June 19-21, 2018 Park City UT, USA

SALT PROCESSING TECHNOLOGIES





Author(s) : Tapas Chatterjee – Managing Director

SSP Since 1977
THE PROJECT PEOPLE

SALT PROCESSING

"Sodium Chloride commonly known as Salt is one of the most abundant minerals on earth"

Author(s) : Tapas Chatterjee – Managing Director

SSP Since 1977
THE PROJECT PEOPLE

SOURCE OF CRUDE SALT

1. Sea Salt

2. Rock Salt

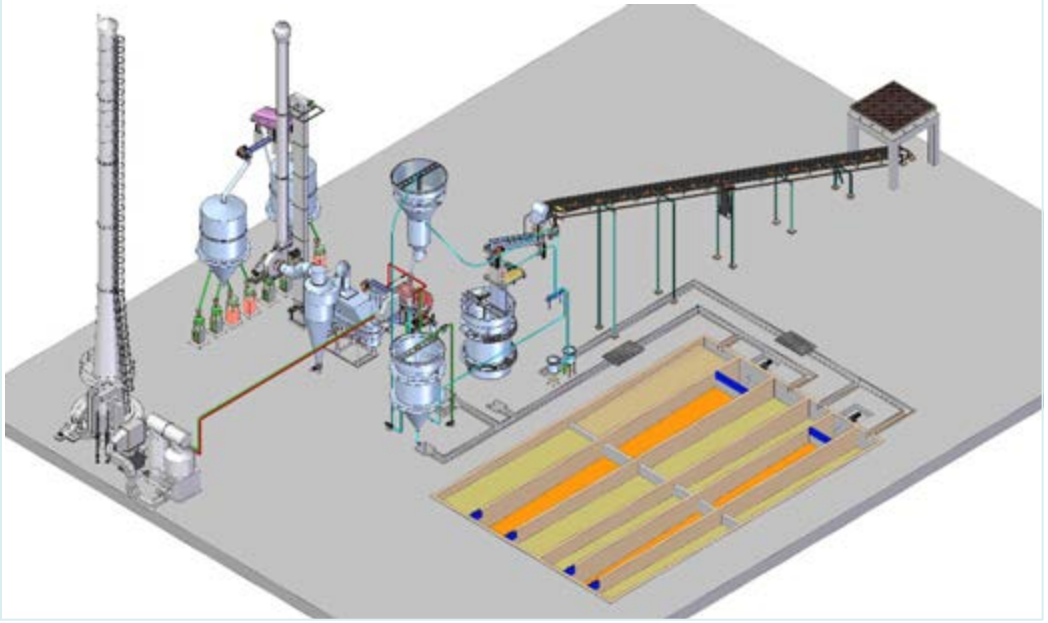
3. Lake Salt

Author(s) : Tapas Chatterjee – Managing Director

SALT PROCESSING TECHNOLOGIES

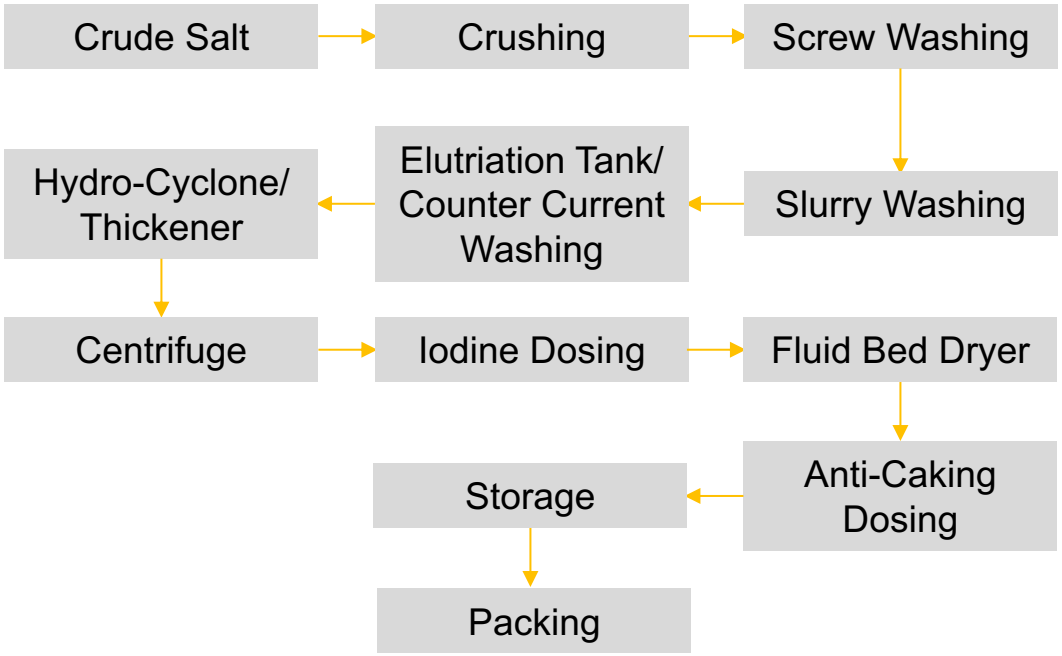
Mechanical Salt Refinery System

In mechanical salt refinery the raw salt is washed by means of saturated brine for removal of soluble impurities like sand, Earth and Gypsum etc.



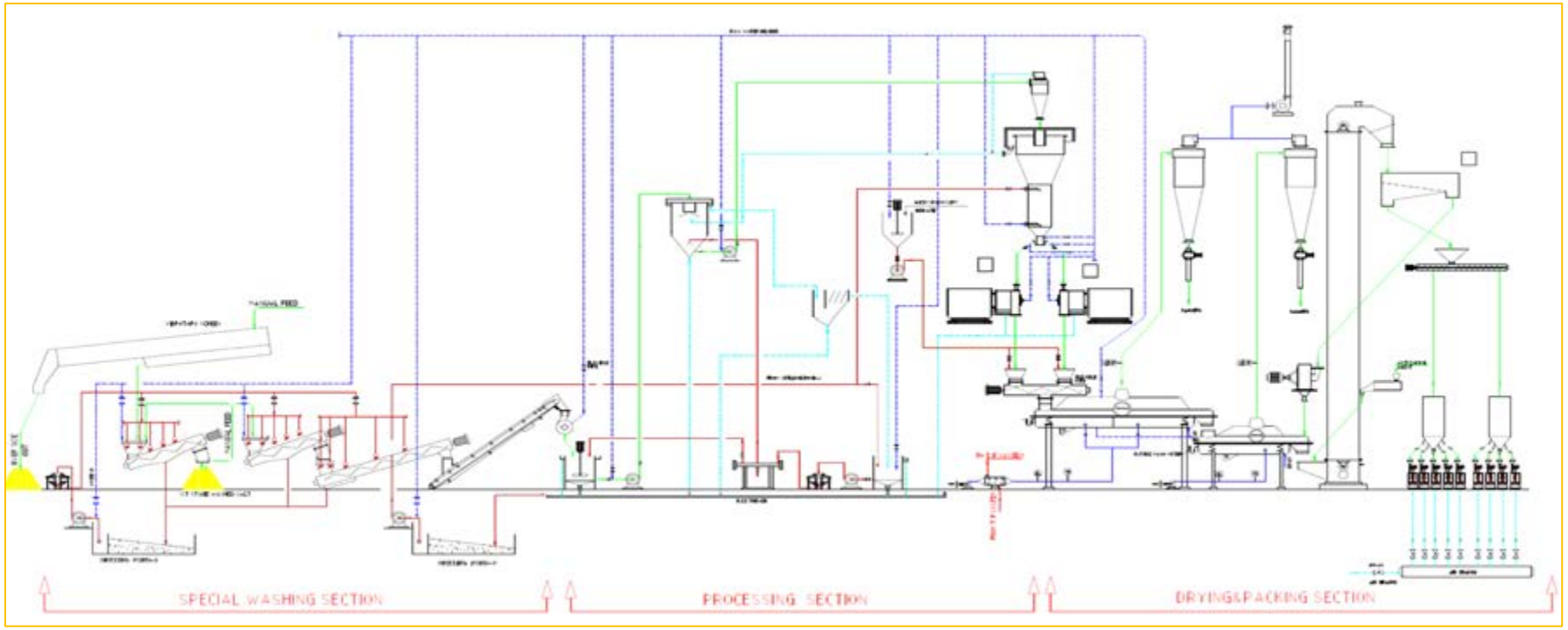
Author(s) : Tapas Chatterjee – Managing Director

PROCESS FLOW FOR MECHANICAL SALT REFINERY



Author(s) : Tapas Chatterjee – Managing Director

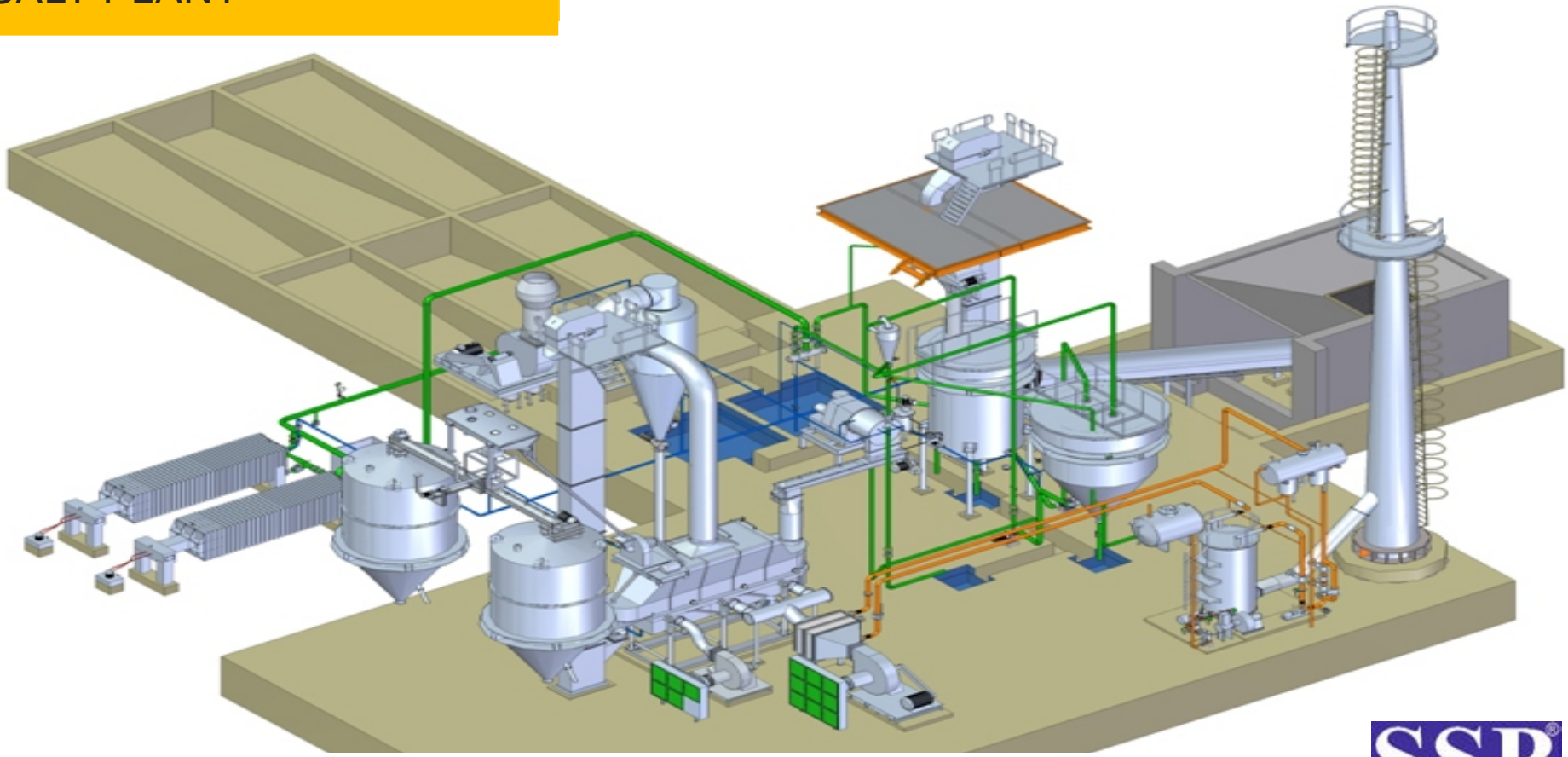
CASE STUDY: SALT WITH 35% INSOLUBLE



Author(s) : Tapas Chatterjee – Managing Director

SSP Since 1977
THE PROJECT PEOPLE

3D VIEW OF MECHANICAL SALT PLANT



Author(s) : Tapas Chatterjee – Managing Director

SSP Since 1977
THE PROJECT PEOPLE

WORLD SALT SYMPOSIUM
June 19-21, 2018 Park City UT, USA

MECHANICAL SALT REFINERY PLANTS

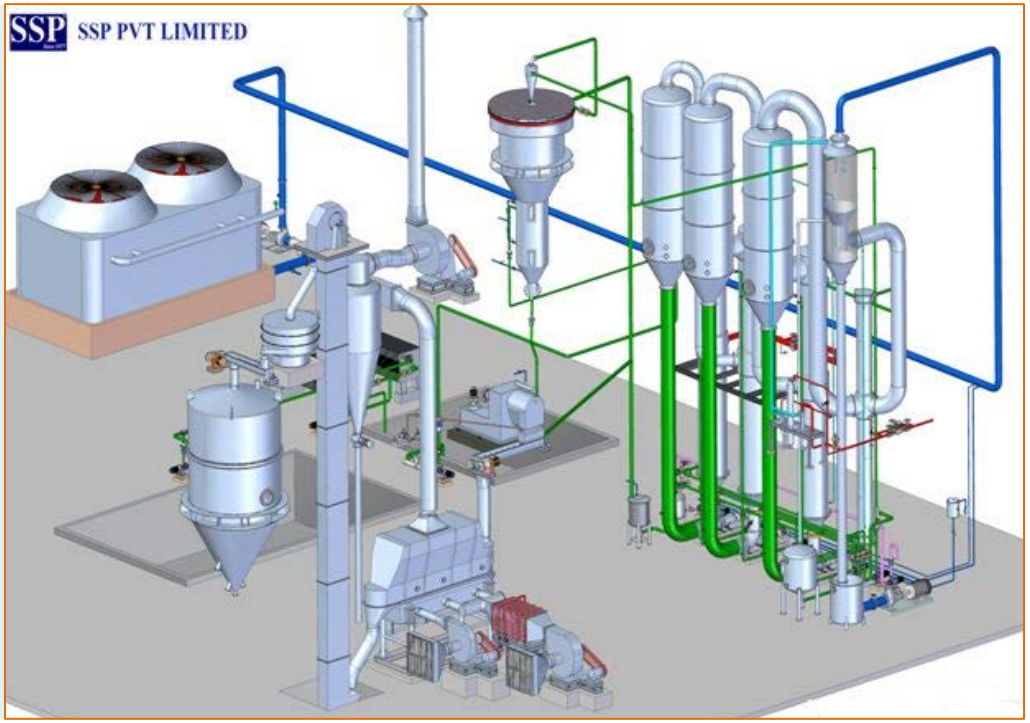
Author(s) : Tapas Chatterjee – Managing Director

SSP Since 1977
THE PROJECT PEOPLE

SALT PROCESSING TECHNOLOGIES

Vacuum Salt Refinery System

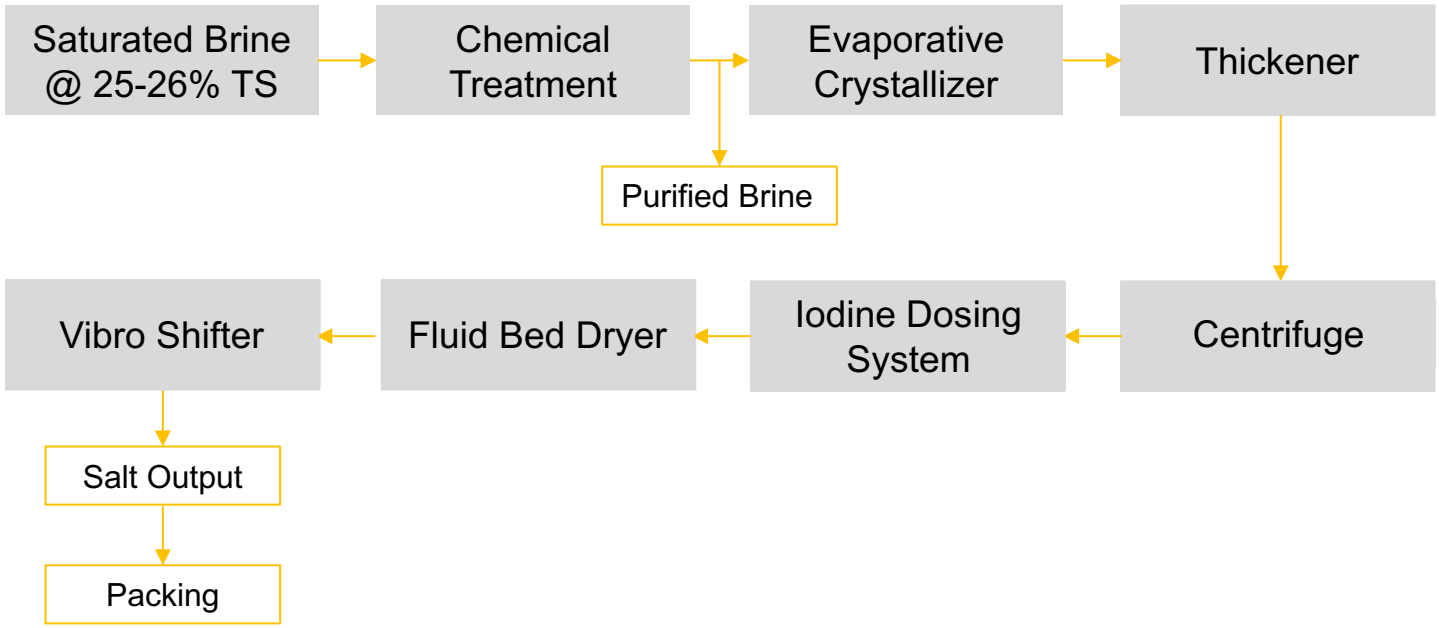
- In vacuum Salt refinery the salt is dissolved in water to make saturated brine solution.
- This brine is treated with chemicals to precipitate out calcium and magnesium salts as impurities.
- This treated brine is fed to an evaporative crystallizer to produce vacuum salt



Author(s) : Tapas Chatterjee – Managing Director

SSP Since 1977
THE PROJECT PEOPLE

PROCESS FLOW – VACUUM SALT REFINERY

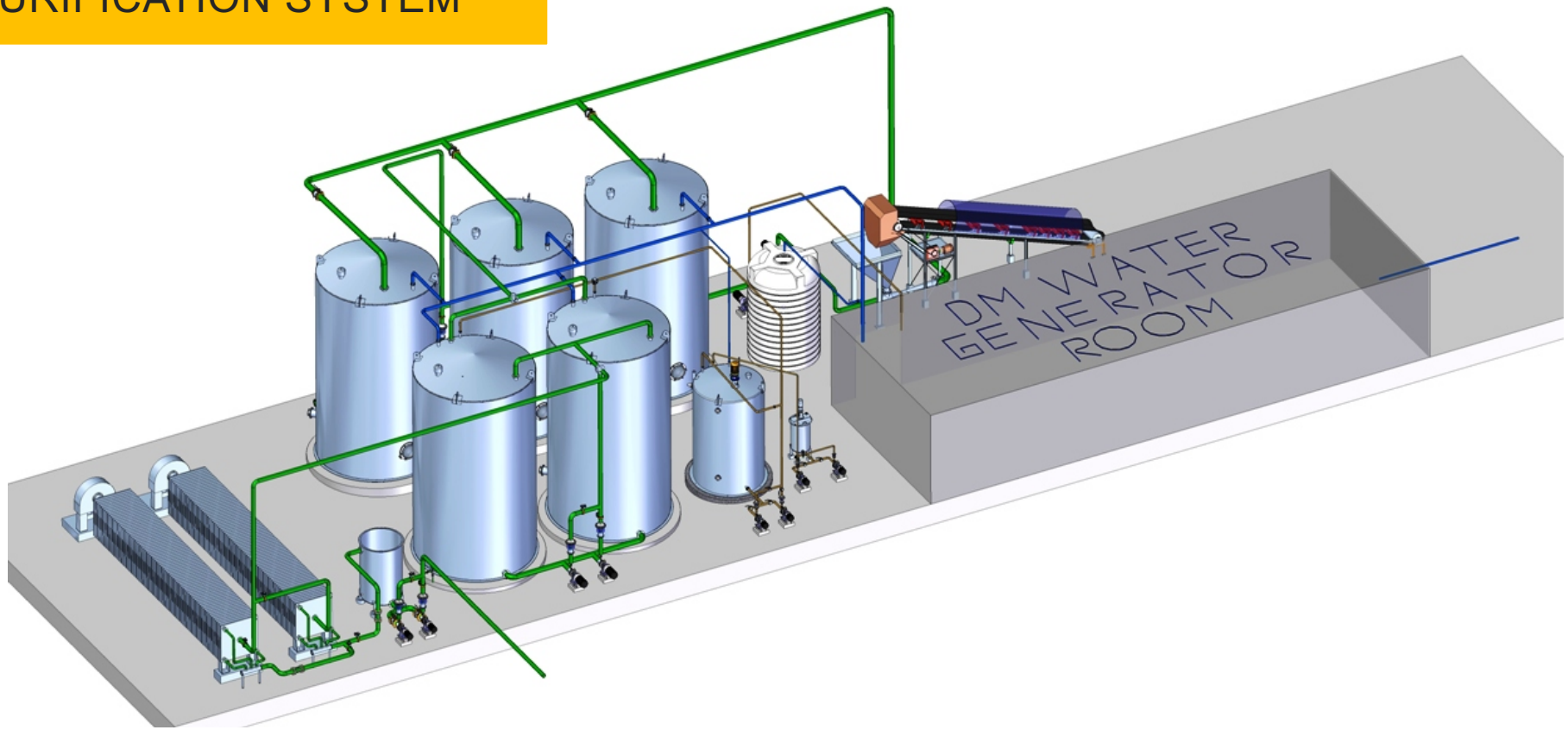


Author(s) : Tapas Chatterjee – Managing Director

SSP Since 1977 THE PROJECT PEOPLE

WORLD SALT SYMPOSIUM
June 19-21, 2018 Park City UT, USA

BRINE PREPARATION & PURIFICATION SYSTEM

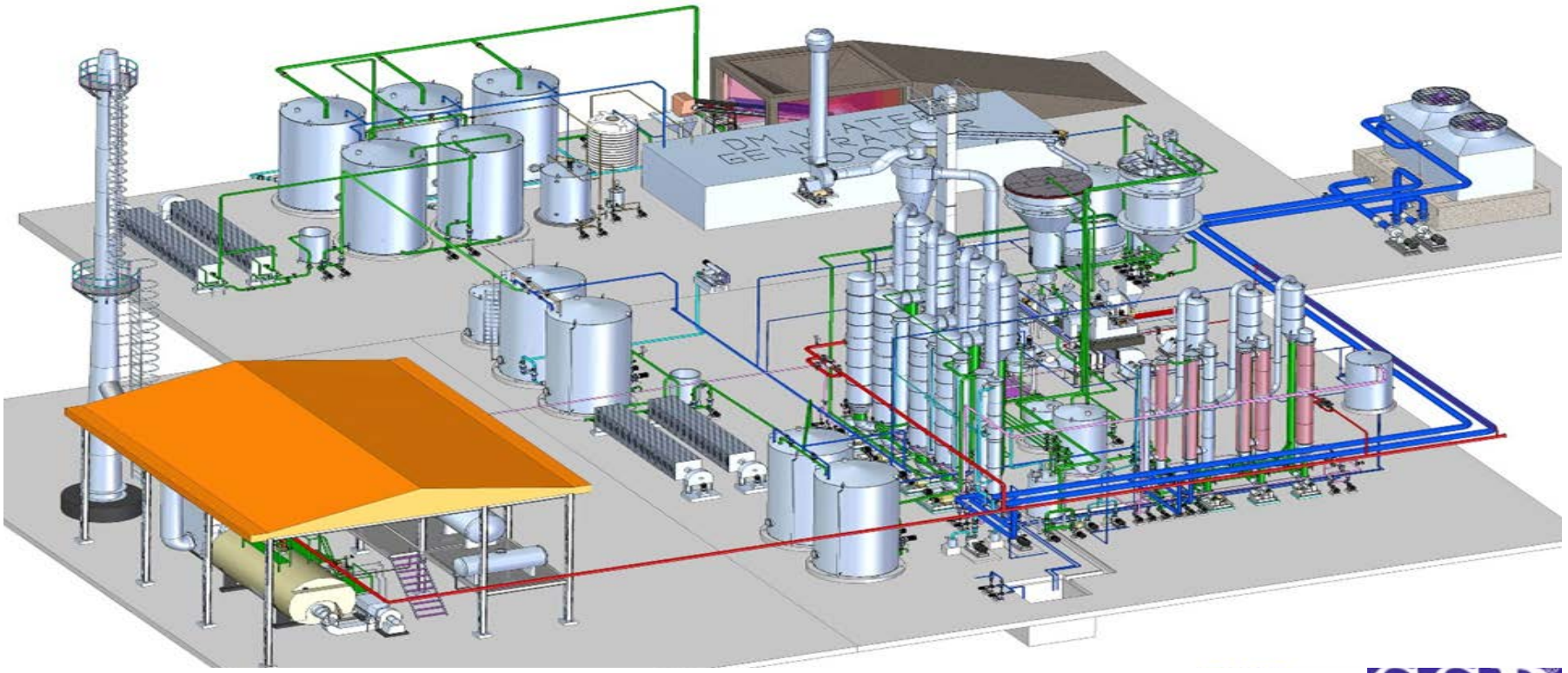


Author(s) : Tapas Chatterjee – Managing Director

SSP Since 1977
THE PROJECT PEOPLE

WORLD SALT SYMPOSIUM
June 19-21, 2018 Park City UT, USA

VACUUM SALT REFINERY SYSTEM



Author(s) : Tapas Chatterjee – Managing Director

SSP Since 1977 THE PROJECT PEOPLE

PHOTOGRAPHS

Author(s) : Tapas Chatterjee – Managing Director

FRACTIONAL CRYSTALLIZATION

Fractional Crystallization is carried out for crystallization of different inorganic salts in the same solution, e.g. a salt lake water containing Na_2SO_4, NaCl and $MgSO_4$, MgCl2 & KCl can be separated by Fractional Crystallization via following steps:

Step One: By means of cooling crystallization at -20^oC, the Na_2 SO_4 crystallized out.

Step Two: The mother liquor containing NaCl, $MgSO_4$, MgCl2 and KCl can be fed to an evaporative crystallizer to takeout NaCl Salt.

Step Three: The mother liquor containing $MgSO_4$, MgCl2 and KCl can be crystallized in a cooling crystallizer at -10^oC to crystalize $MgSO_4$.

Step Four: Active research is going on to separate MgCl2 and KCl.

Author(s) : Tapas Chatterjee – Managing Director

OPPORTUNITIES

- Desalination plant reject can be processed economically to generate water and salt by use of 7 stages evaporator for concentration upto 25-26% followed by 4 effect evaporative crystallizer. MVR system can also be used to minimize thermal energy.

  150,000 kg/hr of RO rejects can produce 130,000 ltr of water and 10 TPH salt.

- Yield per acreage of salt from solar ponds can be increased by installation of vacuum crystallizers using 20^0 Be brine.

Author(s) : Tapas Chatterjee – Managing Director

WORLD SALT SYMPOSIUM

June 19-21, 2018 Park City UT, USA

THANK YOU

SSP PVT LIMITED

Regd. & Corporate Office

13, Milestone, Mathura Road, Faridabad-121003, Haryana (INDIA)

Tel.: +91-0129-4183700, Fax: +91-0129-41837077

E-mail: info@ssp.co.in; marketing@ssp.co.in

website: www.sspindia.com

Author(s) : Tapas Chatterjee – Managing Director

SSP® Since 1977 THE PROJECT PEOPLE