



**San José-
Santa Clara
Regional
Wastewater
Facility**

JOB

COMPETENCY

REQUIREMENTS

FOR

FILTRATION

JCR-PO107 / SEPTEMBER 2014

NAME/WORKGROUP

Author: Vaughn Henrie, CTS
Owner: Facility Operations Manager
Reviewers: Facility Operations Manager, WW Superintendent I/II, WW Ops Foreperson

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

This page intentionally left blank

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

FILTRATION

NAME _____

POSITION _____

This page is to be used as a record of satisfactory completion of designated sections of the Job Competency Requirements (JCR). Only designated individuals may signify completion of applicable sections either by written or oral examination, or by observation of performance. The examination or checkout need not cover every item; however, a sufficient number should be covered to demonstrate the examinee's knowledge, skill and abilities. It is important that qualifiers sign off on a trainee's proficiency only after the proficiency has been adequately demonstrated.

This qualification section is to be kept in the individual's training jacket.

The employee has completed all JCR requirements for this system. Recommend designation as a qualified Operator in Filtration.

RECOMMENDED _____
Supervisor

DATE _____

APPROVED _____
Manager

DATE _____

TRAINING RECORD ENTRY _____
Training

DATE _____

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

INTRODUCTION

JCR PROGRAM

This Job Competency Requirements (JCR) program is a qualification system for RWF employees where certification of a minimum level of competency is required prior to qualifying to perform specific duties. A JCR is a compilation of the minimum knowledge and skills that an individual must demonstrate in order to qualify to operate equipment or perform other specific routine duties necessary for the safety, security or proper operation of RWF equipment or support systems. The objective of this JCR is to standardize and facilitate these qualifications.

JCR OWNER

Facility Operations is the owner of this JCR and oversees the process of monitoring and updating this document from the standpoint of technical content and relevance within the wastewater community.

QUALIFIER

The JCR Qualifier is designated in writing by the appropriate manager to sign off individual tasks qualifiers. Normally, they will be those having already mastered the skills required to complete this JCR. The names of designated Qualifiers should be made known to all employees of the RWF.

The 300 Task section is used by qualifiers and/or assessors to aid in determining the employee's ability to accomplish competencies. Answer Yes or No for each competency. If answered with a NO, please indicate whether it was one of the following reasons which caused the employee to not accomplish the competency:

- "T" = Training. Information was not successfully transferred from Trainer to Employee. (Classroom, On-The-Job (OJT), Computer Based, etc.)
- "M" = Material. Was the equipment and/or tools inoperative or defective thus affecting the employee's ability to accomplish the task. Was the equipment not to specification? Too old? A new piece of equipment? Was the documentation inadequate or wrong?
- "KSA" = Knowledge, Skill, Ability (KSA). Did the employee not have the requisite KSA to accomplish the task.
- "E" = Environment. Did the training environment affect the employee accomplishment of the task. Environmental factors include: Time constraints and Temperature/Weather.

The following is a sample line item:

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

300.14 Command Pumps and Valves Through the DCU (A B C F)	YES / NO	REASON
Remarks:		
_____ <i>Joe Somebody</i> _____ (Qualifier/Date)		
300.15 Obtain Grab and Composite Samples for Analysis (A B E F)	YES N O	REAS T ON
Remarks: <i>Did not put the correct amount of PAO in the reaction chamber. Once complete with tasks, reviewed proper procedure. Will re-assess in two weeks. Employee was not paying attention during demonstration by instructor on correct process.</i>		
_____ (Qualifier/Date)		

CONTENTS

JCR is divided into three sections. The 100 Section (Fundamentals) contains the fundamental knowledge from technical manuals and other texts necessary to satisfactorily understand the duties required of this equipment or system. The 200 Section (Systems) is designed to acquaint you with the systems you will be required to operate. The 300 Section (TASKS) will require you to satisfactorily perform a series of tasks in order to achieve final JCR qualification. References used during the writing of this JCR were the latest available to the developers. However, the most current references available should be used when qualifying with this standard.

EMPLOYEE

Your Manager, Superintendent, or Foreperson will tell you which tasks you are to complete and in what order. You may be required to complete another JCR, attend an off-site training/educational course, or meet the other requirements specified in this JCR. If you have any questions or are in need of assistance, contact a Superintendent or Foreperson. Good luck!

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

Prerequisites

For optimum training effectiveness, the following items should be completed prior to starting your assigned tasks but must be completed prior to final qualification.

LICENSES:

Wastewater Treatment Plant Operator Grade I

Completed _____
(QUALIFIER AND DATE)

COURSES:

Filtration PO107

Completed _____
(QUALIFIER AND DATE)

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

100 FILTRATION (FUNDAMENTALS)

100.1 Explain Basic Multimedia Gravity Filtration Theory and Operation

(Qualifier/Date)

100.2 Explain basic pump theory and operation

(Qualifier/Date)

100.3 Explain basic valve theory and operation

(Qualifier/Date)

100.4 Explain Grab Sample

(Qualifier/Date)

100.5 Explain Composite Sample

(Qualifier/Date)

100.6 Define Log Book Entry Guidelines

(Qualifier/Date)

100.7 Explain the Properties of Alum (Aluminum Sulfate, Aqueous Solution) and its use in Filtration

(Qualifier/Date)

100.8 Explain the Properties of Sodium Hydroxide and its use in Filtration

(Qualifier/Date)

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

200 FILTRATION (SYSTEMS)

QUESTIONS

SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to the actual equipment, identify the following system components and component parts and discuss the designated items for each:

- A. Equipment Type and ID?
- B. Where is it located?
- C. How does it operate?
- D. What maintenance is done by operators to ensure proper operation?
- E. What is its capacity?
- F. What are the probable indications if this component fails?
- G. Piping/Equipment before and after?
- H. Normal operating parameter status (ON/OFF/Flow/Amp/Level, etc.)

200.1 Emergency Eyewash and Shower Stations

A B C D G

(Qualifier/Date)

200.2 Fire Extinguisher

A B C D E F H

(Qualifier/Date)

200.3 Filter Influent Pump Station (FIPS)

A B C D E F G H

(Qualifier/Date)

200.4 Distributed Control System (DCS)

A B C D F H

(Qualifier/Date)

200.5 Tertiary Gravity Filtration

A B C D E F G H

(Qualifier/Date)

200.6 Sluice Gate

A B C D F G H

(Qualifier/Date)

200.7 Water Champs

A B C D E F G H

(Qualifier/Date)

200.8 Sump Pump

A B C D E F G H

(Qualifier/Date)

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

200 FILTRATION (SYSTEMS)

QUESTIONS

200.9 Filter Backwash Pumps

A B C D E F G H

(Qualifier/Date)

200.10 Sample Pumps

A B C D E F G H

(Qualifier/Date)

200.11 Backwash Equalization Basin

A B C D E F G H

(Qualifier/Date)

200.12 Flocculation Basins and Primary Clarifiers #7 & #8

A B C D E F G H

(Qualifier/Date)

200.13 Treated Backwash Return Wet Well

A B C D E F G H

(Qualifier/Date)

200.14 Filter Alum System

A B C D E F G H

(Qualifier/Date)

200.15 Sodium Hydroxide System

A B C D E F G H

(Qualifier/Date)

200.16 Turbidity Meters

A B C D E F G H

(Qualifier/Date)

200.17 Head Loss Meters

A B C D E F G H

(Qualifier/Date)

200.18 MSA System and Self Contained Breathing Apparatus (SCBA)

A B C D E F G H

(Qualifier/Date)

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

300 FILTRATION (TASKS)	YES / NO	REASON
<u>TASKS</u> For the tasks listed below: A. What are the steps of this procedure? B. What are the reasons for each step? C. What control/coordination is required? D. What means of communications are used? E. What safety precautions must be observed? F. Satisfactorily perform this task.		
300.1 Conduct Housekeeping (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.2 Inspect Eye Wash/Safety Shower Station (A B C D E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.3 Inspect Fire Extinguisher (A E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

300.4 Conduct Filtration Area Safety Inspection (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.5 Inspect SCBA and MSA Alarm Panel (A B C E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.6 Inspect Alum Storage Tanks (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.7 Transfer Alum from the Storage Tanks to the Alum Day Tanks (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

300.8 Inspect Filter Building A&B Pipe Galleries (A B F)	YES / NO	REASON
Remarks:		
(Qualifier/Date)		
300.9 Inspect Turbidity Meters (A B E F)		
Remarks:		
(Qualifier/Date)		
300.10 Inspect Head Loss Meters (A B E F)	YES / NO	REASON
Remarks:		
(Qualifier/Date)		
300.11 Inspect Sluice Gate Valves (A B C D E F)	YES / NO	REASON
Remarks:		
(Qualifier/Date)		

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

300.12 Exercise Filtration Area Valves (A B C D E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.13 Monitor DCU Screens(A B F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.14 Inspect 24 Hour Composite Samplers & Meters in Filter Service Wing Sampler Room (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.15 Command Pumps and Valves Through the DCU (A B C F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

300.16 Obtain Grab and Composite Samples for Analysis (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.17 Inspect Filter Backwash Pumps (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.18 Inspect Filter Surface Wash Pumps (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.19 Inspect Dissolved Oxygen (D.O.) Probe (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

300.20 Inspect pH Probe (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.21 Inspect Filter Effluent Modulating Valves (A B F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.22 Inspect Air Compressors/HVAC & MCC Breaker Room (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.23 Inspect Alum Day Tank Room (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

300.24 Take a Filter Out of Service (A B C D E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.25 Place a Filter in Service (A B C D E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.26 Backwash a Filter in Auto Mode (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.27 Inspect Waste Backwash Equalization Basin (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

300.28 Inspect Flocculation and Sedimentation Basins (A B C D E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.29 Inspect Waste Backwash Return Wet Well (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.30 Inspect Gland Water (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		
300.31 Inspect Filter Surface Wash System (A B E F)	YES / NO	REASON
Remarks:		
_____ (Qualifier/Date)		

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

300.32 Respond to a Filtration Power Outage (A F)	YES / NO	REASON
Remarks:		
(Qualifier/Date)		

Effective date: September 2014	Filtration	JCR-PO107
-----------------------------------	-------------------	-----------

302 FILTRATION

DEMONSTRATION OF KNOWLEDGE, SKILL AND ABILITY

302.1 Carry out Filtration tasks three times under qualified supervision

(Qualifier/Date)

(Qualifier/Date)

(Qualifier/Date)

302.2 Pass a written examination

(Qualifier/Date)

302.3 Pass an oral examination

(Qualifier/Date)