



# Letter of Recommendation

**My name is Dan Ghorso, chief of the Woodside Fire Protection District. We have three fire stations, that protect about 16,000-25,000 people spread across two Towns and unincorporated county areas with about 32 square miles of responsibility. Our district is a mix of medium density homes (4-5/acre), low density homes (1-20 acres, many with equestrian facilities), and second growth redwood forest/wilderness.**

**We live in Earthquake country; the San Andreas Fault goes directly through the Fire District. Preparing for the “big one” is something we think about every day. In the event of a large earthquake, we expect the municipal water pipes to break, the roads to become impassable, and the power grid to fail. We had previously planned to purchase one \$40k water purification system for each of our three fire stations (\$120k), until we learned of this Merlin portable, solar powered water purification system. For us, the Merlin system makes a lot more sense: we save money and reduce risk.**

**In the event of “the big one”:**

- 1) Our firefighters won't be hanging out at the fire stations, manning a water distribution system. They will be out in the field, rescuing people from collapsed buildings, putting out fires from broken gas mains, treating the injured, etc. Many firefighters won't be able to get to their fire station, due to road failures/collapse.**
- 2) The roads will buckle; trees will come down, landslides, etc..., so citizens will have a difficult time getting to the centralized fire stations to pick up water.**
- 3) For the few people who do find a way to drive to the fire stations, most lack the water transport devices (i.e. big, clean buckets with lids) to collect drinking water to drive back home. Some will show up with 10 gal buckets, we would fill 'em, but the water would splash out going around a curve, going up/down a hill, stopping at a stop sign, etc. So while citizens might depart the fire station with 2x10 gal buckets filled, they would drive home and arrive with 2 x 1 gals.**

**This Merlin portable, solar powered system saves us money and reduces risk. Including solar panels, wires, taxes, etc they sell for about \$2k apiece. We have 25 Citizen Emergency Response Preparedness Program (CERPP) divisions that serve our 16 k citizens. It saves us money (25x\$2k = \$50k, instead of 3x\$40k = \$120k), and reduces risk, to purchase these water purification systems, and**

put them in the neighborhoods with the CERPP leaders. That way, people can walk down the street and carry back the emergency drinking/cooking water they need until their utilities are restored.

Fresh water sources include: collected rain water, a swimming pool, a hot tub, a pond, a creek, or a small river. Merlin can also add additional filters for the chemicals found in farming communities, i.e. fertilizers and pesticides. The system cannot remove salt from Sea water, nor radioactive materials (like Fukushima).

For capacity planning purposes, the system can deliver up to 1 gal/min (3.8liters) – about the same as a kitchen faucet, which if run 24/7, works out to 5,472 liters/day. World Health Organization (WHO) suggests 2 liters/day/person of drinking water, but more like 10 liters/day when you include clean water to cook, and to clean up. Run at half capacity, each Merlin system delivers some 2736 liters/day/system, or rounding down again, each system can comfortably deliver clean drinking water for some 250 people per day, from any of the sources cited above.

Each region in the USA has their own natural disasters: could be floods, could be earthquakes, could be tornados, could be ice storms, could be hurricanes, etc. Out here in California, we really like the performance of this system (\$/liter of clean drinking water), and its ability to help our citizens after natural (or even some man made) disasters occur. People using this system won't panic; they will survive, until public utilities are restored.



Any questions? Contact me through the Merlin website, at [www.merlinecosolutions.com](http://www.merlinecosolutions.com).

**Dan Ghorso, Fire Chief, Woodside, California**



**WOODSIDE FIRE  
PROTECTION DISTRICT**