

2023



Magnetic Flocculation

Loren Industry Co. ,Ltd

Group Brief

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Technical Display

02

Core Products

03

Industry Application

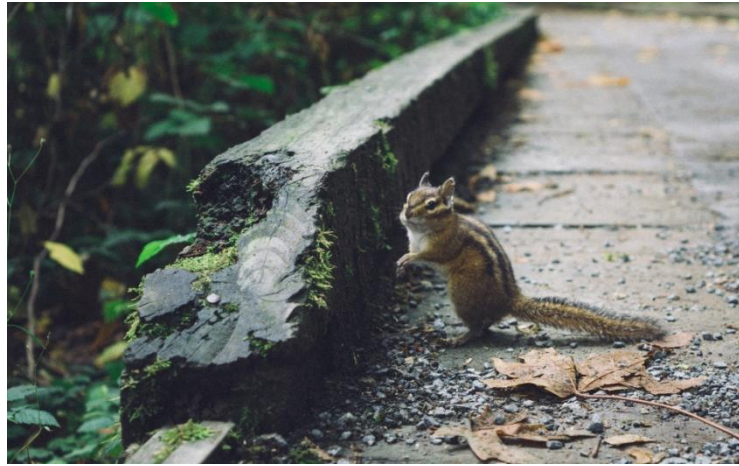
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Engineering Case

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China 's 1st 5S Global Environmental Service Platform

Based on Beidou Navigation System of China North Industries Group

Service

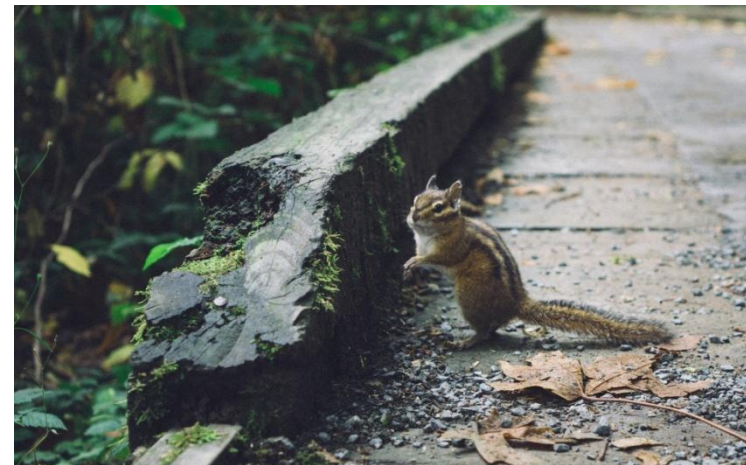
Idea

Environmental

Protection

With Most Advanced Auto Control and Monitoring System in China

Realize the Overall Monitoring and Operation of the Sewage Treatment Plant

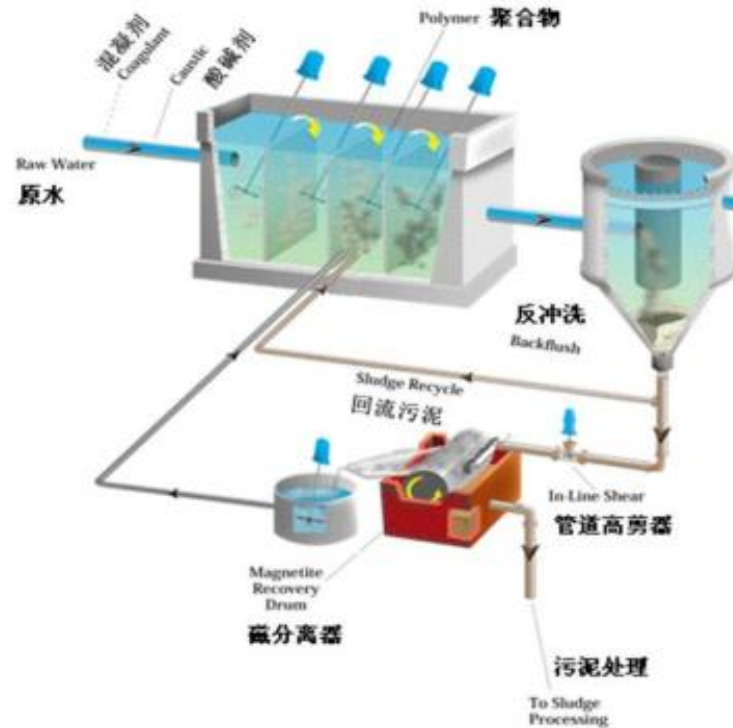


Loren Industry Co.,Ltd Has Over Two Decade Experience In Design, Installation, Commissioning And Operation Of Environmental Engineering. It Has Designed And Launched More Than 1,000 Domestic And International Sewage Treatment Projects With Rich Experience And Technology In Wastewater Treatment

The Group Continuously Develops New Technologies By Both Introducing From Abroad And Self Renovation To Make Them Globally Suitable For Such Applicant Fields As Waste Water Upgrading ,Reforming & Reuse.

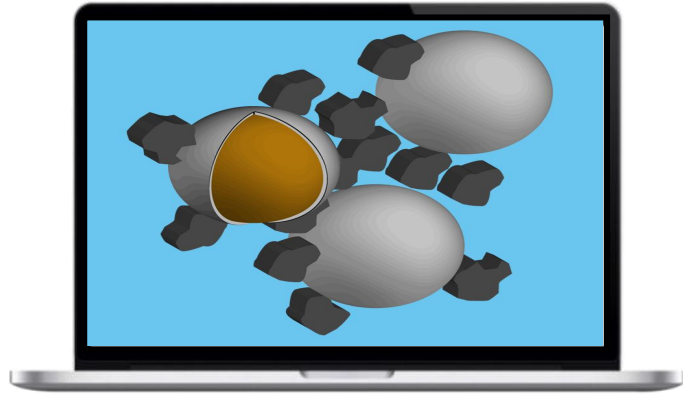


The Magnetic Flocculation & Sedimentation Technology Realize Superb Solid Liquid Separation by Increasing Specific Gravity of Magnetic Floc Whose Specific Gravity Can Reach Between 4.8 & 5.1



It Includes Such Process of Reaction Process, High-Speed Sedimentation Solid-Liquid Separation & Magnetic Flocculation Material Recovery

The Magnetic Flocculation Material & The Flocs Are Co-Precipitated Efficiently. It Is Then Recycled Through Special High Shear Mshear® & Magnetic Separator Mdurm®.



**Contrast Picture Under the Microscope
Magnetic Flocculation Reaction Process**

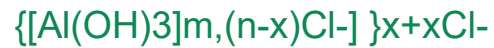


Magnetic Floc

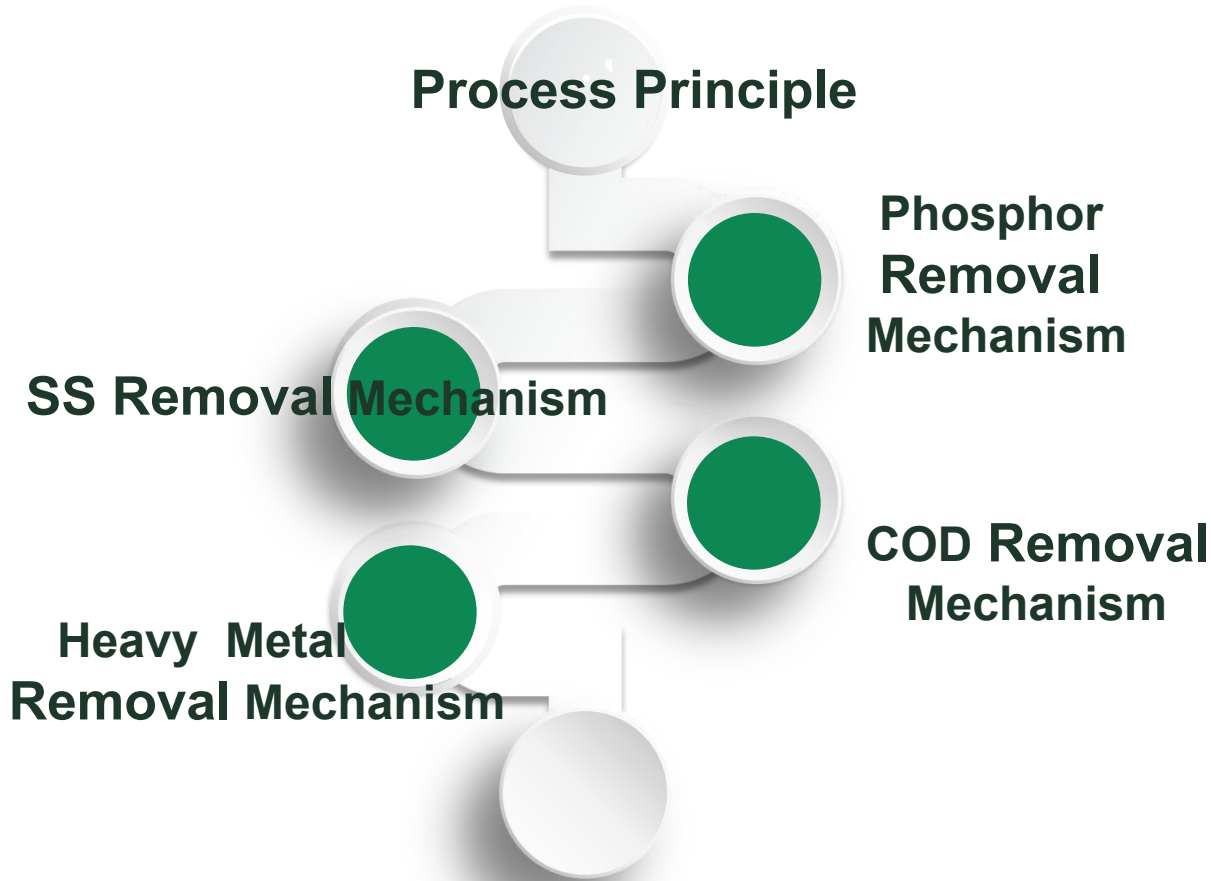


Magnetic Sludge

PAC Dosing With Complex Flocculation Reaction With Mainly Generated Compound Formula Below



Removal Is Carried Out By Adding a Basic Substance Or Other Chemical Substance To Precipitate a Water-Insoluble Heavy Metal Hydroxide Precipitate Or Other Precipitate. At The Same Time, Special Heavy Metal Capture Agents Can Also Be Added For Removal.



Beside reaction with PO_4^{3-} , the dephosphorization agent will also react with the alkalinity in the water to form $Al(OH)_3$, which causes a large waste of the agent. Therefore, a reflow reaction system is added to the magnetic flocculation and sedimentation technology, so that the wasted chemical can be further reacted, which can greatly save the cost of the medicament.



To Removal The Large Amount Of COD In Form of Suspended Solids & Colloids By Highly Fast Magnetic Flocculation And Sedimentation Technology

Feature

Efficient Separation Efficiency:
High Speed, up to 40m/h
High Surface Load up to 20m³/m²h

1/20 of the Traditional Process Footprint.
No more than 20 Minutes HRT
600 m² Area for 100,000 M³/D STP

Low Operating Costs
USDS 440-1200 per 100,000 m³ water
Adding magnetic flocculants recovery
rate up to 99%

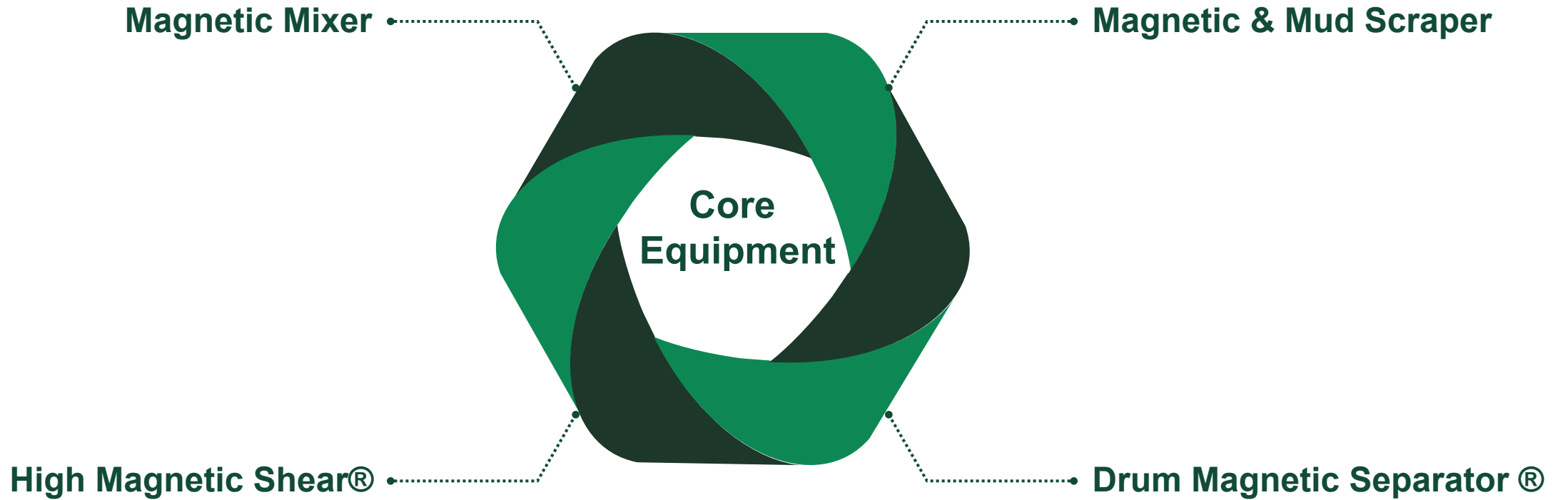
High Quality Effluent Effect,
TP as low as 0.05mg / L;
SS as low as 5mg/L;
Turbidity is less than 1 NTU;
The COD Removal Rate is
10%~70% better than the
Traditional Sedimentation.

1

2

3

4



Magnetic Agitator

Professional Flow Design With Dedicated Hr-3 Special Blade Safeguards The Magnetic Floc Containing Magnetic Powder Is In Suspension Status & Meanwhile The Floc Can Not Be Broken Up.



Magnetic Powder Scraper

Professional torque design Ensures that the bottom deposited magnetic powder can be collected into the mud effectively.



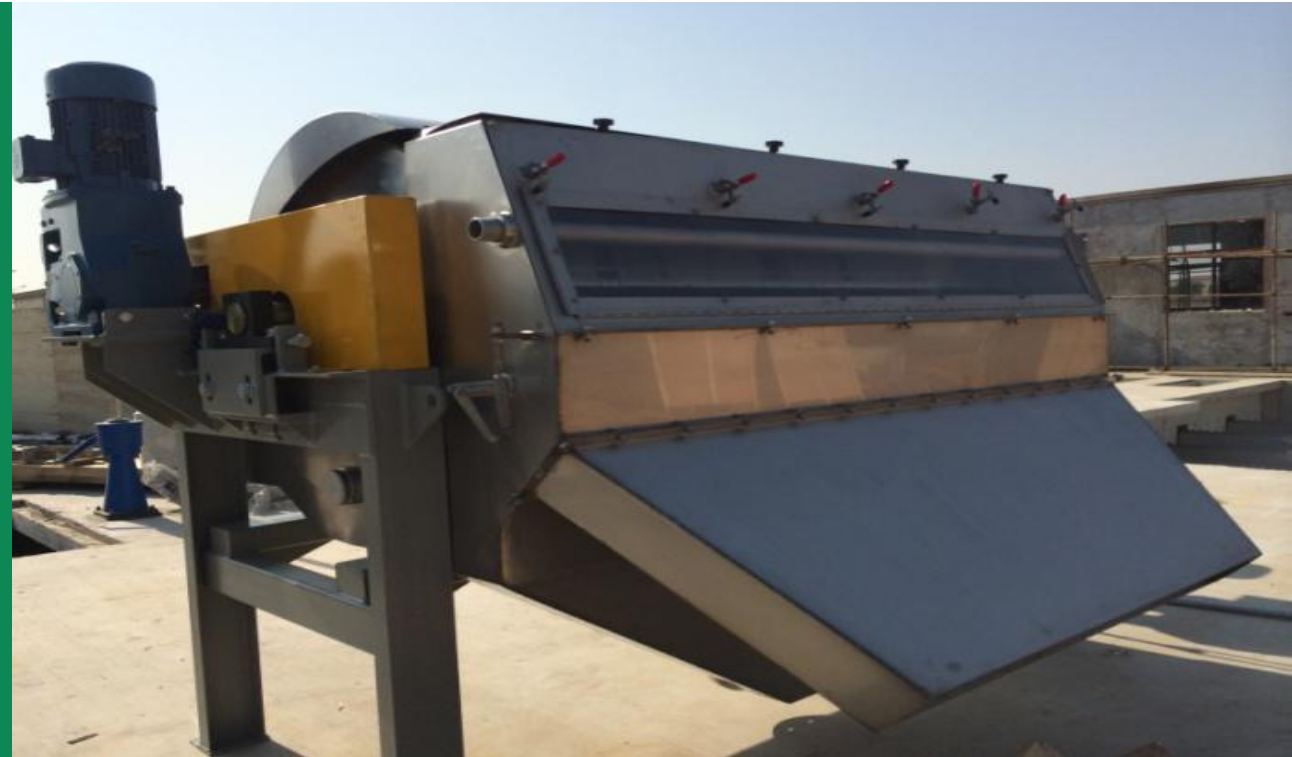
High Magnetic shear®

Professional Design Ensures Effective Separation Of Magnetic Powder And Sludge, Thus To Ensure The Purity Of Magnetic Powder Recovery.



Magnetic Separator Mdrum®

Professional Design Of Magnetic Field, Magnetic Channel, Separation Zone And Unloading Zone Ensures Magnetic Particle Recovery Rate Over 99.5%.



Unexpanded Limited Room

With 20m³/m²h High Surface Load to Greatly Reduce Its Floor Area As 1/20 of Traditional Sedimentation Pool

Temporary Emergency for Other Future Purposes

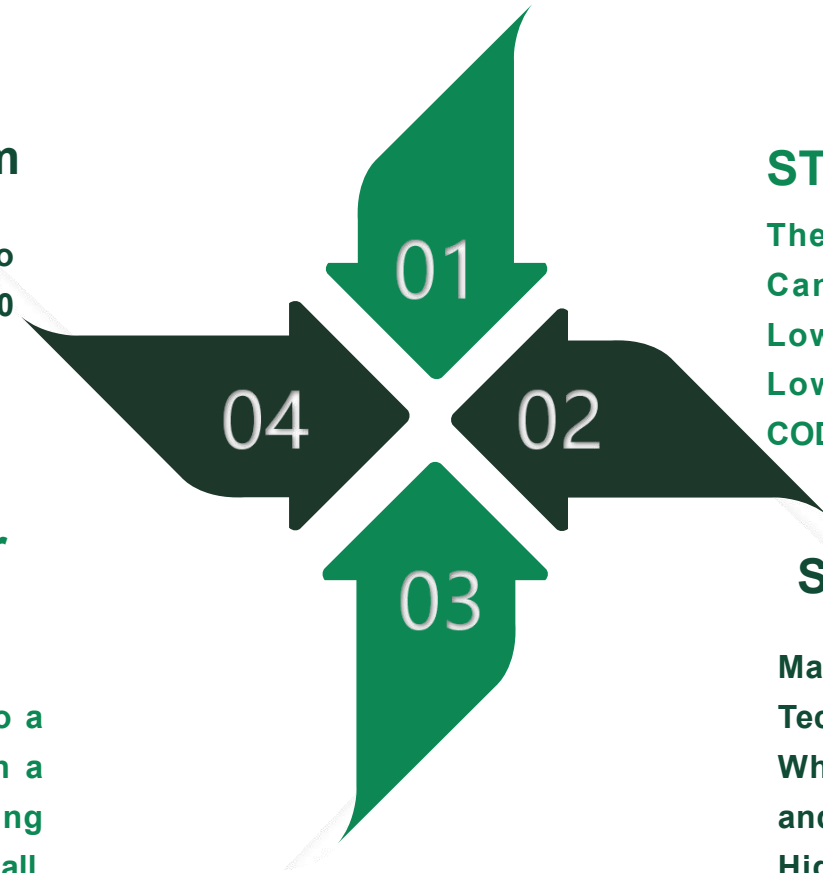
It Can Be Perfectly Integrated Into a Movable Skid-Mounted Unit With a 10,000 m³ Per Day Maximum Armoring Capacity Due To Its The Extremely Small Sedimentation Footprint Technology

STP TP & TSS Under Criteria

The Magnetic Flocculation Technology Can Effectively Ensure Effluent TP Is Lower Than 0.5 mg/L, Matching SS Is Lower Than 10mg/L As Well As Partial COD Removal .

Current STP Poor Sedimentation Efficiency

Magnetic Flocculation & Sedimentation Technology Combines Magnetic Powder Whose Specific Gravity Is Between 4.8 and 5.1, With No Less Than 40m/h Ultra-High Sedimentation Speed ,Which Can Perfectly Improve The Original System.





01

Municipal
sewage
treatment
plant
upgrading

Black stinky
river cure
Water quality
maintenance



02

Industrial
wastewater
special removal
of phosphorus,
turbidity,
suspended
matter and
heavy metal



03

Reconstruction Project of Magnetic Flocculation Deep Dephosphorization
for a 150,000 tons Municipal Sewage Treatment Plant



8 Sets Integrated Magnetic Flocculation Equipment For a Municipal STP



Magnetic Flocculation Equipment Delivered to a Pharmaceutical Company



THANK YOU

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