



Delaware County Regional Sewer District Standard Operating Procedure

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Bloodborne Pathogen Exposure Control Plan	June 25 th 2014	NEW	1	8

1.0 Purpose

- 1.1 In order to comply with the OSHA Bloodborne Pathogen Standard, 29 CFR 1910.1030, the following exposure control plan has been developed for the Delaware County Regional Sewer District (DCRSD) employees.

2.0 Background

- 2.1 Despite extensive efforts, no authoritative consensus opinion has been obtained as to the applicability of this rule to raw sewage. Raw sewage, by law, is an allowed transport mechanism of human waste to a wastewater treatment facility for processing of blood and other potentially infectious materials (OPIM). Because of this gray area, this plan uses the basic rule for practical implementation that will limit exposure to raw sewage products. The plan does not consider raw sewage as OPIM, but does realize the implications of the disposal law, the possibility that raw sewage may contain hepatitis contaminated material, and the resultant practicality of limiting exposure to untreated sewage products.

3.0 Definitions

- 3.1 **Bloodborne Pathogens** are infectious microorganisms in human blood that can cause disease in humans. These pathogens include, but are not limited to, hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency virus (HIV).
- 3.2 **Contaminated** is the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.
- 3.3 **Contaminated Laundry** is the laundry which has been soiled with blood or other potentially infectious materials.
- 3.4 **Decontamination** is the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or items is rendered safe for handling, use, or disposal.
- 3.5 **Exposure Control Plan** is a written action plan that specifies precautionary measures taken to manage and minimize potential exposure to bloodborne pathogens in the workplace.
- 3.6 **Hand washing Facilities** is a facility providing an adequate supply of running potable water, soap, hand sanitizer and single-use towels or air-drying machines.

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3.7 **Hepatitis** is an inflammation of the liver. It may be caused by drugs, alcohol use, or certain medical conditions. But in most cases, it causes a virus that infects the liver. This is known as viral hepatitis and the most common forms are hepatitis A, B and C.

3.8 **Hepatitis B virus (HBV)** is caused by contact with an infected person's blood, or other body fluid. The HBV is considered a bloodborne pathogen because its path of transmission is through contact of blood or body fluid of an infected person. Most people who have the HBV develop an acute infection, and then recover. In some cases the infection can elevate to a chronic condition. You cannot get HBV from casual contact such as hugging, kissing, sneezing, coughing or sharing food.

If infected with HBV, the symptoms may include:

- Fatigue;
- Mild fever;
- Headache;
- Loss of appetite;
- Nausea;
- Stomach abnormalities (Diarrhea and constipation);
- Muscle aches;
- Skin rash;
- Jaundice(causing yellow eyes and skin, dark urine);

3.9 **Hepatitis C virus (HCV)** is transmitted the same way as hepatitis B, through contact with an infected person's blood or body fluid (see above). Like hepatitis B, hepatitis C causes swelling of the liver and can cause liver damage that can lead to cancer. Most people who have the HCV develop a chronic infection. You cannot get HCV from casual contact such as hugging, kissing, sneezing, coughing or sharing food.

If infected with HCV, the symptoms may include:

- Fatigue;
- Joint pain;
- Stomach pain;
- Itchy skin;
- Muscle aches;
- Dark urine;
- Jaundice(causing yellow eyes and skin, dark urine);

3.10 **Human Immunodeficiency Virus (HIV)** is the virus that causes Acquired Immune Deficiency Syndrome (AIDS). This virus is transmitted from one person to another through blood to blood and sexual contact. People with HIV have what is called HIV infection. Without appropriate therapy, most people will develop AIDS as a result.

After the virus enters the body, the virus kills or damages cells of the body's immune system. The body tries to keep up by making new cells or trying to contain the virus, but eventually the HIV wins out and progressively destroys the body's ability to fight infections and certain cancers.

The most common symptoms are similar to a flu-like illness within several days to weeks after exposure to virus. The progression of disease varies widely among individuals. HIV infection may last from a few months to more than 10 years. Early HIV symptoms include the following, but are not limited to:

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- Fever;
- Headache;
- Fatigue
- Rash;
- Sore throat;
- Enlarged lymph nodes in neck;
- Open sores and ulcers in mouth;

3.11 **Other Potential Infectious Material (OPIM's)** is the following human body fluids; male-female bodily secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is viably contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids. The following human body fluids are not expected to be infectious sources of blood borne pathogens unless they are visibly contaminated with blood; urine, feces, vomit, tears, sweat, sputum and nasal secretions.

3.12 **Universal Precaution** is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HBV, HCV, HIV and other blood borne pathogens.

2.0 Wastewater Treatment Process Materials

- 2.1 Treatment Process materials, which have not undergone secondary or biological stabilization, have the potential for carrying hepatitis and other pathogenic materials. Exposure to these process materials, including raw sewage, primary effluents, unstabilized sludge, scum, grit and screenings, pose potential health risks.
- 2.2 Treatment Process materials that have undergone biological stabilization are considered treated for bloodborne pathogens and therefore are considered to pose no potential health risk associated with bloodborne pathogens. However, secondary or biologically stabilized materials should still be treated with caution by using safe health and hygiene practices.

3.0 Exposure Determination

3.1 The Delaware County Regional Sewer District possesses secondary and tertiary wastewater treatment facilities. Blood and other potentially infectious material may be disposed of by mortuaries, hospitals, clinics, dog kennels, etc. directly into the wastewater stream. With this in mind it has been determined that the following job classifications have the potential for occupational exposure to blood or OPIM:

- Operations Superintendent
- Assistant Operations Superintendent
- Operations Manager IV
- Operations Manager
- Collection System Manager
- Maintenance Manager
- Construction Coordinator
- Building and Grounds Technician
- Chemist
- Custodian

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- Collection System Technician
- Electronic Maintenance Technician 1
- Electronic Maintenance Technician 2
- Inspector
- Lead Collection System Technician
- Lead Maintenance Technician
- Lead Operator
- Maintenance Technician 1
- Maintenance Technician 2
- Package Plant Operator
- Regional Wastewater Facility Operator
- Truck Driver

4.0 Compliance Methods

- 4.1 Universal precautions will be observed in the DCRSD to prevent contact with blood or OPIM. All blood, OPIM, sewage or related waste products will be considered infectious, whatever the perceived status of the source.
- 4.2 Engineering and work practice controls will be used to eliminate or minimize exposure to employees at this facility. Where occupational exposure remains after implementation of these controls, personal protective equipment shall also be used. Throughout the DCRSD the following engineering controls will be used:
- Sinks with running water will be placed in those buildings where potable water is available.
 - Antibacterial soap and dispenser units will be placed near every sink within a facility.
 - Paper towels and towel dispensers will be placed near every sink within a facility. Trash cans with bag liners will be placed near every sink in a facility.
 - Dispensers with prepackaged antiseptic or water-less antiseptic hand cleaner and paper towels will be located in those areas where exposure potential exists but, potable water is not available or a sink is not practical.
 - Glove dispensers will be located near those jobs where exposure potential exists.
- 4.3 The above controls will be examined, cleaned, stocked and maintained on a regular schedule. The Joint Health and Safety Committee will review the effectiveness and use of these control measures by the amount of inventory being used and by the feedback of the employees using these controls. Hand washing facilities are available in the following buildings:
- ACWRF Administration Building
 - ACWRF Maintenance/Storage Building
 - Central Maintenance Facility
 - LSWRF Administration Building
 - North Star Re-use Facility
 - OECC Administration Building
 - OECC Influent Raw Building
 - OECC Centrifuge Building
 - Scioto Reserve Re-use Facility
 - Tartan Fields Re-use Facility

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- 4.4 In the areas where exposure potential exists but running water is not practical, the facility will provide either water-less antiseptic hand cleaner and paper towels, or prepackaged antiseptic wipes. When these alternatives are used, hands shall be washed with soap and running water when feasible. These items will be replenished on an as needed basis.
- 4.5 All vehicles used for Collections, Maintenance, or Package Plants and Regional Facility Operations will be equipped with water-less antiseptic hand cleaner.
- 4.6 Gloves are another alternative for protection. Supplies of heavy-duty waterproof gloves will be kept on hand and issued to employees as needed or kept near particular jobs where exposure potential exists. All vehicles used for Collections, Maintenance, Package Plants and Regional Facility Operations will be equipped with disposable gloves. Water tight latex or rubber gloves are to be used whenever an employee comes in contact with raw wastewater, grit, scum, screenings or plant side streams that may have a high potential for pathogenic exposure. Gloves should be worn when doing certain maintenance tasks when exposure to sewage or related waste products is inevitable. After removal of personal protective gloves, employees shall wash hands and other potentially contaminated skin area immediately with soap and water. If employees incur exposure to their skin or mucous membranes, those areas shall be washed or flushed with soap and water, as soon as possible, following contact.

5.0 Needles, Containers for Reusable Sharps

- 5.1 Although needles and sharps are frequently found in the wastewater system, they are not commonly used. Sharp containers will be placed at the first aid kit area. The container can use for disposal of razor blades, personal medical syringes and other sharps that may be a hazard to the employee.

6.0 Work Restrictions

- 6.1 The following apply:
- In work areas where there is a reasonable likelihood of exposure to sewage or related waste products, employees are **not** to eat, drink, apply cosmetics or lip balm, smoke or handle contact lenses. Food and beverages are **not** to be kept in refrigerators, freezers, shelves, cabinets, or on counter tops or bench tops where sewage or related waste products are present.
 - Mouth pipetting/suction of sewage or related waste products is prohibited.

7.0 Samples

- 7.1 Sewage samples will be placed in a container that prevents leakage during the collection, handling, process storage, and transport of the samples. All samples collected at a facility are to be placed in the durable plastic containers provided by the facility. All plant samples must be in properly labeled containers for identification. Any sample other than normal plant samples must have a Chain of Custody record (COC) filled out by the person collecting the sample. Samples collected which will be picked up by a contract laboratory courier will be collected and handled using the same procedures.

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8.0 Personal Protective Equipment

8.1 All personal protective equipment used in the DCRSD will be provided without cost to the employees. Personal protective equipment will be chosen based on the anticipated exposure to blood, OPIM, sewage and related waste products. The following list covers the anticipated personal protective equipment needed that should, under normal condition of use, protects the employee from exposure to blood, OPIM, sewage or related waste products:

- **Gloves** are to be worn when working in areas where it is anticipated that employees will have hand contact with blood, OPIM, sewage and related waste products. Such contact would include, taking samples, testing samples, cleaning the buildings, cleaning facility restrooms, cleaning out a clogged pump and other maintenance activities that would involve contact with sewage or related wastes. This would also include cleaning, jetting and vacuuming activities in the collection system. The DCRSD Manager will provide both heavy-duty gloves and watertight disposable gloves.
- **Lab Coats and/or Aprons** should be worn during all process testing.
- **Waterproof and Protective Gear** such as over boots, Tyvek suits and other equipment will be provided and shall be worn as needed
- **Protective Eye Wear** will be worn in those areas where splashes of sewage or wastes could enter the eye. This protection includes face shields, goggles and safety glasses.
- **Uniforms** are provided and are to be worn at all times as personal protective equipment. Coveralls/Carhartts should be laundered as soon as possible after contamination occurs. Uniforms are to be supplied and laundered by an outside company. Contaminated laundry shall be placed in a bio-hazard labeled bag. Employees shall not wear potentially contaminated uniforms home.

8.2 All items that are not contaminated may be stored in the employees' locker area. The personal protective equipment is to be worn in conjunction with the above tasks. The employee assumes the responsibility of wearing the appropriate equipment provided for any task where there is potential of contact with blood or OPIM and sewage or related waste products.

9.0 Facility Cleaning

9.1 Cleaning of the facilities to minimize contamination are absolutely necessary. All employees will follow the cleaning schedule as set by the DCRSD Management and posted throughout the facility. Commercially available cleaning products will be used in the cleaning of the Administration Bldg. and facility bathrooms and sinks. Utilization of non-potable water sources to clean facilities and grounds shall be limited to process floors, basins and equipment.

10.0 Regulated Waste Disposal

10.1 All trash or used disposable waste products such as disposable latex gloves, paper hand towels and towelettes are to be placed in lined trash containers. Wash down of blood, OPIM, sewage and related waste products to the sanitary sewer will be performed as soon as possible after spills of such material.

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11.0 Laundry Procedures

- 11.1 Uniforms that are contaminated with blood, OPIM, sewage or related waste products will be handled as little as possible. Uniforms and laboratory coats are provided as personal protective equipment and if contaminated should be removed and placed in laundry containers that are located in the locker rooms. When it is necessary to handle laundry for any reason disposable latex gloves should be used to minimize exposure potential. A commercial laundry as designated by the DCRSD will clean the rented uniforms. If the contaminated uniform is unable to be cleaned, it should be disposed of appropriately.

12.0 Hepatitis B Vaccine

- 12.1 All employees who have been identified as having exposure to blood, OPIM, sewage and related waste products will be offered the Hepatitis B vaccine at no cost to the employee. The vaccine will be offered within ten (10) working days of their initial assignment to work involving the potential for occupational exposure to blood, OPIM, sewage or related waste products unless, the employee has previously had the vaccine or wishes to submit to antibody testing which shows the employee to have sufficient immunity.
- 12.2 Employees who decline the Hepatitis B vaccine will sign a waiver that uses the language provided in Appendix A of the OSHA standard. Employees that agree to receive the vaccine will also sign a consent form giving permission to do so.
- 12.3 Employees that initially decline the vaccine but who later wish to be vaccinated will be provided the vaccine at no cost. The DCRSD Manager will maintain the responsibility of ensuring that the vaccine is offered in a timely manner. The Delaware County Human Resources Dept. will assume the responsibility of coordinating the vaccination and assuring that the waivers are signed.

13.0 Post Exposure Evaluation Follow up

- 13.1 Exposure to sewage and related waste products is unavoidable in the DCRSD. Employees will be required to follow the Delaware County's standard incident report and investigation procedures when exposure is such that it poses a perceived health risk. After exposure to blood or OPIM, such as rendering first aid due to injury, the employee will be given the appropriate counseling concerning precautions to take after the exposure incident. The employee will be given information on what potential illnesses to watch for and report any related experiences to DCRSD Management.
- 13.2 If possible, the identification of the source individual and, if possible, the status of the source individual. The blood of the source individual will be tested (after consent is obtained) for HIV/HBV infectivity.
- 13.3 Results of testing of the source individual will be made available to the exposed employee with the exposed employee informed about the applicable laws and regulations concerning disclosure of the identity and infectivity of the source individual.
- 13.4 The employee will be offered the option of having their blood collected for testing of the employee's HIV/HBV serological status. The blood sample will be preserved for up to 90 days to allow the employee to decide if the blood should be tested for HIV serological status. However, if the employee decides prior to that time that testing will or will not be conducted then the appropriate action can be taken and the blood sample discarded.

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- 13.5 An accurate medical record for each employee with occupational exposure will be maintained. This record will include:
- The name and social security number of the employee;
 - A copy of the employee's HBV vaccine status including the dates of all HBV vaccinations;
 - A copy of all results of examinations;
 - The employer's copy of the health care professional's written opinion;
 - A copy of the information provided to the health care professional.
- 13.6 All employees' medical records shall be kept confidential.
- 13.7 Written opinions will be obtained from the Delaware County's designated health care professional under the following circumstance:
- Whenever the employee is sent to a health care professional following an exposure incident.
- 13.8 Health care professionals shall limit their opinions to:
- Whether the hepatitis B vaccine is indicated and if the employee has received the vaccine, or for evaluation following an incident.
 - The employee has been informed of the results of the evaluation.
 - The employee has been told about any medical conditions resulting from exposure to blood or OPIM. The written opinion to the employer is not to reference any personal medical information.

14.0 Training

- 14.1 Training for all employees will be conducted prior to initial assignment to tasks where occupational exposure may occur and an annual refresher for all employees. Training will include an explanation of the following:
- The OSHA standard for Bloodborne Pathogens
 - Epidemiology and Systematology of bloodborne diseases
 - Modes of transmission of bloodborne diseases
 - Review of the facilities Exposure Control Plan
 - Procedures which might cause exposure to blood or OPIM in the DCRSD
 - Personal protective equipment available in the DCRSD
 - Who to contact for post exposure evaluation and follow-up
 - The DCRSD Hepatitis B vaccine program



Delaware County Hepatitis B Vaccination Form

Hepatitis B Vaccination Protection

Hepatitis B virus (HBV) is a pathogenic microorganism that can cause potentially life threatening disease in humans. HBV infection is transmitted through exposure to blood and other potentially infectious materials (OPIM), as defined in the OSHA Bloodborne Pathogens standard, 29 CFR 1910.1030. The standard applies to all employees who have occupational exposure to blood or other potentially infectious materials (OPIM).

The CDC estimates that 5.6 million workers in the health care industry and related occupations are at risk of occupational exposure to bloodborne pathogens, including human immunodeficiency virus (HIV), hepatitis B virus (HBV), hepatitis C virus (HCV), and others. All occupational exposure to blood or other potentially infectious materials (OPIM) place workers at risk for infection with bloodborne pathogens. OSHA defines blood to mean human blood, human blood components, and products made from human blood. Other potentially infectious materials (OPIM) means: (1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

The Hepatitis B vaccine is usually administered as a 3-dose series on a 0-, 1-, 6-month schedule to achieve immunity. The second dose should be given at least one month after the first dose; the third dose should be given six months after the first dose.

Option A – Accept the Vaccination

REQUEST TO RECEIVE HEPATITIS B VACCINE

I have been informed of the biological hazards that exist in my workplace, and I understand the risks of exposure to blood or other potentially infectious materials involved with my job. I understand that I may be at risk of acquiring hepatitis B virus (HBV) infection. I acknowledge that I have been provided information on the hepatitis B vaccine, including information on its effectiveness, safety, method of administration and the benefits of being vaccinated. I have been given the opportunity to be vaccinated with hepatitis B vaccine at no charge to myself. **I request to receive the vaccination series.**

Employee's Name (printed)

Employee's signature

Employee's Position

Date (mm/dd/yyyy)

Employee's Email (printed)

Employee's Contact Phone Number

Option B – Already Immunized

STATEMENT OF CURRENT IMMUNIZATION

I attest that I have already been immunized against hepatitis B virus (HBV) infection.

Employee's Name (printed)

Employee's signature

Employee's Position

Date (mm/dd/yyyy)

Option C – Decline to be Immunized

HEPATITIS B VACCINE – DECLINATION STATEMENT

I understand that, due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, **I decline hepatitis B vaccine at this time.** I understand that, by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

All of my questions regarding the risk of acquiring hepatitis B virus, and the hepatitis B virus vaccination process, have been answered to my satisfaction.

Employee's Name (printed)

Employee's signature

Employee's Position

Date (mm/dd/yyyy)