

# **Test report on the pulsed water treatment system provided with preventive measures against clogging in the drainpipe under the sink in the cookery on the fifth floor.**

December 22, 2007

## **Outline:**

The pulsed water treatment system, Vulcan, changes the crystal structure of the scales contained in hot water passing through the piping by emitting phase-changing pulses generated by the cable wound over the existing water supply line to let the scales flow out together with water without adhering within the piping.

The treatment water is effective against rusts and scales on the primary side of the water supply pipe. When service water is used and drained on the secondary side, sliminess or clogging in the drain is reduced, preventing the buildup of metallic soaps in the grease trap. This results in the reduction of the problems of molds or stenches likely to accompany drainage. This effect also appears within the drainpipes and wastewater treatment tanks.

The effect of the treatment water lasts for about 48 hours or approximately 2 km in distance.

Vulcan has the following features: (For details, refer to the brochure attached.)

This water treatment system can change the crystal structure of scales without changing the quality of water. Therefore, nothing is added or reduced to or from the ingredients of water. The water through Vulcan is soft and has an increased permeability. Vulcan makes city water to drinking water and can be used as better cooling water.

Other features include:

- Prevents buildups of rusts and scales
- Makes cleaning of kitchen and bathroom much easier (toilets, showers, tiles, joints, etc.)
- Eliminates the necessity of strong chemicals for removing scales.
- Drastically reduces the clogging due to oil balls
- Eliminates the necessity of salts.
- Eliminates the necessity of additives.
- Does not change the water quality.
- Has no side effect.

## **Objectives:**

To alleviate the overflow of drainage out of the basket due to oil balls in the grease trap under the sink of the counter in the cookery on the fifth floor of the building. Also, to save the administrative and maintenance expenses by reducing the periodical cleanings used to be conducted several times a year.

## **Installation (on June 17):**

For treating water in the cookery on the fifth floor, Vulcan is installed on the vertical piping in the warehouse where the nearest main water pipe is exposed. The effectiveness of the Vulcan appears in all the service water on the fifth floor that is supplied through this piping.

Piping size: 50A. (The photo on the right shows the Vulcan installed)

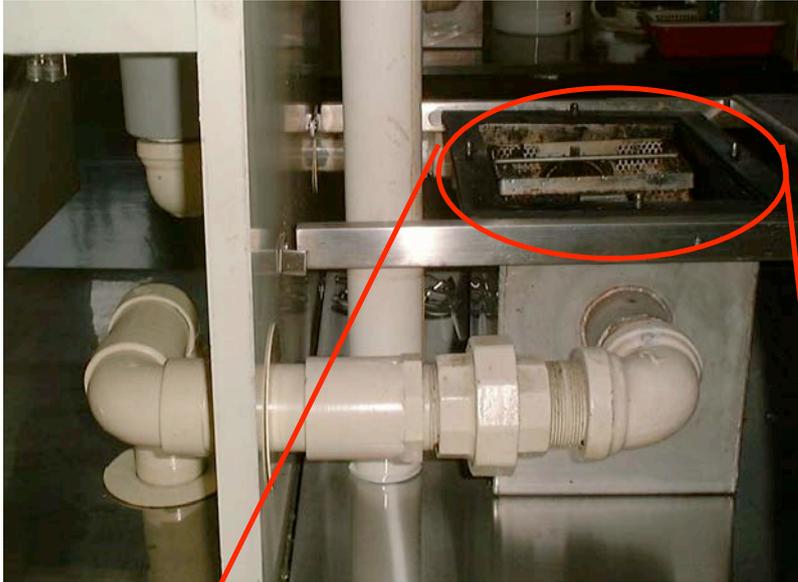
Model installed: Vulcan 5000 (water treatment capacity: 5 m<sup>3</sup>/hour)



## **Verification of the effectiveness:**

The status of the grease trap upon installation of the Vulcan was confirmed, and the changes of the statuses were observed for approximately five months from the start of the operation. In almost all cases, the effectiveness can be confirmed through the observation for about three months.

On June 13 (before installation of the Vulcan)  
(\* The Vulcan was installed on June 17.



Grease trap under  
the countertop



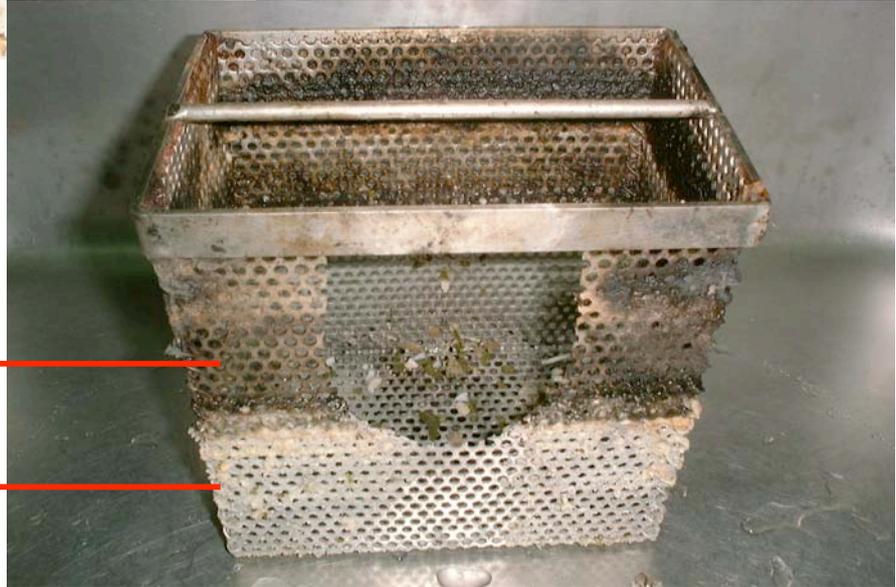
Usual level of the standing water: Water flows up to the level indicated by ①.

On September 12 (three months after the installation of the Vulcan)



The status of the grease trap three months after the installation:  
Compared with the time of installation, the peripheries of the basket drain have gotten dry.

Usual water level upon installation

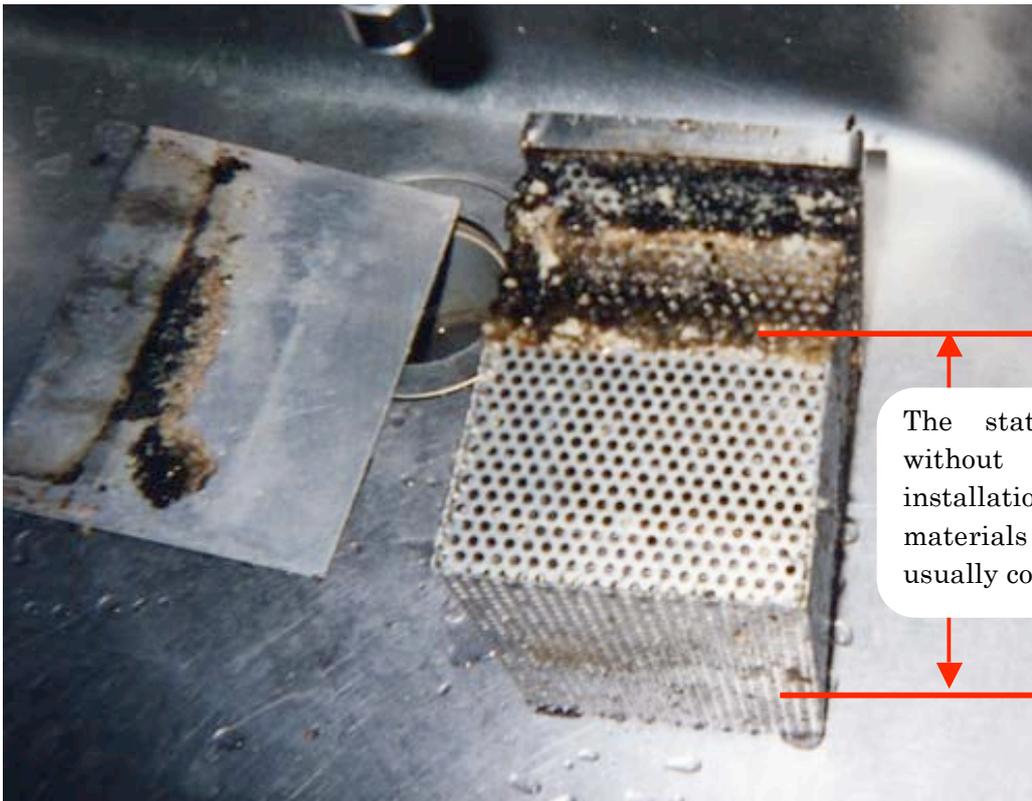


Standing water level has been lowered due to better drainage achieved by removal of the objects adhered on the basket.

The photo below shows the status of the basket after being washed by hosing. The portions usually being contacted with the treatment water are cleaned easily with a water flow from the tap. Native dark color of stainless steel can be recognized after cleaning.



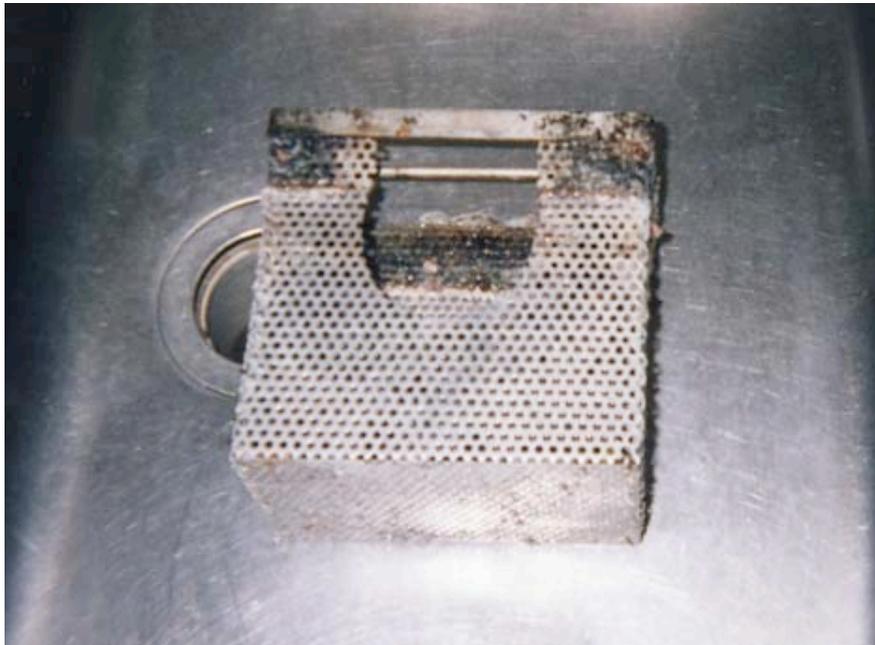
The basket taken out when cleaning the grease trap under the sink on September 20



When the grease trap under the sink was cleaned on September 20, 2006



The status after the cleaning on September 20 was inspected on November 11, 2006. Almost no adhesion of dirt is seen, thus the effect of this treatment water is recognized.



**For proper use of the Vulcan:**

The similar effects have been reported in the cases of drainages in the food factories, restaurants and kitchens.

Many installation cases of the Vulcan proved that the treatment water had substantial cleaning effect even with extremely reduced volume of the conventionally used detergent. There were even some cases where the use of detergent (such as cationic detergent) causes a buildup of a thin film of dirt. Cationic detergents should not be used.

With the portions that do not contact with the treatment water, this effect cannot be expected. Vulcan has no effect of breaking or resolving solids in drainage. Although the Vulcan has no disinfection effect, its prevention of dirt from adhering to the basket and the net contributes to the reduction of mold's food source.