Wastes from Boiler Systems

Condensate Boilers

Flue condensers on boilers produce 'condensate' – essentially water with a high pH that is a by-product from natural gas combustion (similar to residential gas furnaces). Zinc may be present due to the galvanized flue. This water is easily diluted to lower the pH and poses no risk to septic/sewer systems. No chemical treatments are required, and there is no other wastewater generated.

Hot Water Boilers

Not 'bled' on a regular basis, may be drained every 1-10+ years for maintenance. Simplest Best Management Practice (BMP) is to store the water from the boiler and put it back in after maintenance. This requires a stainless steel storage tank plus a pump. Very rarely need to discard this liquid.

Steam Boilers

'Bled' or partially drained on a regular basis (usually 1x/day during use but could be more or less frequent depending on time of year and use of the system). Only about 20L bled off each time to remove the sediment/scale that builds up at the bottom of the boiler. Steam boilers are more 'fussy' than hot water boilers, and require more maintenance and care. There are generally 4 common water treatment chemical options:

1. Molybdate-based: quite expensive, Molybdate is a heavy metal, and the solution can't go into septic beds or sewer systems. Can evaporate and dispose at landfill.
2. Sodium-sulphite based: food grade, only about 3/10 efficiency in boiler so needs a lot of attention to maintain the right chemistry. Often need to 'overfeed' on the rates but this leads to salt (EC) buildup in the system. Waste can go to the sewer or septic system without harm.
3. DM (tree-bark extract): Also fairly safe (eco-friendly) but has relatively poor efficiency for the boiler maintenance. Waste can go to the sewer or septic system without harm.
4. Hydrazine: This is a hazardous chemical, but the levels used in boilers are extremely low. Further, this chemical is known (scientific evidence) to degrade completely upon contact (within seconds) with soil and then poses no risk to the environment. There is no residual compound. Note that this compound is not degraded as quickly in water (1-2 hours) so waste should not be put directly into a watercourse.

For more information on boiler chemicals, refer to the MSDS (mix varies with boiler).

Natural Gas 'Portable' Heaters

Fired by natural gas, these heaters are often small and mounted in poly houses. They produce no waste products.

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