

Oregon Department of Human Services

Office of Environmental Public Health
800 NE Oregon Street #604
Portland, OR 97232-2162

(503) 731-4030 Emergency
(971) 673-0405
(971) 673-0457 FAX
(971) 673-0372 TTY-Nonvoice

TECHNICAL BULLETIN

HEALTH EFFECTS INFORMATION

Prepared by:

ENVIRONMENTAL TOXICOLOGY SECTION

April 1986

**PCBs AND SUBMERSIBLE
PUMPS**

For More Information Contact:

**Environmental Toxicology Section
(971) 673-0440**

**Drinking Water Section
(971) 673-0405**

On 10/31/89, the Oregonian published an article regarding the discovery of PCB-contaminated oil in a private well in the Grants Pass area. PCBs (polychlorinated biphenyls) have caused cancer in laboratory animals and have been linked to a number of adverse health effects in humans. PCBs do not break down naturally in the environment. The United States Environmental Protection Agency (US EPA) has set a maximum contaminant level (MCL) of .0005 mg/L for PCBs in public water supplies.

PCBs were used as insulators in the capacitors of some 2-wire submersible pumps manufactured before 1980. For PCBs to enter the well water, the capacitor must first leak PCBs into the cooling oil of the pumps, and then the pump seal must fail, releasing PCB-contaminated oil into the well water. Three-wire submersible pumps are not affected, nor are any pumps manufactured after 1980. In addition, most submersible pumps fail as a result of bearing or motor breakdown, with no loss of coolant oil.

Homeowners on private wells need not be concerned unless:

1. Their submersible pump falls into the category described above,
2. An oily taste or odor is present, or
3. An oil scum or film is visible on the water surface.

If these conditions exist, consumers are urged to contact the pump manufacturer or distributor, your County Health Department, or the State Drinking Water Program (971-673-0405) to determine whether or not the particular pump indeed has a PCB-insulated capacitor. If it does, and if signs of contamination are present, then the well water should be tested for PCBs. In Oregon to date, only two or three wells have tested positive for PCBs.

The presence of PCBs in well water indicates complete or imminent pump failure, and the pump should be replaced. It is also possible to partially remove PCBs from water using activated carbon filters, or to decontaminate the well with detergents and cleansers.

Individuals who believe they have received long-term exposure to PCBs should contact their local Health Department or the Oregon Department of Human Services at 731-4010.

The following brand and manufacturer groupings have been compiled and updated from literature searches, pump installers, and manufacturers, and represent the best

descriptions currently available.

Please be aware that the groups are not complete with regard to all manufacturers and brand names. In addition, information has not been confirmed in all cases. The groupings reflect pumps and motors made beginning in 1960.

Units with PCB Capacitors (beginning in 1960)

Dempster Industries: Two-wire units through 1967.

Fairbanks Morse: Two-wire units manufactured from 1964 through January 1979. Coded alphanumeric data code found on motor nameplate. These only include the Colonial series 4A, 4C, 4E and 4G and the Chateau series 4AS, 4CS, 4ES and 4GS units with data codes of J_, K_, L_, M_, N_, P_, R_, S_, T_, V_, W_, X_, A_, B_, C_, DA.

Johnston Water System: Two-wire units with date code "79" or less. The date code is the last two digits of a series of numbers containing model number, serial number and date.

F.E. Myers: Model SF Series, two-wire units, 1964 through 1970. 1/3 - 1 hp. Model SG Series, two-wire units, 1970 through 1976, 1/3 - 1 hp. Date on motor casing and tag as month and year, e.g. 1279=December 1979.

Montgomery Ward: Two-wire units with date code 62 through 72 as found in last two digits of a series of numbers containing model number, serial number and date. Unknown configuration for times prior to 1962 or after 1972.

Peabody Barnes: Two-wire units with date code 79 or less. The date code is the last two digits of a series of numbers containing model number, serial number and date.

Reda: Two-wire units with date code 79 or less. Date code found on nameplate as month and year, e.g. 1279=December 1979.

Red Jacket: Two-wire units manufactured from November 1968 through 1978. Coded alphanumeric date code found on motor stator, capacitor housing and the pump. Codes include MC, NC, _D, _E, _F, _G, _H, _K, _I, _M, _N, and _78.

Sta-Rite: Two-wire units with date code less than 79 as found on nametag.

Again, it is important to keep in mind that although the list is the best available, we cannot guarantee its accuracy. Well owners should be advised accordingly.

Also, bear in mind that the groupings represent conditions beginning in 1960. We know that some older units previously contained PCB capacitors although from 1960 onward, they did not.