

OPERATIONAL CONTINUITY OF THE DRINKING WATER PLANT (WELLS AND RESERVOIR)

KITIGAN ZIBI



In an emergency, first call Emergency Services at ISC at 418-563-5499, the local Emergency Measures Coordinator (M. Robin Decontie 819-449-5593), your Circuit Rider (M. Marc LeMay 418-882-7358) and your regional First Nations and Inuit Health Branch Officer (M. Edward Findikoglu 514-496-8928), or your local Community Based Water Monitor (M. Kevin Jacko 819-441-8041) so that they can guide you in your communications, in the way you work and precautions to take.

***FOR ASSISTANCE CALL
MARC LEMAY
418-882-7358***

PRINCIPLE OF OPERATION

- Raw water is supplied to the plant by two wells each containing a single pump. This raw water undergoes chlorination using Sodium Hypochlorite. A Manganese sequestrate is also added in order to keep the Manganese soluble. The treated water is then supplied to the community and the reservoir (located at the other extremity). At the reservoir there is another chlorination system. At any given time the community is supplied by the wells or the reservoir. The sequence is as follows; the service well pump comes on when the level of the reservoir reaches 19 m, during this time the community is supplied by the service well pump and it's associated treatment (disinfection/sequestrate). The excess water not consumed by the community goes into filling up the reservoir (Stand pipe). When the level of the reservoir reaches 22 m (in winter) or 24 m (in summer), the service well stops and the flow through the network is reversed and the community is now supplied via the reservoir and it's associated treatment (disinfection) until the level of the reservoir reaches 19 m and the service well kicks in again and flow reverses once again. This alternation continues with each cycle. A fire pump located at the reservoir comes on when the pressure in the network drops below it's set point. There are inline continuous analyzers located at the wells site and reservoir. There is a process control computer (SCADA) located at the community garage that enables the operators to monitor the various systems.
- When in an emergency situation, a preventive boil water advisory should be issued. In order to make things as easy as possible but still distribute quality water, we recommend shutting off the chlorine dosage system at the reservoir and concentrate only on the chlorine dosing system at the wells. It is also recommended you turn off the sequestrate dosing system. Both procedures are explained further in this document.

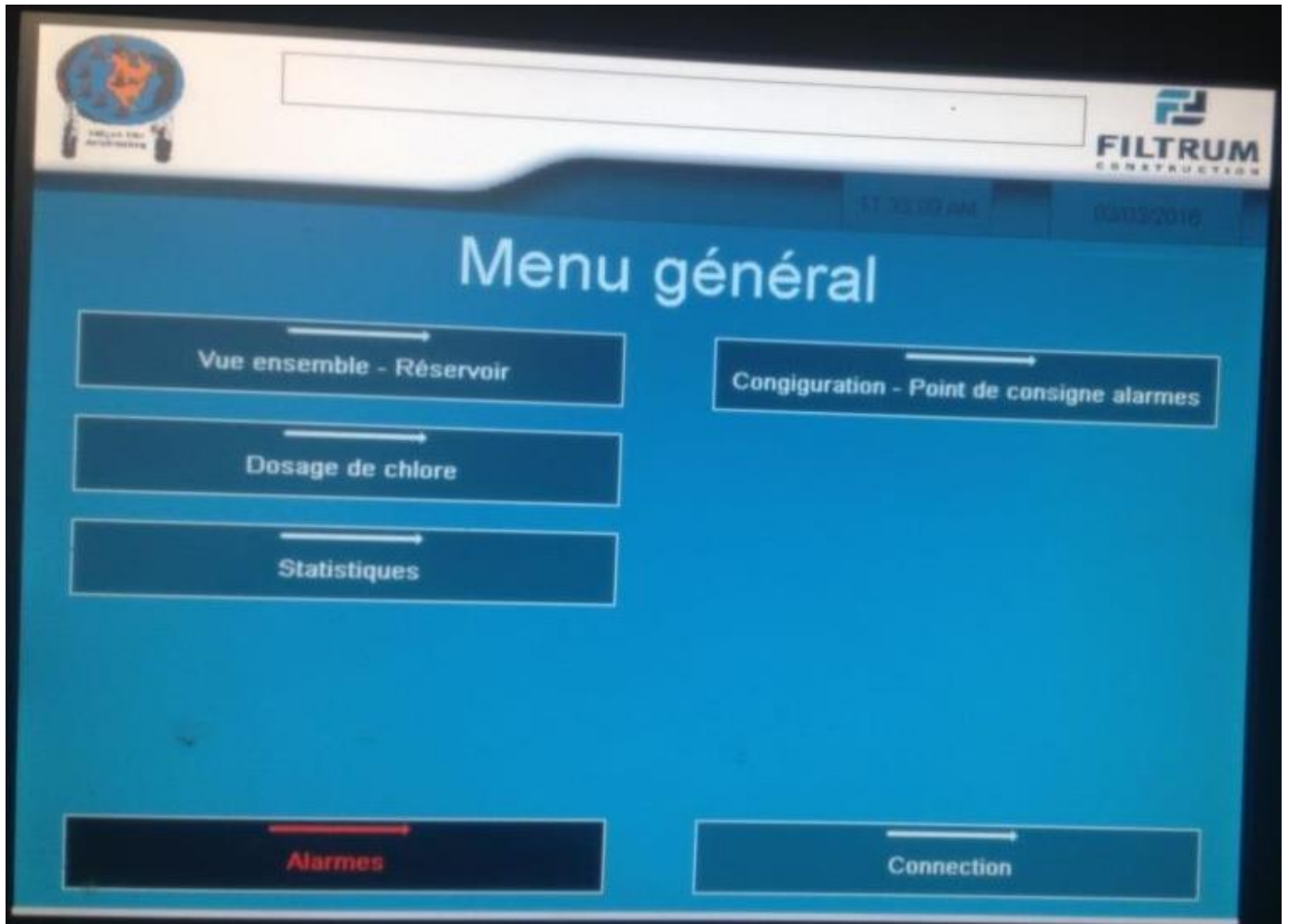
WELL OPERATION ON AUTOMATIC

- The well pump starts and stops depending on the level in the reservoir.
- The well pump comes on when the level in the reservoir reaches (while emptying) 19 m. The well pump shuts off when the level in reservoirs reaches (while filling) 22 m (in winter), 24 m (in summer)
- To monitor the level in the reservoir go to the reservoir building and look at the control panel located right of the door.

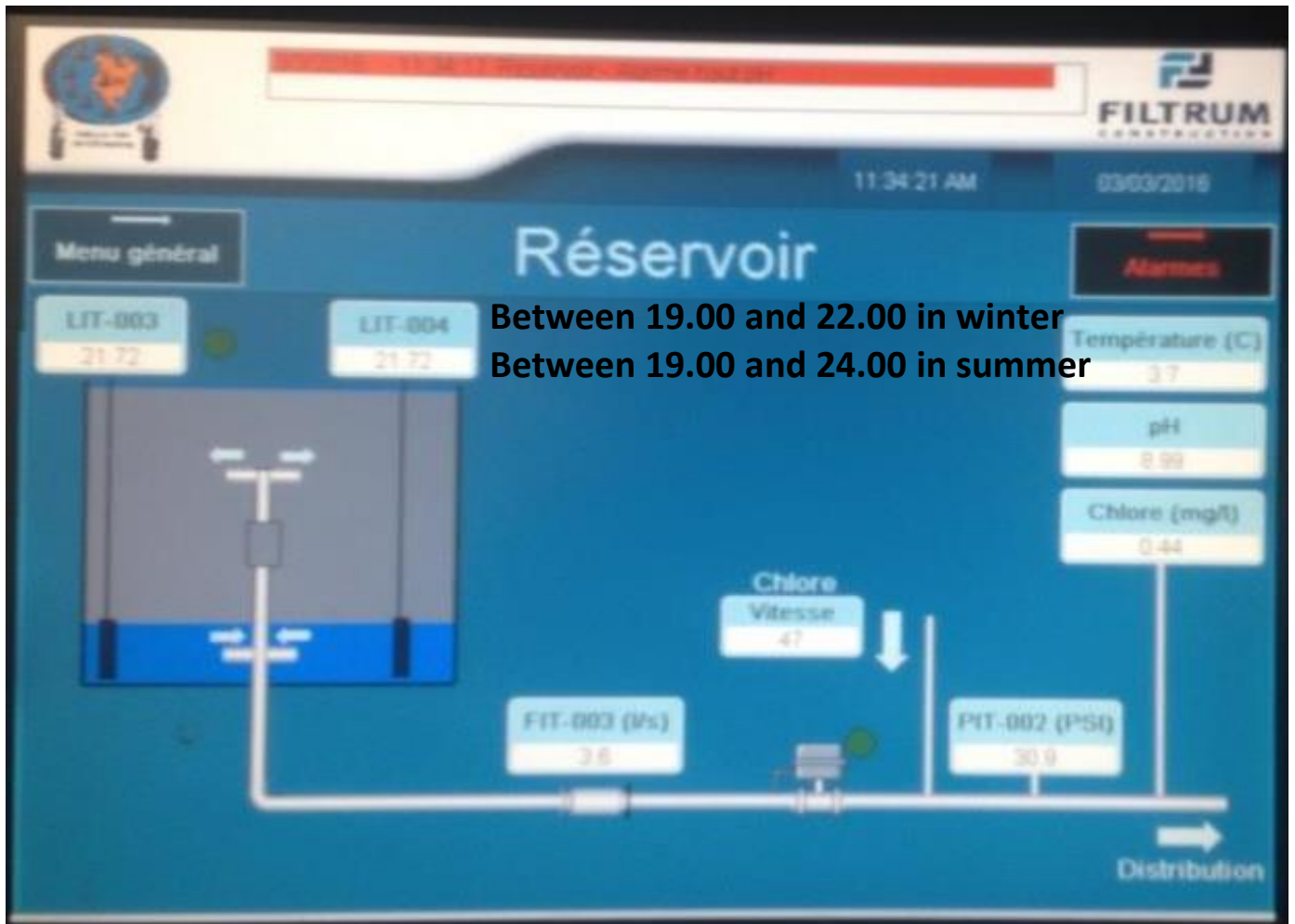




- Use the touch screen to go to the page titled "Menu général"

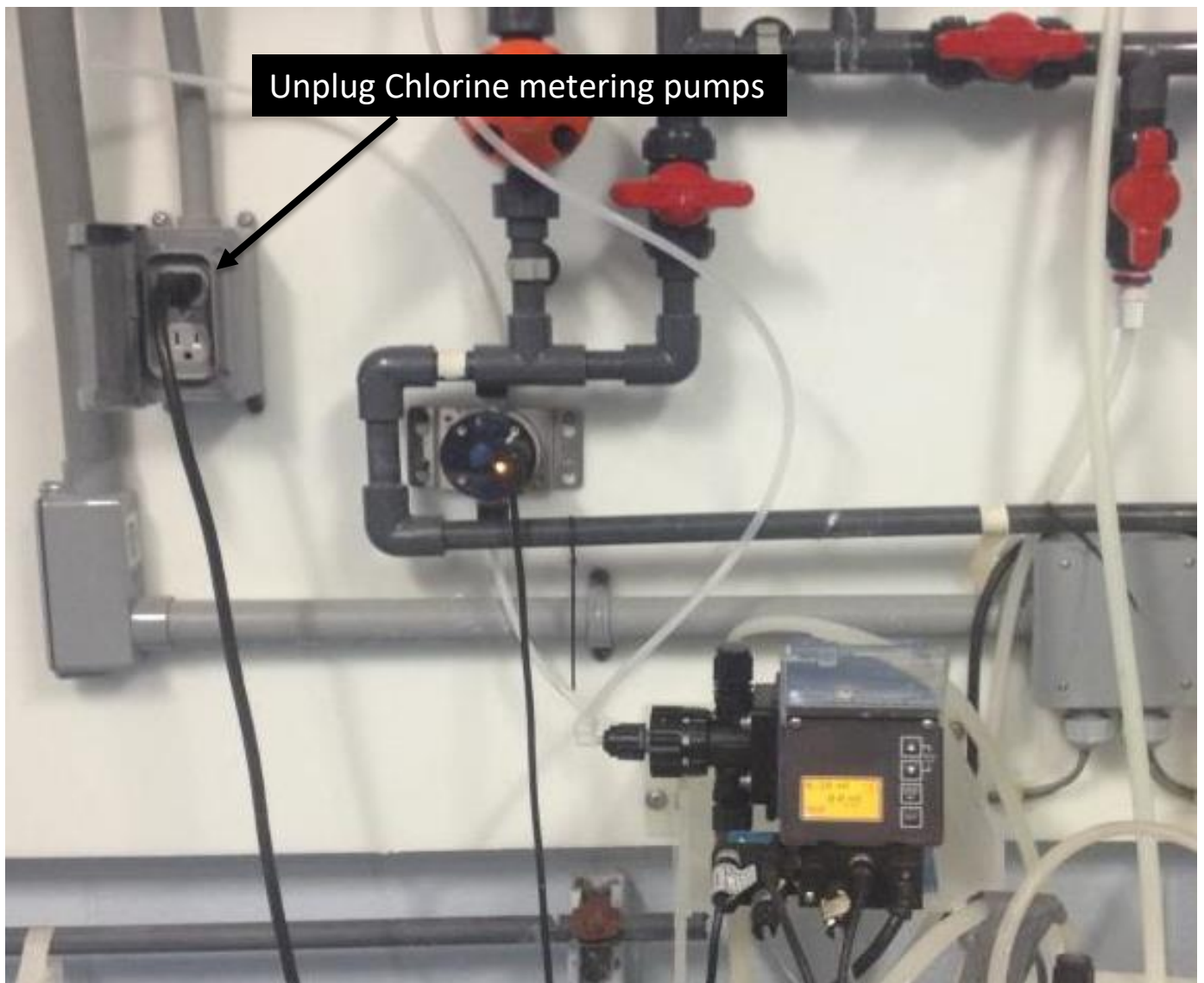


- Go to "Vue ensemble - Réservoir"



- The reading on LIT-003 and LIT-004 will tell you the level of water in the reservoir
- If the reservoir is emptying, a reading on FIT-003 will indicate how much water is leaving the reservoir in L/s

- If the reservoir is filling, the reading on FIT-003 will be 0 L/s and a message at the bottom of the page will tell you which well pump is running
- If the readings on LIT-003 and LIT-004 are above 22,00 m (in winter) or 24,00 m (in summer) or below 19 m you will have to operate the wells manually (explained further in this document)
- While your at the reservoir building unplug the chlorine metering pumps

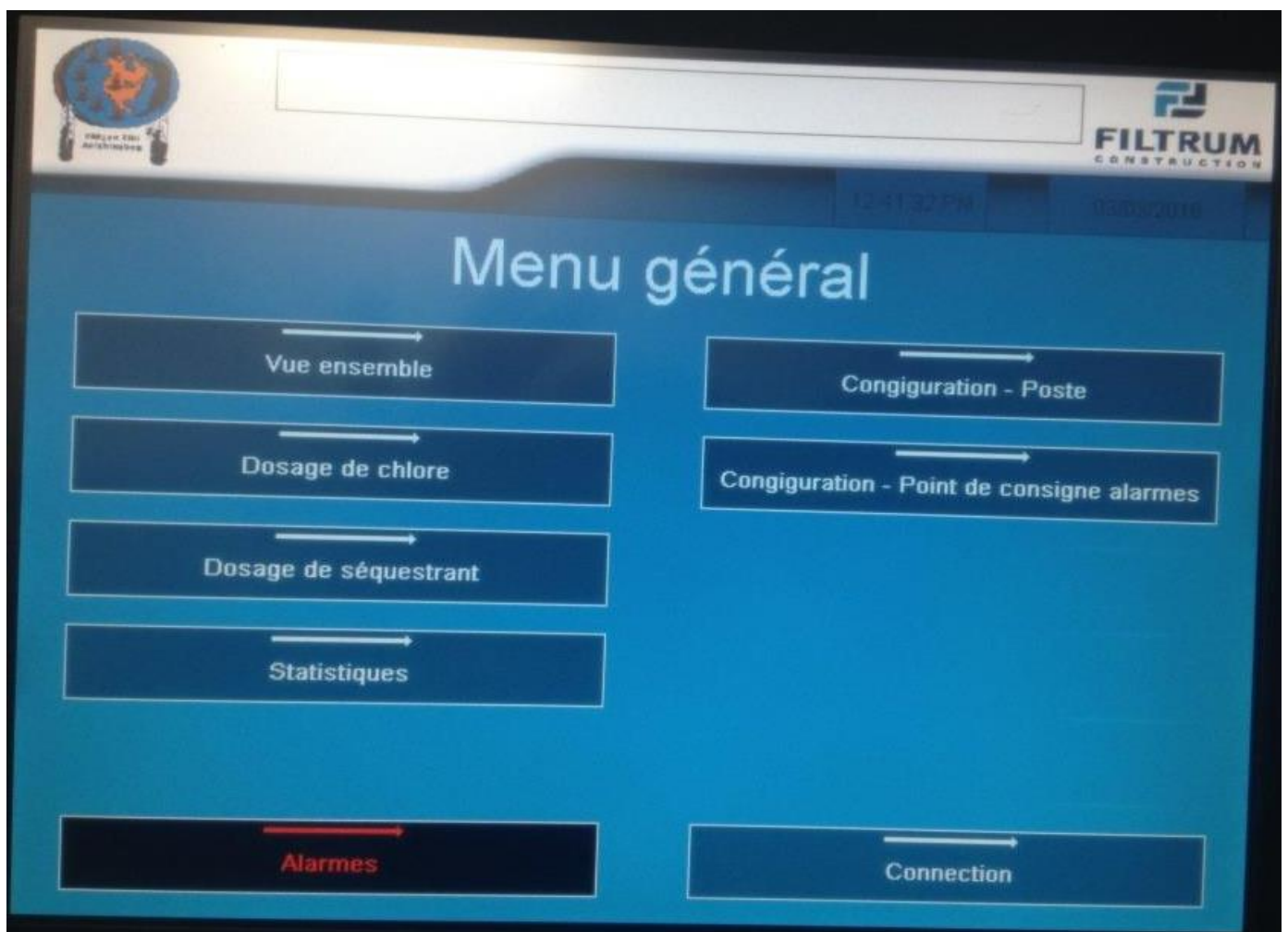


- Go to the well building

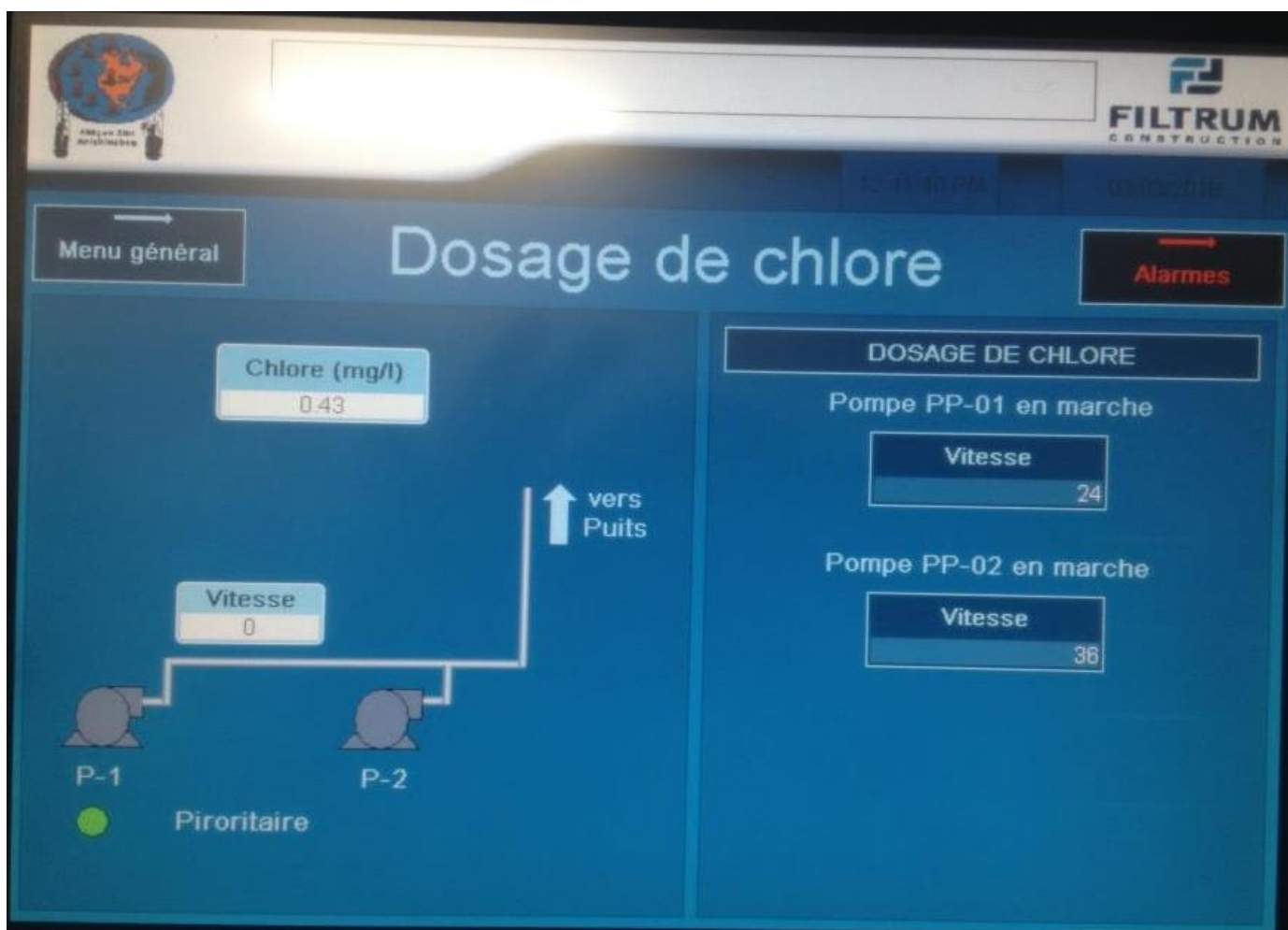
- At the well building there is an identical control panel right of the door as at the reservoir building



- Use the touch screen to go to the page titled "Menu général"



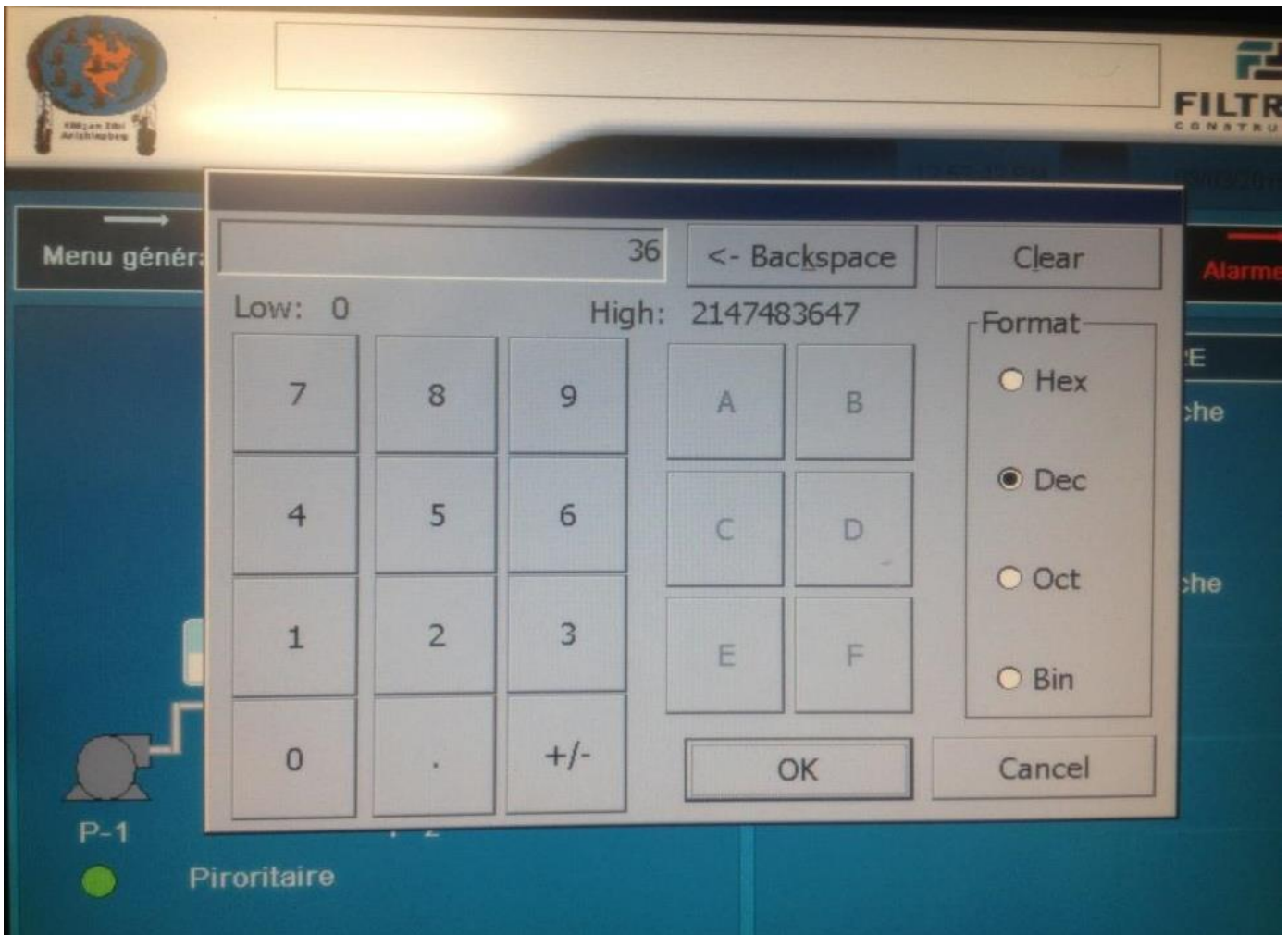
- Go to "Dosage de chlore"



- Green dot indicates which pump is in service

"Chlore (mg/L)" indicates the concentration of free chlorine in the water. This reading should be between 0,40 mg/L and 0,60 mg/L. If this is not the case you must adjust the chlorine metering pumps.

- If the chlorine concentration is below 0,40 mg/L increase the speed "Vitesse" of the chlorine metering pump that is in service
- If the chlorine concentration is above 0,60 mg/L decrease the speed "Vitesse" of the chlorine metering pump that is in service
- Using the touch screen press on "Vitesse" of the pump which is service



Using the touch screen increase or decrease the speed "Vitesse" of the chlorine metering pump according to your readings. Increase if chlorine concentration is below 0,40 mg/L, decrease if chlorine concentration is above 0,60 mg/L

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- Make changes no greater than **2** at a time. Make only one adjustment per day
- Press OK to save new value
- Now that you're able to adjust the chlorine metering pump, you must maintain the level of chlorine in the tank



- Maintain level between 20 L and 30 L

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Add one 5 Liter jug of javel every 2 to 3 days. Maintain between 20 L and 30 L





WARNING ! GLOVES, EYE PROTECTION AND A RUBBER BIB MUST BE WORN WHILE HANDLING CHLORINE

- If you have to run the well pumps manually (level in reservoir is below 19 m and a well pump is not running or level is higher than 24 m and a well pump is still working)

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At the well building on the same control panel as the touch screen you'll see two selectors. One for well pump n° 1 and the other for well pump n° 2. Each selector has three (3) positions (man/off/auto). To start the pump set selector to "man". To stop pump place selector at "off". You'll have to monitor the level in the reservoir and start and stop a pump in accordance with the level in the reservoir . Maintaining the level between 19 m and 24 m

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