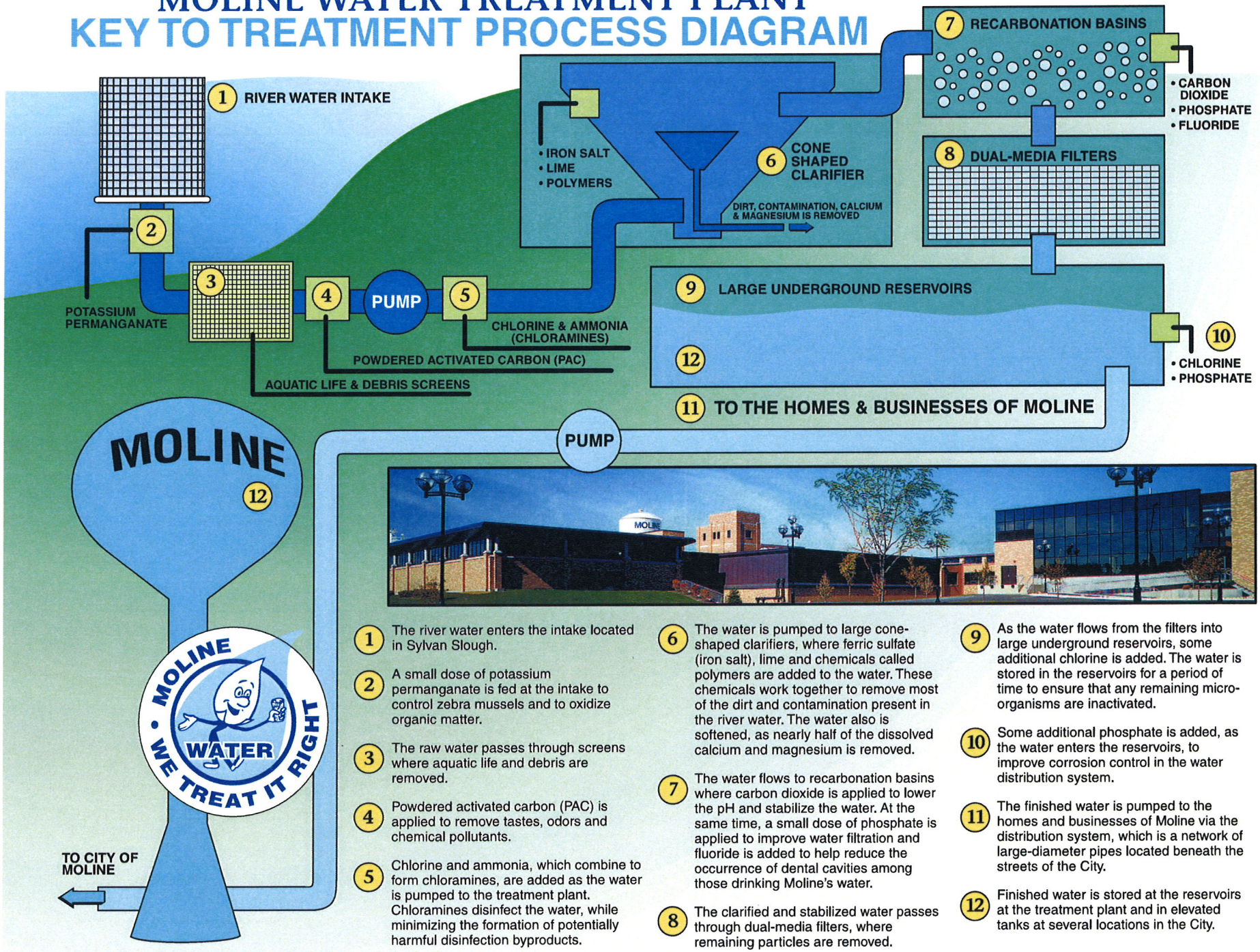
# MOLINE WATER TREATMENT PLANT
## KEY TO TREATMENT PROCESS DIAGRAM




1. The river water enters the intake located in Sylvan Slough.
2. A small dose of potassium permanganate is fed at the intake to control zebra mussels and to oxidize organic matter.
3. The raw water passes through screens where aquatic life and debris are removed.
4. Powdered activated carbon (PAC) is applied to remove tastes, odors and chemical pollutants.
5. Chlorine and ammonia, which combine to form chloramines, are added as the water is pumped to the treatment plant. Chloramines disinfect the water, while minimizing the formation of potentially harmful disinfection byproducts.
6. The water is pumped to large cone-shaped clarifiers, where ferric sulfate (iron salt), lime and chemicals called polymers are added to the water. These chemicals work together to remove most of the dirt and contamination present in the river water. The water also is softened, as nearly half of the dissolved calcium and magnesium is removed.
7. The water flows to recarbonation basins where carbon dioxide is applied to lower the pH and stabilize the water. At the same time, a small dose of phosphate is applied to improve water filtration and fluoride is added to help reduce the occurrence of dental cavities among those drinking Moline's water.
8. The clarified and stabilized water passes through dual-media filters, where remaining particles are removed.
9. As the water flows from the filters into large underground reservoirs, some additional chlorine is added. The water is stored in the reservoirs for a period of time to ensure that any remaining micro-organisms are inactivated.
10. Some additional phosphate is added, as the water enters the reservoirs, to improve corrosion control in the water distribution system.
11. The finished water is pumped to the homes and businesses of Moline via the distribution system, which is a network of large-diameter pipes located beneath the streets of the City.
12. Finished water is stored at the reservoirs at the treatment plant and in elevated tanks at several locations in the City.