# Netsol Water Solutions Put. Ltd.







### Mission

Today, over a billion people around the world still have no access to clean drinking water and even in the industrialised nations, water as source of nutrition is becoming an increasingly precious item. The reasons for this development are not only climate related, but also due to environmental problems and shrinking ground water reserves. Accordingly, water treatment and wastewater purification, as well as new technologies for water reuse and recycling, are of growing significance globally.

NETSOL has dedicated itself to taking these challenges with a range of problem solutions, which is both comprehensive and highly advanced. With our innovative technologies and services we make a sizeable contribution to the provision of secure water supply and wastewater treatment in both the municipal and industrial sectors. The know-how that we put into practice is based on more than 5 years of experience with water as an element. Indeed, our trademark is a profound understanding of everything relating to water.

## **Quality Policy**

**NETSOL WATER SOLUTIONS PVT. LTD.** (**NWSPL**) is striving towards eliminating quality losses to the society by continually implementing new technologies and providing value added services in the field of water treatment industry. This will be achieved by providing an agile management system of product and technology between **NETSOL WATER SOLUTIONS PVT. LTD.** (**NWSPL**) and our Clients.

## Service Spectrum

One of the key strengths of **NETSOL WATER SOLUTIONS PVT. LTD.** (**NWSPL**) is its manufacturing base. It offers Reverse Osmosis Systems for Process & Drinking, Effluent / Sewage Treatment Plant, Water Treatment Plants, Turnkey Swimming Pool System, Conventional Pressure Filters, Iron Removal Filter & Hydro Pneumatic Pressure Boosting Systems.

We stock consumable & parts required for the maintenance of plants / systems. We design, engineer and integrate technology and system for various processes such as STP/ETP, RO DM plants Softeners and Swimming Pool etc.

**NETSOL WATER SOLUTIONS PVT. LTD.** (NWSPL) provides "Complete Water Solutions" for turnkey projects. At the initial stage, we critically analyze specific requirements of the clients and accordingly design systems. These systems are commissioned seamlessly under the guidance of our experts to ensure uninterrupted process flow







### Moving Bed Bio Reactor

The Moving Bed Biofilm Reactor technology is a biological solution for wastewater treatment, based on a core understanding of microbiology and treatment processes. This simple and robust biological treatment process is suitable for specific wastewater treatment processes — nitrogen reduction, high BOD/COD removal, including difficult industrial wastewater requirements. At the core of the technology, specially designed polyethylene biofilm carriers provide a large surface area for micro-organisms to grow on and perform specific biological treatment functions. Carriers are kept in suspension in the reactor either by the aeration system. Bacteria from the wastewater attach themselves to the floating carriers.

The very compact configuration helps to achieve a highly active biomass concentration in the reactor and a low settling load in the downstream solids separation process. Biofilm wastewater treatment technologies are very robust, especially when compared to conventional technologies like activated sludge.

#### Advantages:-

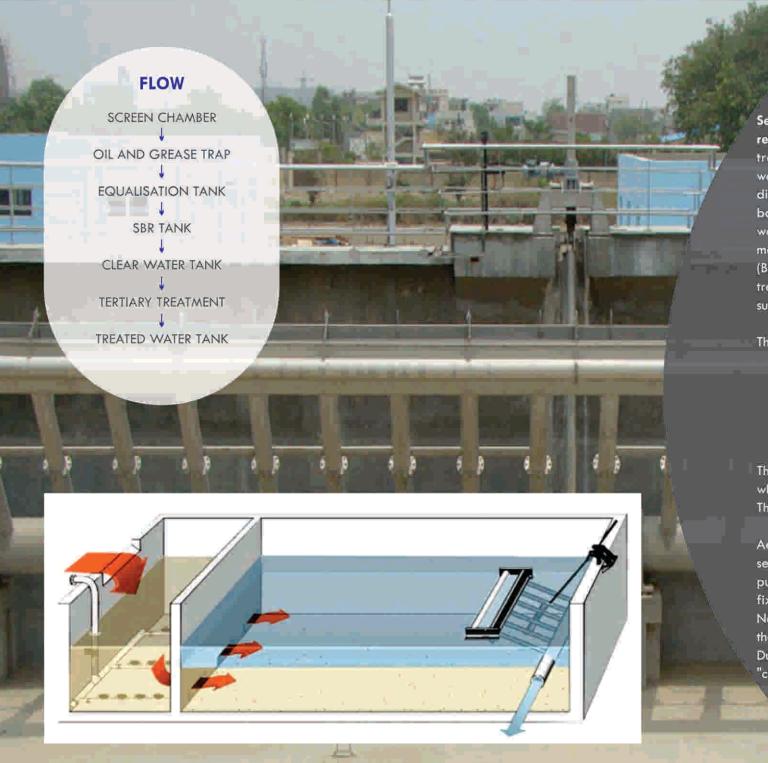
High tolerance to load variations (including suspended solids) and toxic shocks

Low solids load on clarifier

Very compact configuration, able to fit in very small spaces

High removal efficiencies for nitrogen, BOD and COD Stable process and easy to operate





#### Sequential Batch Reactor

Sequencing batch reactors (SBR) or sequential batch reactors are a type of activated sludge process for the treatment of wastewater. SBR reactors treat wastewater such as sewage or output from anaerobic digesters or mechanical biological treatment facilities in batches. Oxygen is bubbled through the mixture of wastewater and activated sludge to reduce the organic matter (measured as biochemical oxygen demand (BOD) and chemical oxygen demand (COD)). The treated effluent may be suitable for discharge to surface waters or possibly for use on land.

There are five stages in the treatment process:

- 1. Fill
- 2. React
- 3. Settle
- 4. Decant
- 5. Idle

The inlet valve opens and the tank is being filled in, while mixing is provided by mechanical means (no air). This stage is also called the anoxic stage.

Aeration of the mixed liquor is performed during the second stage by the use of fixed or floating mechanical pumps or by transferring air into fine bubble diffusers fixed to the floor of the tank.

No aeration or mixing is provided in the third stage and the settling of suspended solids starts.

During the fourth stage the outlet valve opens and the "clean" supernatant liquor exits the tank.

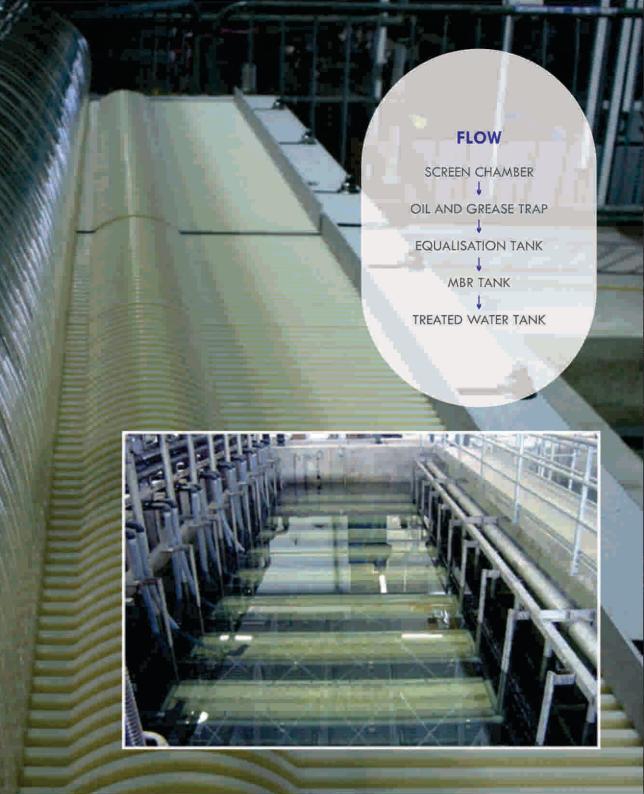


Membrane bioreactor (MBR) is the combination of a membrane process like microfiltration or ultra filtration with a suspended growth bioreactor, and is now widely used for municipal and industrial wastewater treatment with plant sizes up to 80,000 population equivalent

When used with domestic wastewater, MBR processes can produce effluent of high quality enough to be discharged to coastal, surface or brackish waterways or to be reclaimed for urban irrigation. Other advantages of MBRs over conventional processes include small footprint, easy retrofit and upgrade of old wastewater treatment plants. It is possible to operate MBR processes at higher mixed liquor suspended solids (MLSS) concentrations compared to conventional settlement separation systems, thus reducing the reactor volume to achieve the same loading rate.

Two MBR configurations exist: internal/submerged, where the membranes are immersed in and integral to the biological reactor; and external/side stream, where membranes are a separate unit process requiring an intermediate pumping step.

Membrane bioreactors can be used to reduce the footprint of an activated sludge sewage treatment system by removing some of the liquid component of the mixed liquor. This leaves a concentrated waste product that is then treated using the activated sludge process.



# **Effluent Treatment Plant** Industrial wastewater treatment covers the mechanisms and processes used to treat wastewater that is produced as a byproduct of industrial or commercial activities. After treatment, the treated industrial wastewater (or effluent) may be reused or released to a sanitary sewer or to a surface water in the environment. Most industries produce some wastewater although recent trends in the developed world have been to minimise such production or recycle such wastewater within the production process. However, many industries remain dependent on processes that produce wastewaters. There are various treatment technologies for treating effluent of different type of industries. Some of them are:-UASB Upflow anaerobic sludge blanket (UASB) technology, normally referred to as UASB reactor, is a form of anaerobic digester that is used for wastewater treatment. The UASB reactor is a methanogenic (methane-producing) digester that evolved from the anaerobic clarigester. A similar but variant technology to UASB is the expanded granular sludge bed (EGSB) digester. UASB uses an anaerobic process whilst forming a blanket of granular sludge which suspends in the tank. Wastewater flows upwards through the blanket and is processed (degraded) by the anaerobic microorganisms. A trickling filter consists of a bed of rocks, gravel, slag, peat moss, or plastic media over which wastewater flows downward and contacts a layer (or film) of microbial slime covering the bed media. Aerobic conditions are maintained by forced air flowing through the bed or by natural convection of air. The process involves adsorption of organic compounds in the wastewater by the microbial slime layer, diffusion of air into the slime layer to provide the oxygen required for the biochemical oxidation of the organic compounds. The end products include carbon dioxide gas, water and other products of the oxidation. As the slime layer thickens, it becomes difficult for the air to penetrate the layer and an inner angerobic layer is formed. Chemical Treatment In Chemical treatment, Effluent is treated with chemical reaction, generally Lime Alum and poly are used for chemical reactions. Chemical reaction involves two process, coagulation and flocculation. After that sludge is removed from the system and clear water is treated further.



# Zero Liquid Discharge

Zero Liquid Discharge is a process that is beneficial to industrial and municipal organizations as well as the environment because it saves money and no effluent, or discharge, is left over. ZLD systems employ the most advanced wastewater treatment technologies to purify and recycle virtually all of the wastewater produced. Also Zero liquid discharge technologies help plants meet discharge and water reuse requirements, enabling businesses to:

- Meet stringent cooling tower blowdown and flue gas desulfurization (FGD) discharge regulations.
- Treat and recover valuable products from waste streams.
- · Better manage produced water.

A **Zero liquid discharge facility** (ZLD), is an industrial plant without discharge of wastewaters. Target ZLD is normally reached by

- Waste water strong recovery clarification needed
- Separation by evaporation or boiling of water part of waste water not reusable, in evaporators, crystallizers and condensate recovery. ZLD plants produce solid waste.

Reverse Osmosis System.

Reverse osmosis (RO) is a water purification technology that uses a semipermeable membrane to remove ions, molecules, and larger particles from drinking water. In reverse osmosis, an applied pressure is used to overcome osmotic pressure, a colligative property, that is driven by chemical potential differences of the solvent, a thermodynamic parameter. Reverse osmosis can remove many types of dissolved and suspended species from water, including bacteria, and is used in both industrial processes and the production of potable water. The result is that the solute is retained on the pressurized side of the membrane and the pure solvent is allowed to pass to the other side. To be "selective", this membrane should not allow large molecules or ions through the pores (holes), but should allow smaller components of the solution (such as solvent molecules) to pass freely.



#### Clear Water Treatment

#### Multi Grada Filler

A latest concept in the water treatment technology, a Multi Grade Filter consists of vertical or horizontal pressure sand filters that contain multiple layers of coarse and fine sand (pebbles and gravels) in a fixed proportion. It is a kind of a deep filter bed with adequate pore dimensions for retaining both large and small suspended solids and un-dissolved impurities like dust particles

#### **Activated Carbon Filter**

Activated carbon filters are generally employed in the process of removing organic compounds and/or extracting free chlorine from water, thereby making the water suitable for discharge or use in manufacturing processes. Eliminating organics in potable water, such as humic and fulvic acid, prevents chlorine in the water from chemically reacting with the acids and forming trihalomethanes, a class of known carcinogens.

### **Water Softening System**

Water softening is the removal of calcium, magnesium, and certain other metal cations in hard water. The resulting soft water is more compatible with soap and extends the lifetime of plumbing. Water softening is usually achieved using lime softening or ion-exchange resins.

Conventional water-softening appliances intended for household use depend on an ion-exchange resin in which "hardness ions" - mainly Ca<sup>2+</sup> and Mg<sup>2+</sup> are exchanged for sodium ions. As described by NSF/ANSI Standard 44, ion-exchange devices reduce the hardness by replacing magnesium and calcium (Mg<sup>2+</sup> and Ca<sup>2+</sup>) with sodium or potassium ions (Na<sup>+</sup> and K<sup>+</sup>)."Ion exchange resins, in the form of beads, are a functional component of domestic water softening units.







#### **Membrane Filteration**

**Microfiltration** usually serves as a pre-treatment for other separation processes such as ultrafiltration, and a post-treatment for granular media filtration. The typical particle size used for microfiltration ranges from about 0.1 to 10  $\mu$ m. In terms of approximate molecular weight these membranes can separate macromolecules of molecular weights generally less than 100,000 g/mol. The filters used in the microfiltration process are specially designed to prevent particles such as, sediment, algae, protozoa or large bacteria from passing through a specially designed filter. More microscopic, atomic or ionic materials such as water ( $H_2O$ ), monovalent species such as Sodium ( $Na^+$ ) or Chloride ( $Cl^\square$ ) ions, dissolved or natural organic matter, and small colloids and viruses will still be able to pass through the filter.

#### **Ultra Filtration**

Microfiltration usually serves as a pre-treatment for other separation processes such as ultrafiltration, and a post-treatment for granular media filtration. The typical particle size used for microfiltration ranges from about 0.1 to 10  $\mu$ m. In terms of approximate molecular weight these membranes can separate macromolecules of molecular weights generally less than 100,000 g/mol. The filters used in the microfiltration process are specially designed to prevent particles such as, sediment, algae, protozoa or large bacteria from passing through a specially designed filter. More microscopic, atomic or ionic materials such as water (H2O), monovalent species such as Sodium (Na+) or Chloride (CI $\square$ ) ions, dissolved or natural organic matter, and small colloids and viruses will still be able to pass through the filter.

# **Disinfection System**

Ozonation
Chlorination
UV Treatment





# **Swimming Pool**

Netsol has started building pools in civil work with conventional filtration system. Later used the new ways to make pools economical and technologically advance. We have researched the various method of making pools world class.

Olympic pool items like diving boards, floating lanes, starting blocks, back stroke indicator, false start ropes and lane binder stand, water polo goal post.

## **Water Bottling Plant**

We also deal in water bottling plant, which include five stage filtration of water, filling, labelling, and packaging of water bottle. We design the plant as per client's requirement and shall meet all the Indian standard norms as per IS: 14543 for packaged drinking water. We include all the necessary equipments to give a well-engineered and reliable Water Treatment for Packaged Drinking Water. We have earned a high reputation in the industry for our quality, design and performance. Our technical expertise is always at your disposal to assist you in operating and maintaining systems for years to come.



#### **Client List**

















































































































































# **Client List**

Efflue	Effluent Treatment Plant				Sewage Treatment Plant			
S. No	Client	Place	Capacity	S. No	Client	Place	Capacity	
1	Sharda University	Greater Noida	200KLD	1	SDS Nri Residency	Noida	1500KLD	
2	Kailash Hospital	Jewar	300KLD	2	Prateek Wisteria	Noida	1200KLD	
3	Kailash Hospital	haridwar	150KLD	3	Exotica Fresco	Noida	650KLD	
4	D.P. Group	noida	200KLD	4	Sleep Well	Greater Noida	200KLD	
5	Parle Biscuits Ltd	ranchi	280KLD	5	Exedy india Itd	Greater Noida	120KLD	
6	Brij Honey	bharatpur	100KLD	6	Neel kamal furniture Itd	Greater Noida	50KLD	
7	Anondita Health Care	sonepat	150KLD	7	Career Launcher	Greater Noida	70KLD	
8	Vishal Pipe Limited	sikandrabad	150KLD	8	D.P. Group	Noida	50KLD	
9	Madukar Hospital	Delhi	200KLD	9	Vishal Pipe Limited	Sikandrabad	110KLD	
10	Indocon Honey	haryana	75KLD	10	V3S infrastructure	Noida	800KLD	
11	Bajaj Energy pvt ltd	autraula	1250KLD	11	Sleep Well	Shiliguri	80KLD	
12	Anand Projects limited	ihansi	1000KLD	12	Prateek Edifice	Noida	1000KLD	
13	Mark Hospital	shiliguri	180KLD	13	Bajaj Energy Itd	Maksudapur	120KLD	
14	Darmian Foods	Greater Noida	50KLD	14	Bajaj Energy Itd	Uttraula	90KLD	
15	Rukmani Steels	mathura	25KLD	15	D.P. Group	Guwahati	25KLD	
16	Xpert Bath Fitting	mathura	30KLD	16	Bhawan precision	Haridwar	70KLD	
17	Manohar Filaments Dhaka	bangladesh	75KLD	17	Kailash Hospital	Haridwar	150KLD	
18	Every other Day (E-O-D)	Delhi	150KLD	18	Kailash Hospital	Khurja	200KLD	
19	Laxmi remote	noida	15KLD	19	Kailash Hospital	Dehradun	400KLD	
20	Bafaco Pharmacueticals	noida	10KLD	20	Exotica dream ville	Noida	600KLD	
21	Crauties health care	noida	10KLD	21	Almora medical college	Almora	750KLD	
22	Union pile penang	malasiya	250KLD	22	Aditya world city	Ghaziabad	100KLD	
23	Burman Harbal care	sikkim	75KLD	23	SDS Nri Residency	Greater Noida	1000KLD	
24	Almora medical college	almora	250KLD	24	Natraj Builders	Noida	1200KLD	
25	BPS medical college	sonepat	175KLD	25	Khandelwal Edible Oil	Barailly	60KLD	
26	Abhilasha Enterprises	almora	550KLD	26	NTPC	Nabi Nagar	1200KLD	
27	McNally Bharat Engineering company Itd	haryana	120KLD	27	NTPC	Daripalli	1200KLD	
28	SPM Auto	Manesar	85KLD	28	MP State Tourism Development Corp Ltd	Indore	30KLD	
29	PGI Medical College	sonepat	100KLD	29	MP State Tourism Development Corp Ltd	Khandwa	45KLD	
30	G.K.Burman Herbal & Healthcare	South Sikkim	45KLD	30	MP State Tourism Development Corp Ltd	Sehore	25KLD	
31	Bhilangana Hydrop Power Itd	Uttarakhand	45KLD	31	MP State Tourism Development Corp Ltd	Mandala	15KLD	
32	JSW (HBPCL)	Himachal Pradesh	80KLD	32	Abhilasha Developers	Patna	400KLD	
33	Shri Swami Bhooma nand Hospital	haridwar	45KLD	33	AWHO	Jabalpur	100KLD	
34	Central Paramilitary Hospital	Greater Noida	80KLD	34	D Thakkar	Jabalpur	25KLD	
35	Tata Power	Dhanbad	750KLD	35	Parnika Constructions	Bhopal	345KLD	
36	IPCA	sikkim	90KLD	36	DCM SriRam	Rupapur	180KLD	
37	Nutricharge wellness nutrition	Manipur	210KLD	37	DCM SriRam	Loni	180KLD	
38	Star track terminals Pvt ltd.	Dadri	10KLD	38	Skyline	Greater Noida	200KLD	
39	Minda Corporation Ltd.	Greater Noida	25KLD	39	BHEL	Rudrapur	95KLD	
40	Jaipuria Infrastructure Developers Pvt Ltd	ghaziabad	50KLD	40	GMR	Nagpur	200KLD	
41	Prayeen Dairy	Jabalpur	100KLD	41	L & T (Larsen and Turbo)		60KLD	
42	Akshit Farms	Jabalpur	120KLD	42	Rama Constructions	Greater Noida	3500KLD	
43	Kabir Farms constructions & Developers	Jabalpur	80KLD	43	IT Park	Jabalpur	120KLD	
		400						

44	IPCA	Sikkim	50KLD
45	Shriji Infratech	Jabalpur	2500KLD
46	Sun infra City Park	Shahjahanpur	2000KLD
47	Alliance Builders & Contractors	Barailly	1500KLD
48	Saya Zion	Ghaziabad	415KLD
49	Bajaj Energy Itd	Uttraula	85KLD
50	Prateek Edifice	Noida	1000KLD

#### Reverse Osmosis System

S. No	Client	Place	Capacity
1	SPM Auto	Manesar	5000LPH
2	ISKON Temple	Mathura	6000LPH
3	Anondita Health Care	Mathura	5000LPH
4	Jaipuria Infrastructure Developers Pvt Ltd	Noida	3000LPH
5	Bafaco Pharmacueticals	Noida	2000LPH
6	crauties health care	Noida	2000LPH
7	Indocon Honey	Sonepat	5000LPH
8	Nazeer food	Ghaziabad	6000LPH
9	Surya Pharmacueticals	Nepal	1000LPH
10	Abhilasha Enterprises	Almora	4000LPH
11	Bharat group	J &k	2000LPH
12	Vedic Natural care Pvt Ltd	Phase 2 Noida	15000LPH
13	Laxmi remote	Noida	5000LPH
14	Ssa projects Pvt Ltd.	Noida	1000LPH
15	Paraj Exim	Rudrapur	1000LPH
16	PS Aqua Pvt Ltd.	Jaipur	2000LPH
17	Apm Terminals	Dadri	1500LPH
18	Nitin Enterprises	Greater noida	5000LPH
19	Sanjay Gases	Surajpur	1000LPH
20	Aishani constructions pvt ltd	Ballabh garh	5000LPH
21	Ambalika Institute	Lucknow	5000LPH
22	Shriji Agencies	Pratapgarh	3000LPH
23	Chauhan Residency	Greater Noida	2000LPH
24	Nazeer Food	Noida	4000LPH
25	ATC Telecom Mobil Tower	Baghpat	2000LPH
26	Laxmi Gramodyog Seva Sansthan	Haridwar	1000LPH
27	Surya Enterprises	Delhi	5000LPH
28	Indocon Honey	Sonepat	3000LPH
29	Rahul Enterprises	Dadri	10000LPH
30	KMTC Exim Pvt. Ltd.	Noida	2000LPH

#### **Swimming Pool**

S. No	Client	Place
1	Marvel Homes	Greater Noida
2	Exotica Fresco	Noida
3	MSX Homes	Noida
4	Little Flower	Mau
5	DPS School	Babua
6	Kailash Hospital	Greater Noida
7	JMC Projects (NTPC)	Khargone
8	JMC Projects (NTPC)	Narshingpur
9	Birla Public school	Patna
10	Shriji agencies	Pratapgarh
11	Prateek Wisteria	Noida
12	Prateek The Royal Cliff	Ghaziabad

#### Fire Fighting System

S. No	Client	
1	Kailash Hospital	Haridwar
2	Kailash Hospital	Khurja
3	Kailash Hospital	Dehradun
4	Exotica dream ville	Noida
5	Prateek Edifice	Noida
6	Prateek Grand city	Ghaziabad
7	Prateek Fedora	Noida
8	Prateek Stylome	Noida
9	Prateek Laurel	Noida
10	V3S Infrastructure	Greater noida
11	SDS Nri Residency	Greater noida

Noida

#### **Plumbing Work**

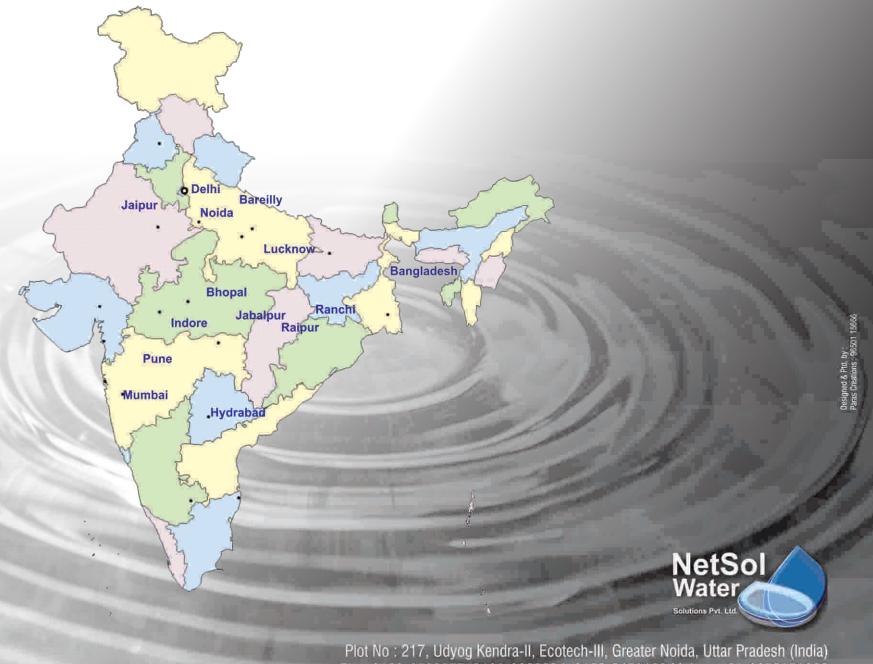
SDS Nri Residency

12

FIUITI	Jing work	
S. No	Client	
1	Prateek Edifice	Noida
2	Prateek Grand city	Ghaziabad
3	Prateek Wisteria	Noida
4	Exotica Dreamville	Noida
5	Kailash Hospital	Khurja
6	Kailash Hospital	Dehradoon
7	SDS Nri Residency	Noida
8	Saya Zion	Ghaziabad
9	shriji Builders	Lucknow
10	Skyline	Greater Noida
77	Prateek The Royal Cliff	Ghaziabad

#### **Our Presence**

- 1. Delhi
- 2. Noida
- 3. Mumbai
- 4. Pune
- 5. Lucknow
- 6. Bhopal
- 7. Ranchi
- 8. Hydrabad
- 9. Indore
- 10. Jabalpur
- 11. Raipur
- 12. Jaipur
- 13. Bareilly
- 14. Malaysia
- 15. Bangladesh



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