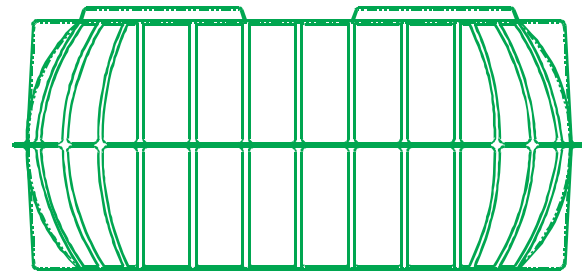
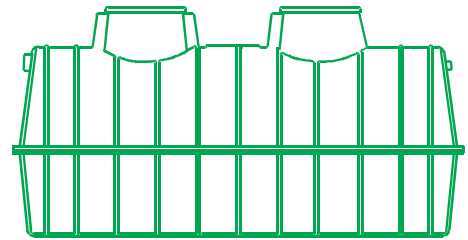
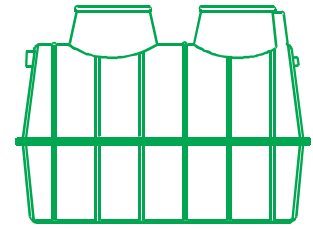


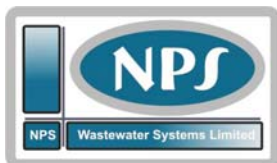
## CA Series

**Wastewater Treatment  
for:**

- Recreational**
  - Residential**
  - Commercial**
- Applications.**



# NPS BATCH-TREAT SYSTEMS



**Completely Automatic**  
**Minimal Maintenance**  
**Noise and Odor Free**  
**Overload Reserve**  
**Reduced Drainfield Size**

# The NPS Batch-Treat System

- The NPS Batch-Treat System has 5 biological treatment zones:
- (A) Solids Retention zone to hold sewage until it is broken down for treatment. A screen holds back large particles.
  - (B) Aeration zone, to supply oxygen to the aerobic organisms. The Aeration Pump (P1) mixes oxygen with sheared solids, uses liquid force through the screen to break down solids in zone (A), and flushes out the clarifier (C).
  - (C) Settling Clarifier, where suspended solids settle out of the final effluent.
  - (D) Effluent Discharge zone, that is pumped to the disposal field by (P2), after the settling period.
  - (E) The Reserve Volume zone acts as a buffer to absorb large inflows of sewage without affecting the Batch-Treat process.

## NOISE AND ODOR FREE

The aerobic Batch-Treat process functions in an enclosed and liquid environment. The highly efficient oxygen transfer and mixing in the NPS aeration system ensures that the plant and effluent are essentially odor-free. The only mechanical operation is submersible pumps and, under water, these pumps are almost inaudible. Unlike other types of treatment systems, there are no dead areas in the NPS plant to accumulate sludge or exposed biomass to cause odors and provide a breeding bed for insects.

## HIGHER OPERATING TEMPERATURES

NPS systems retain heat from the incoming sewage, aerobic bacteria activity, and heat generated by the submersible pumps. Higher temperature increases enzyme and biological activity that increases the efficiency of the Batch-Treat process. NPS systems operate efficiently in sub-zero temperatures. The plant effluent has a high dissolved oxygen content, and does not freeze, except in extreme conditions.

## PEAK LOAD RESERVE

The *Reserve Volume* zone in NPS systems acts as a buffer to absorb large sewage liquid inflows with minimal effect on the process. This volume retention and the Batch-Treat process cycle creates a longer liquid retention period than other processes. The batch discharge cycle of over 3 hours also gives the disposal field a rest between cycles.

## LOW SLUDGE BUILD-UP

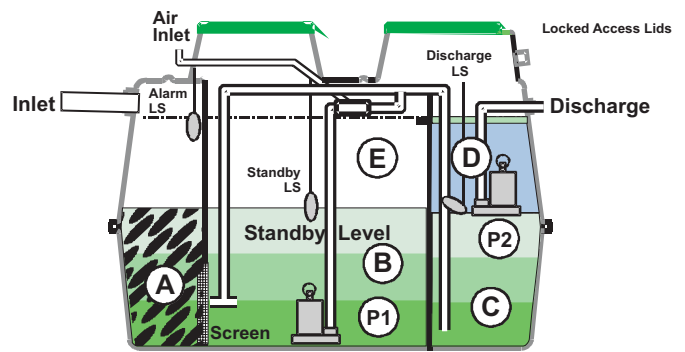
Many treatment systems create a high sludge build-up in their tanks that must be pumped out regularly to prevent odors. The NPS system continuously returns sludge to the Aeration zone for further aeration and biological breakdown. This results in extremely low sludge deposits that are mostly biological ash and insoluble particles. With normal sewage loading, an NPS plant will require less frequent pump-outs than plants using other processes.

## COMPLETELY AUTOMATIC, MINIMAL MAINTENANCE

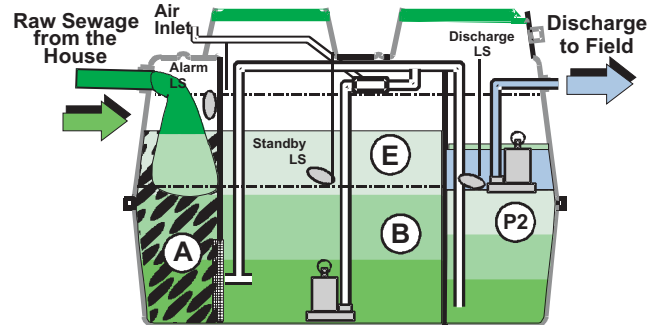
All NPS Batch-Treat systems are completely automatic and require no regular supervision while operating. The controller can be adjusted to compensate for the installation loading and inflow peaks. The NPS Batch-Treat system is the only system that detects an overload and activates an alarm. The only maintenance required is a periodic check and clean-down by your serviceman.

## CORROSION-PROOF CONSTRUCTION, EASY INSTALLATION

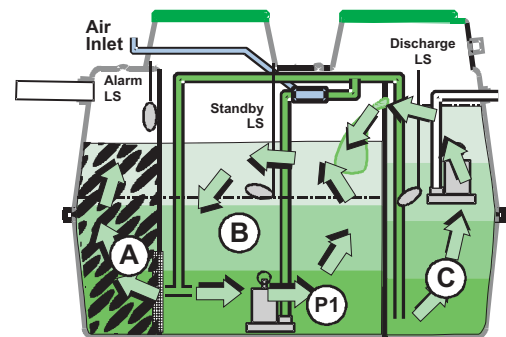
The NPS CA Series Batch-Treat plants for single homes to small apartment blocks are built of fiberglass, and can be buried to lid level. Hatch covers are locked and no fences or sheds are necessary.



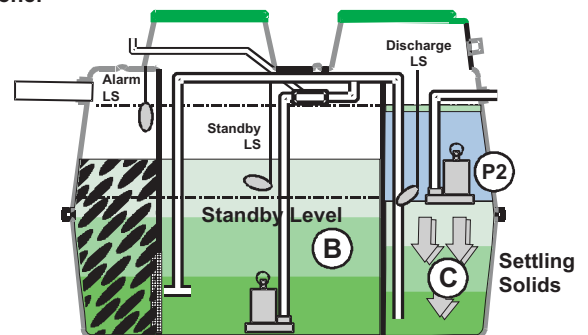
**STANDBY CYCLE** When there is no sewage flow into the plant, the plant automatically shuts off by a level switch in the Aeration zone (B). A timer activates the aeration pump (P1) to periodically mix the liquid in the zones and keep the aerobic organisms alive. This conserves energy.



**SEWAGE INFLOW** enters the solids zone (A). Liquid in the Aeration zone (B) rises in the Reserve Volume buffer zone (E). The Standby Level Switch enables the control timer to activate the discharge pump (P2) and a batch of treated effluent is discharged to the field.



**AERATION CYCLE** with pump (P1) mixes oxygen into the plant liquid to stimulate the aerobic organisms. A nozzle pumps the aerated liquid into the Solids zone (A) and Aeration zone (B). Settled solids are also flushed out of the Clarifier zone (C) over a weir back into the Aeration zone.



**SETTLING CYCLE** in the Clarifier (C) settles out the solids in the effluent batch. After a settling time set by the controller, the Discharge pump (P2) sends a treated batch to the disposal field. The Aeration Cycle then comes on and fills and flushes the Clarifier. These cycles are repeated until the level in the Aeration zone (B) reaches Standby. The discharge is disabled and the plant waits for more sewage influent.

# Sized to Suit

Choose the plant size that best suits your current and future requirements. If you are planning an in-law suite in your basement, for example, add this at the planning stage.

**Typical Applications:**  
Residential, Apartments, Gas Stations, Industrial Plants, Mobile Home Parks, Recreational Areas, Restaurants, Schools, Resorts.

NPS also has special CA systems where regulations require a septic tank before the package treatment plant.

TREATMENT SIZE APPLICATION			Multiple Houses/Dwellings		
			Litres/gallons		
			One	Two	Three
Single Family Homes	1,2-Bedroom	1,136/250	CA5W	CA10W	CA10W
	3-Bedroom	1,363/300	CA5W	CA10W	CA20W
	4-Bedroom	1,700/375	CA5W	CA10W	CA20W
	4br Large Home	2,045/450	CA7W	CA10W	CA20W
	5-Bedroom	2,045/450	CA7W	CA10W	CA20W
	6-Bedroom	2,500/550	CA7W	CA20W	CA20W
Duplex Houses	1,2-Bedroom	2,270/500	CA10W	CA20W	CA20W
In-Law Suites/Apartments	3-Bedroom	2,724/600	CA10W	CA20W	CA20W
Four-Plex House/Apartments	1,2-Bedroom	4,540/1000	CA20W	CA20W	consult
	3-Bedroom	5,448/1200	CA20W	CA20W	NPS
Small Apartment Blocks	1,2-Bedroom	1,136/250	4 to 8 Units CA20W		

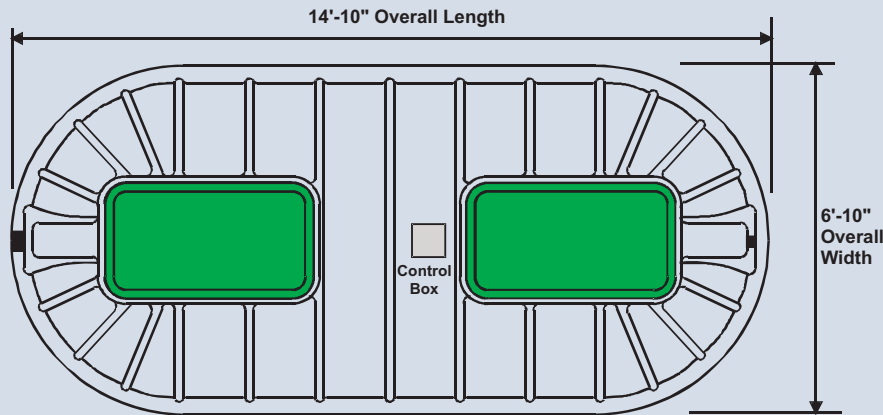
Consult NPS on sizing for all multiple dwelling systems.

**IMPORTANT:** Maximum burial depth for all CA Series tanks is 2 feet.

## Model CA20W 2,000 gpd

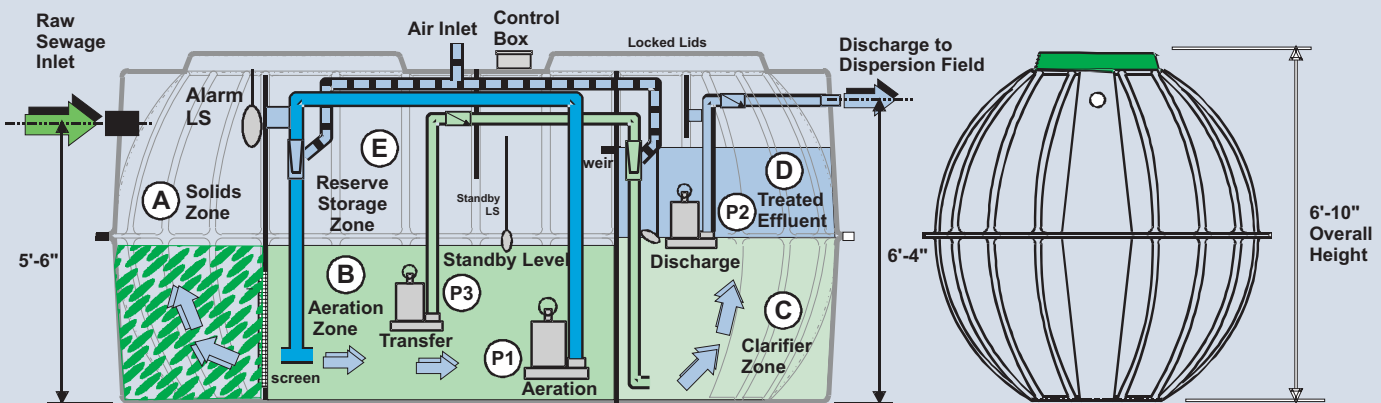
The CA20 unit is the largest in the CA series. The Batch-Treat process has an additional pump [P3] to transfer and aerate liquid pumped into the Clarifier. During the settling cycle in the Clarifier, the main aeration pump [P1] continues to operate in the aeration zone without disturbing the Clarifier.

**FEATURES**  
Control Panel:  
**NEMA 4 CSA Approved**  
Alarm Unit:  
**12v Remote with Indicator Light**  
Construction:  
**Tank- Fiberglass reinforced plastic**



PLAN VIEW

SPECIFICATIONS	MODEL CA20W
	Litres/gallons
<b>Treatment Capacity (24hrs)</b>	
Standard Imp Gal/Day	9,080/2,000
Discharge Volume	1,136/250
Standard Batches/Day	8
Total Tank Volume	gal 10,442/2,300
<b>Plant Dimensions</b>	
Length	ft 14'-10"
Width	ft 6'-10"
Height	ft 6'-10"
Inlet Height	ft 5'-6"
Outlet Height	ft 6'-4"
<b>Piping Connections</b>	
Inlet (ABS f-socket)	6"
Outlet (PVC f-socket)	1-1/2"
<b>Electrical Systems (115v/230-1phase/60 hz)</b>	
Power Supply	20amp
Maximum Pump Size	hp 1/2
<b>Shipping Weight</b>	lbs 1,650
<b>Tie down Package</b>	CA20

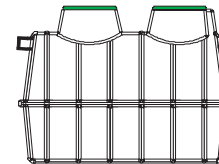
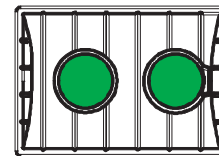


CROSS-SECTION and PROCESS DETAIL

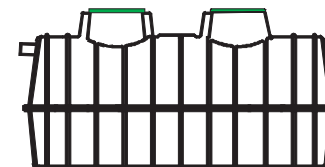
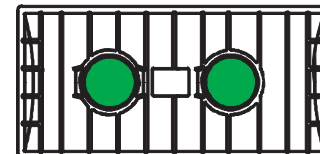
END VIEW

# CA SERIES 400 to 1,000 gpd PLANTS

All electrical equipment, wiring, and piping must comply with local Building Codes and Regulations.



**CA5W**



**CA7W and CA10W**

## FEATURES

Control Panel:  
NEMA 4 CSA  
Approved with  
flow recorder.  
(batch counter)

Alarm Unit:  
12v Remote  
with Indicator Light

Construction:  
Tank- Fiberglass  
reinforced plastic  
Pipe-  
Sched 40 PVC and  
ABS CSA



**End View**

SPECIFICATIONS	NPS MODEL		
	CA5W	CA7W	CA10W
Treatment Capacity (24hrs)	Litres/Gallons 1816/400	Litres/Gallons 3,405/750	Litres/Gallons 4,540/1,000
Discharge Volume	304/67	567/125	567/125
Standard Batches/Day	6	6	8
Total Tank Volume	3,405/750	5,493/1,210	5,493/1,210
<b>Plant Dimensions</b>			
Length	ft 7'-10"	ft 11'-3"	ft 11'-3"
Width	ft 5'-8"	ft 5'-8"	ft 5'-8"
Height	ft 5'-8"	ft 5'-8"	ft 5'-8"
Inlet Height	ft 4'-4"	ft 4'-4"	ft 4'-4"
Outlet Height	ft 4'-3.5"	ft 4'-3.5"	ft 4'-3.5"
<b>Piping Connections</b>			
Inlet (ABS f-socket)	4"	4"	4"
Outlet (PVC f-socket)	1-1/2"	1-1/2"	1-1/2"
<b>Electrical Systems (115v/1phase/60 hz)</b>			
Power Supply	20amp	20amp	20amp
Maximum Pump Size	hp 1/3	hp 1/3	hp 1/2
Shipping Weight	lbs 450	lbs 650	lbs 700
Tie down Package	CA	CA	CA

**WARRANTY** NPS Wastewater Systems Ltd warrants the CA series of Batch-Treat plants to be free from defects in materials and workmanship for a period of 1 year. The FRP tank is warranted for a period of 5 years.

NPS manufactures and services wastewater treatment systems ranging in capacity from single family homes to large scale residential and commercial subdivisions. Contact us or ask our dealer to help you consider the most economical and practical way to solve your sewage and wastewater treatment requirements. Batch-Treat Systems are approved in Canada and the United States

## NPS WASTEWATER SYSTEMS LIMITED

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