

<b>CP4-ER-0009</b> <b>FRev. 2A</b>	<b>TITLE:</b> Backwash of the Sand Filter in the C-612 Northwest Plume Groundwater System	Page 1 of 6
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<b>REVISION/CHANGE LOG</b>			
Revision/Change Letter	Description of Changes	Pages Affected	Date of Revision/Change
FR0	Initial Bluesheeting	All	10/20/17
FR1	Non-Intent Revision to Incorporate Bluesheeting Changes and Update to Current Form	All	11/15/17
FR2	Added last 2 bullet points in Section 6.2.1 and added Section 6.2.7 and general editorial changes.	All	3/7/19
FR2A	Periodic Review has been completed with no changes identified in procedure technical content. Nonintent change to correct SMA, SME, approver and dates has been incorporated per CP3-NS-2001. Date for review cycle has been reset.	All	9/13/2021

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## 1.0 PURPOSE AND SCOPE

### 1.1 Purpose

The objective of this procedure is to define the required equipment and action steps necessary to perform a backwash of the sand filters at the Northwest Plume Groundwater System (NWPGS), Building C-612.

### 1.2 Scope

This procedure will be performed in response to a request by the Northwest/Northeast (NW/NE) Pump and Treat Project Manager (or designee) to perform a backwash of the sand filters in C-612.

## 2.0 REFERENCES

### 2.1 Use References

- CP2-ER-0067, *Health and Safety Plan for the Paducah Plumes Operations, Paducah, Kentucky*
- CP3-OP-0024, *Forms Control*
- CP3-OP-0207, *Use of Procedures*
- CP3-OP-0208, *Required Reading/Crew Briefing*
- CP3-SM-1101, *Work Package Development*
- CP4-ER-0011, *Solids Dewatering in the C-612 Northwest Plume Groundwater System*
- CP4-ER-0017, *Northwest/Northeast Plume Daily Operational Data Collection and Maintenance*
- CP3-TR-0102, *Conduct of Training*

#### Source References

- DOE/OR/07-1253, *Operations and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action Plan at PGDP Paducah, Kentucky.*
- Job Hazard Analysis (JHA)-10844, *Maintenance, Operations, and Testing for the Northwest and Northeast Plume and Water Treatment Operations*

## 3.0 COMMITMENTS

None

## 4.0 PRECAUTIONS AND LIMITATIONS

None

## 5.0 PREREQUISITES

**5.1** Prior to performing any action steps identified in this procedure for the first time, users shall have reviewed this document based upon its level of use in accordance with CP3-OP-0207, *Use of Procedures*.

**5.2** Prior to daily use, verify that the procedure is current.

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- 5.3 Prior to performing any action steps identified in this procedure, the performer shall have completed any required applicable training as per their Training Position Description (TPD).
- 5.4 Prior to using this procedure as a work control document, follow the requirements as defined in CP3-SM-1101, *Work Package Development* for the activities being performed.
- 5.5 All forms completed in the performance of this procedure shall be completed in compliance with CP3-OP-0024, *Forms Control*.
- 5.6 Obtain the approval of the NE/NW Pump and Treat Project Manager (or designee) before executing this procedure.
- 5.7 Technicians with performance responsibilities are trained according to thier Position Assignmemnt Form (PAF) for the position in accordance with CP3-TR-0102, *Conduct of Training* and CP3-OP-0208, *Required Reading/Crew Briefing*.

## 6.0 INSTRUCTIONS

### 6.1 Preparation Activities

**NOTE:**

Action steps are to be performed sequentially unless otherwise noted.

#### Technician

- 6.1.1 Don personal protective clothing as specified in the CP2-ER-0067, *Health and Safety Plan for the Paducah Plumes Operations, Paducah, Kentucky*.
- 6.1.2 Do **NOT** proceed with the backwash of the sand filters if one of the following situations exist:
  - The ion exchange columns are undergoing a backwash cycle
  - The backwash/slucie tank (F-002) level is less than 80% as indicated on the K-100 panel level indicator (LI-F002)
  - The settling tank (F-008) level is more than 5% as indicated on the K-100 panel level indicator (LI-F008)
- 6.1.3 Obtain direction from the NW/NE Pump and Treat Project Manager (or designee) to determine which sand filter(s) require backwash and, if applicable, in what order they should be backwashed

### 6.2 Backwash of Sand Filters

#### Technician

- 6.2.1 Open (or confirm opened) the following valves:
  - Backwash/slucie pump suction valve HV-057
  - Backwash/slucie pump discharge pressure gauge valve HV-058
  - Backwash/slucie pump recycle valve HV-059 (½ open)

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- Backwash/slucice pump discharge valve HV-060
- Sand filter skid air supply valve HV-032
- Sand filter skid backwash influent valve HV-152
- Sand filter vessel G-002 backwash effluent valve GHV-020A
- Sand filter vessel G-001 backwash effluent valve GHV-021A

- 6.2.2** Press the “ON” button for the backwash/slucice pump on the K-100 panel (HS-J008).
- 6.2.3** Confirm that the sand filter local status switches for G-001 and G-002 are in the “ON” position.
- 6.2.4** Set the backwash duration time on the sand filter skid local control panel to 5 minutes.
- 6.2.5** Set the surface wash duration on the local control panel to 0 minutes.
- 6.2.6** Push the local backwash start button for the appropriate sand filter vessel.
- 6.2.7** After backwash of the desired sand filter vessel(s) has been completed, close the following valves:
- Sand filter vessel G-001 backwash effluent valve GHV-021A
  - Sand filter vessel G-002 backwash effluent valve GHV-020A

## **7.0 ACCEPTANCE CRITERIA**

None

## **8.0 POST PERFORMANCE WORK ACTIVITIES**

### **8.1 Post Backwash of Sand Filters**

#### **Technician**

- 8.1.1** Record all operational activities according to CP4-ER-0017, *Northwest/Northeast Plume Daily Operational Data Collection and Maintenance* on CP4-ER-0017-F02, *Daily Northwest Northeast Plume Operational Data Collection and Maintenance Form*.
- 8.1.2** Perform solids dewatering as needed and/or as directed by the NW/NE Pump and Treat Project Manager (or designee) according to CP4-ER-0011, *Solids Dewatering in the C-612 Northwest Plume Groundwater System*.

## **9.0 RECORDS**

None

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## **Appendix A – Acronyms/Definitions**

### **ACRONYMS**

**NW/NE** – Northwest/Northeast

**NWPGS** – Northwest Plume Groundwater System

**PAF** – Position Assignment Form

**TPD** – Training Position Description

### **DEFINITIONS**

**Technician** - The person performing the technical aspects of this procedure. The person performing this work could have job functions including but not limited to the Frontline Supervisor or the Operator/Maintenance Mechanic.