



CITY OF KEIZER | Public Works Department

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December 30, 2019

David Palais
WPCF Permit Coordinator
Oregon Department of Environmental Quality
700 NE Multnomah St., Suite 600
Portland, OR 97232-4100

Dear Mr. Palais,

The City of Keizer is pleased to submit the WPCF Annual Report for permit year 2018-19. As you review this report please keep in mind that the Environmental & Technical Division had significant staff turnover during the reporting period that affected progress in some areas. Despite this, critical components such as operation and maintenance, illicit discharge response, water quality monitoring, and erosion control programs were executed successfully.

It's also important to note that DEQ issued the NPDES MS4 Phase II General Permit in November 2018; Keizer's permit became effective on March 1, 2019. As a result, staff has been evaluating, planning, and implementing best management practices (BMPs) to meet the new requirements. Because many of those BMPs also satisfy the requirements of the City's WPCF permit, I have included descriptions of how some of the BMPs are being adapted. Details for proposed changes to the Public Education and Public Involvement sections are included in Sections 2 and 3. It's important to note that the changes proposed in this report will not reduce, limit, or eliminate any existing actions or efforts previously approved by DEQ to protect groundwater resources.

As the City continues to modify and develop the Stormwater Management Program Document and subsequent BMPs for the General Permit, our staff will work closely with you to ensure that our efforts meet DEQs expectations and the WPCF Class V Stormwater Permit requirements.

If you have any questions or concerns, I can be reached at the phone number or email address listed below.

Sincerely:

Keare Blaylock
Interim Environmental & Technical Division Manager
503-856-3526
blaylockk@keizer.org

Cc: Bill Lawyer, City of Keizer Public Works Director

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2018-19 WPCF Class V Stormwater Permit Annual Report

Prepared by the Environmental & Technical Division on behalf of the City of Keizer Public Works Department.

WPCF Permit #103068

December 2019

CITY OF KEIZER | Public Works Department

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2018-19 WPCF Class V Stormwater Permit Annual Report Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A handwritten signature in black ink, appearing to read "Bill Lawyer", is written over a horizontal line.

Bill Lawyer
Public Works Director
P.O. Box 21000
Keizer, OR 97307-1000

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Acronyms & Abbreviations

ACWA	Association of Clean Water Agencies
BMPs	Best Management Practices
CCR	Consumer Confidence Report
CFR	Code of Federal Regulations
City	City of Keizer, Oregon
CS	Construction Site Standards
CSPPP	Construction Site Pollution Prevention Plan
CWA	Clean Water Act
DEQ	Oregon Department of Environmental Quality
DLCD	Department of Land Conservation and Development
DSL	Oregon Department of State Lands
DS	Development Standards
DWPA	Drinking Water Protection Areas
EPSC	Erosion Prevention Sediment Control
EPA	Environmental Protection Agency
ESU	Equivalent Service Unit
ESA	Endangered Species Act
FTE	Full Time Equivalent
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
LID	Low Impact Development
MCM	Minimum Control Measure
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
O & M	Operation & Maintenance
ORS	Oregon Revised Statutes
PE	Public Education
Permittee	City of Keizer
PI	Public Involvement and Participation
PY	Permit Year
RR	Record Keeping and Reporting
SDWA	Safe Drinking Water Act
SFR	Single Family Residential
SWAC	Stormwater Advisory Committee
SWMP	Storm Water Management Plan or Program
TMDL	Total Maximum Daily Load
UGB	Urban Growth Boundary
UIC	Underground Injection Control
UICMP	Underground Injection Control Management Plan
USACE	United States Army Corps of Engineers
USGS	United States Geologic Survey
WPCF	Water Pollution Control Facilities (permit)



Section 1 - Introduction

1.1 Background

The federal underground injection control (UIC) program was enacted in 1974, under the Safe Drinking Water Act. According to DEQ, *the UIC program's goal is to protect freshwater aquifers from contamination due to underground injection systems.* The Environmental Protection Agency (EPA) gave DEQ the authority to regulate UICs in Oregon as the agent for EPA in 1984 and again in 1991. DEQ regulates the UIC program under Oregon Administrative Rules Chapter 340, Division 44.

The City of Keizer began formally moving forward with development of a UIC program in 2008-2009 starting with the completion of a comprehensive inventory of UIC devices and their locations within the City. In December 2009, the City applied for a WPCF permit in order to legally operate and manage approximately 86 publicly owned UICs. The City was issued an individual WPCF Permit #103068 on October 24, 2013.

1.2 Annual Report Requirements

In accordance with Schedule B(4) of the Permit, the City of Keizer as the permittee must submit an annual report to DEQ by December 31 of each year starting in 2013. The annual reporting period shall be for the time period of July 1 through June 30. The report must:

1. *Include the results of stormwater monitoring conducted in accordance with the DEQ approved monitoring plan;*
2. *Discuss any Table 1 action level exceedances and actions taken to address the exceedances;*
3. *Describe any actions taken to implement the UICMP, any proposed modifications to the UICMP, and any additional actions taken to manage injection systems to ensure groundwater protection;*
4. *Describe any actions described in the UICMP that you were not able to complete and why;*
5. *Identify any injection systems that you closed, retrofitted, or installed during the year;*
6. *Describe your future known plans to install, modify, convert, or close any underground injection system;*
7. *Identify any changes to the key personnel or areas of responsibility for the permit;*
8. *Identify any newly-discovered underground injection control systems; and*
9. *Provide one hard copy and one electronic copy of the Annual Report*

This document serves as the WPCF Annual Report for year 2018-19 for the City of Keizer.

1.3 Organizational Structure

The City's operational structure is a City Manager / City Council type organization with Department Heads in Finance, Community Development, Human Resources, City Recorder, Police, and Public Works. The

implementation of the WPCF Permit is carried out by the Stormwater Division and the Environmental & Technical Division. These groups are under the management of the Public Works Director and respective Division Managers. The Stormwater Division is responsible for maintaining the system, stormwater facilities, and responding to illicit discharge and spill response complaints. The Environmental & Technical Division is responsible for implementing permits, developing operational plans, management plans, systemwide assessment, monitoring, reporting, and data management. The Environmental & Technical Division incurred significant staff turnover during the 2018-19 reporting period. Keizer expects to recover staff and rebound productivity during the 2019-20 reporting period. In October 2019, Public Works added a new GIS Technician position under the management of the Environmental & Technical Division to support UIC and asset management.

1.4 Responsible Personnel

The personnel responsible for implementing the City’s UIC program and their area of responsibility are identified in **Table 1.4** below.

Table 1.4 – Responsible Personnel

Key Personnel	Area of Responsibility
<p>Bill Lawyer, Public Works Director P.O. Box 21000 Keizer, OR 97307 (503)390-3700 lawyerb@keizer.org</p>	<p>Department Director Stormwater Budget Inter-Agency Lead Citywide Communication</p>
<p>Vacant* Division Manager P.O. Box 21000 Keizer, OR 97307</p> <p>Keare Blaylock, Interim Division Manager (503)856-3526 blaylockk@keizer.org</p> <p><i>*Position turnover - November 2019</i></p>	<p>Management of Permitted Stormwater Programs Annual Reporting/Regulatory Reporting Operational Plan Development Maintenance/Repair Policy Development Recordkeeping Policy Development Education and Outreach GIS Management Inter-Agency Coordination Post-Construction in New and Re-development</p>
<p>Keare Blaylock, Sr Environmental Program Technician* P.O. Box 21000 Keizer, OR 97307 (503)856-3526 blaylockk@keizer.org</p> <p><i>*Position turnover - September 2018</i></p>	<p>Regulatory Support Systemwide Assessment Monitoring Plan Data Analysis/Recordkeeping</p>
<p>Chance Plunk, Environmental Program Technician* P.O. Box 21000 Keizer, OR 97307 (503)856-3424 plunkc@keizer.org</p>	<p>Stormwater GIS Management/Maintenance Erosion Control Post-Construction New Development Plan Review</p>

<i>*Position turnover - March 2019</i>	
<p>Sue Ranseen, Public Works GIS Technician* P.O. Box 21000 Keizer, OR 97307 (503)856-3552 ranseens@keizer.org</p> <p><i>*Position added – October 2019</i></p>	<p>Stormwater GIS Maintenance</p> <p><i>**This new position within Public Works was filled in October 2019</i></p>
<p>Mike Griffin, Stormwater Division Manager P.O. Box 21000 Keizer, OR 97307 (503)856-3551 griffinm@keizer.org</p>	<p>Implementation of UIC Operations and Maintenance Plan Implementation of Good Housekeeping Plan Implementation of Spill Response Field Manual Implementation of Illicit Discharge and Detection Plan Stormwater System Repairs and Recordkeeping Field Investigation and Response (IDDE, Spills) UIC Maintenance</p>
<p>Matt Reyes, Public Works Project Manager P.O. Box 21000 Keizer, OR 97307 (503)856-3558 reyesm@keizer.org</p>	<p>Project Management for Large Scale Development UIC Installation</p>

1.5 Contents

Section 1 serves as an introduction to the City’s reporting requirements.

Sections 2 through 8 reports the status, progress, and specifications of the six minimum control measures required through the NPDES MS4 Phase II permit, including the Schedule B(2) requirements. The referenced control measures are as follows:

1. Public Education and Outreach
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management (for new and redevelopment)
6. Pollution Prevention in Municipal Operations

Each of these sections will include reporting on the City’s suite of BMPs for the overall stormwater program and will describe activities and actions as specified in Schedule B 4(c) and (d) of the permit. Specifically, each referenced section will include an accounting of progress on each BMP, any proposed modifications and the rationale for those changes. This section highlights cross-over activities between

Keizer's two permitted programs, and any additional actions not referenced in the UICMP. The text highlighted in blue in these sections applies specifically to UICs and WPCF permit components.

Section 9 documents will include a discussion of record-keeping activities,

Section 10 presents the monitoring criteria and summarizes the results for 2018-19.

Section 11 describes changes to Keizer's underground injection controls including details about decommissioned, modified, or newly installed controls.

Appendix A includes a copy of the City's NPDES MS4 Phase II Annual Report. However, the city was not required to submit an NPDES MS4 Phase II Annual Report in 2018-19 therefore Appendix A references the 2017-18 annual report.

Appendix B presents a summary of the illicit discharge spill response and enforcement actions over the reporting period.

Appendix C shows the analyzed results of the two UIC stormwater events sampled during the reporting period.

1.6 Proposed Modifications

The City of Keizer submitted the original UICMP to DEQ in August 2013. As was stated in that document, the goals of the UIC program are to:

- Ensure that UICs are constructed, operated, and maintained in a manner that meets WPCF permit requirements, protects groundwater as a drinking water resource, and meets state and federal drinking water requirements;
- Manage stormwater by operating facilities that support the natural hydrogeologic cycle, reduce direct discharge to waterways thereby restoring normal stream flow, and recharge groundwater providing baseflow for streams;
- Collect stormwater data that is representative of the overall UIC system to identify where system improvements are needed; and
- Implement a program that is fiscally defensible for the citizens of Keizer.

When the UICMP was written, the City was waiting for the reissuance of the new MS4 Phase II Permit. A draft Stormwater Management Plan (SWMP) had been developed and that document, along with the TMDL Implementation Plan, were intended to be integrated with the UICMP to cover the City's BMPs.

DEQ issued the new Phase II General Permit in November 2018. Under the new permit, the City is required to develop a new SWMP Document. The City intends to have that draft document developed in 2020. The City will then revise the UICMP and provide that document to DEQ with the next annual report

(December 31, 2020). Any changes that come about when finalizing the SWMP Document will be provided to DEQ in the subsequent annual report.



Section 2 – Public Education & Outreach

2.1 Overview

The City selected six BMPs to address public involvement in the UICMP. One BMP is specific to the UICMP and was created to provide targeted education to owners of private stormwater facilities.

PE-1 Develop a Public Education Plan that addresses regional stormwater issues. Utilize the Mid-Willamette Outreach Group (MWOOG) to develop products.

PE-2 Utilize a statistical method to assess public awareness of stormwater issues

PE-3 Utilize the annual consumer confidence report (CCR) to inform the public about stormwater related issues

PE-4 Update the City’s website

PE-5 Provide support to the Claggett Creek Watershed Council

PE-U-1 Develop a Brochure for use by Commercial, Retail, or Multi-Family Property Owners and Manager

Table 2.1 – BMP Results

BMP	Activity	Action	Goal Met	Results
PE-1	Develop a Public Education Plan that addresses regional stormwater issues.	Develop a plan that refines the focus for outreach on specific audiences with key messages	Y	Staff made significant progress drafting Public Education Plan, which outlines the specific educational activities the City plans to carry out to satisfy the NPDES, TMDL and WPCF requirements.
	Utilize MWOOG to develop outreach products	Participate in at least 8 meetings and host 2 events	Y	Staff participated in at least 8 meetings and hosted two events: <ol style="list-style-type: none"> 1. The annual Mid-Willamette Erosion Control and Stormwater Management Summit was held on 1/29/19. 2. The annual Water Festival was held on 4/30/19, MWOOG hosted approximately 100 fifth-

				grade students from Hallman Elementary School.
PE-2	Utilize a statistical method to assess public awareness of stormwater issues	This BMP was added to the first revision of the SWMP	N	No action has occurred on this activity.
PE-3	Utilize the annual consumer confidence report (CCR) to inform the public about stormwater related issues		Y	The CCR was sent to all businesses and residents in Keizer in March 2019; it included content on reducing pollution from fertilizers and pesticides.
PE-4	Update the City's website		Y	Updates in 2018-19 included the addition of a news page, a resource library and content on healthy lawn care, impacts from car washing, sources of bacteria in local waterways, and proper disposal of products containing mercury.
PE-5	Provide support to the Claggett Creek Watershed Council	Attend meetings and activities	Y	Due to internal staff turnover and changes in the Watershed Council activity; staff attended fewer meetings but worked with the Council and Rotary on a new arboretum planting at Keizer Rapids Park.
PE-U-1	Develop a brochure for commercial, retail, and multi-family property owners or managers where UICs are used for stormwater management		Y	Brochure has been developed (no new private UICs were installed and no brochures were distributed to owners/managers due to staffing shortages).

2.2 Additional Activities for Report Year 2018-19

No additional activities to report.

2.3 Proposed Modifications and Rationale

The NPDES MS4 Phase II General Permit was issued by DEQ in November, 2018 and became effective on March 1, 2019. According to the schedule provided in that permit, the City is required to fully implement the Public Education and Public Involvement minimum control measures (and subsequent BMPs) no later than February 28, 2020. As such, staff began adapting and implementing the Public Education BMPs to align with General Permit requirements. A detailed explanation of how the new Public Education BMPs apply to the City's WPCF permit is provided below.

PE-1: Develop and implement a comprehensive Public Education Plan (PEP)

This BMP combines PE-1 and PE-5 from Table 2.1 above.

The development of a written Public Education Plan (PEP) will help staff to follow a strategic path for activities and products. The plan will outline the efforts and activities that Keizer will undertake to comply with NPDES, TMDL and WPCF requirements including how the City will utilize partnerships (i.e., MWOG and Claggett Creek Watershed Council) to develop and distribute educational messages aimed at reducing stormwater pollution and improving water quality. The PEP will be completed and implemented over the 2019-20 reporting period and evaluated on an annual basis for effectiveness. The PEP will be posted to the City's website and a copy will be provided in the 2019-20 Annual Report.

PE-2: Deliver targeted messages/activities to the public through targeted product/services

This BMP replaces/combines PE-3 and PE-U-1 from Table 2.1 above.

Target messages specified in the General Permit are aimed at reducing pollution from stormwater runoff, which is directly applicable to the goals of the WPCF permit.

The Consumer Confidence Report is a valuable tool for informing businesses and residents about the impacts of stormwater on water quality and counts as one of many products the City will continue to utilize. The City will also continue to distribute a brochure for commercial, retail, and multi-family property owners/managers where UICs are used for managing stormwater. Both activities are included in the PEP.

PE-3: Track, evaluate, assess, and manage the public education program

This BMP encompasses PE-2 from Table 2.1 above.

Staff will continue to track, evaluate, and assess all public education activities. Education activities will be evaluated using appropriate performance measures described in the PEP (such as web analytics, media platform metrics, event participation, audience reach, audience engagement, etc.). Progress will be reported in the City's annual reports.

As outlined in the Public Education Plan, staff will also conduct a survey of the public to gauge watershed awareness, behavior patterns, willingness to change attitudes, and knowledge of human impacts to local waterways. Statistical analysis will be used to evaluate survey results and guide education efforts.

PE-4: Conduct targeted outreach to construction professionals

This BMP is new and will be added to Table 2.1 next year.

It is intended to highlight specific efforts to reduce pollution from construction activities. The MS4 permit requires permit registrants to conduct educational outreach to target construction site operators two times during the permit term. Educational topics will include appropriate selection, design, installation, use and maintenance of erosion prevention and sediment control measures. Keizer also provides technical guidance to construction site operators through the Erosion Prevention & Sediment Control Permitting Program.

In addition, this BMP compliments CS-1 EPSC Training for Applicable Staff in Section 5 of this report. For example, Keizer has co-hosted the Mid-Willamette Erosion Control & Stormwater Management Summit for eight consecutive years. This event provides six hours of technical training to construction site operators as well as the City's internal staff and crews.

PI-1: Maintain a publicly accessible website with information on the SWMP

While the PEP outlines how the website will be used to convey educational messages to the public; the requirement to maintain a publicly accessible website is listed in the Public Involvement minimum control measure of the General Permit. Therefore, with DEQs approval, future reporting of website activity and updates will be reported in Section 3 of the WPCF Annual Report (Public Involvement) instead of Section 2 – Public Education.

2.4 Future Activities Planned

Brochures will continue to be provided to owners of private stormwater facilities. Owners of private stormwater facilities will continue to be identified, tracked and inspected in subsequent years.



Section 3 – Public Involvement

3.1 Overview

The City selected two BMPs to address public involvement in the UICMP. The SWAC has been instrumental in assisting staff with promoting the stormwater program as a whole. Because the committee currently includes three members of the City Council, the overall body of elected officials for the City are kept informed on the most pressing stormwater issues.

PI-1 Utilize the SWAC for Annual Program Review

PI-U-1 The SWAC will devote at least two of their regular meetings solely to UIC issues

Table 3.1 – BMP Results

BMP	Activity	Action	Goal Met	Results
PI-1	Utilize the SWAC for Annual Program Review	Set meeting specifically dedicated to stormwater management plans	Y	BMPs were evaluated by the Committee.
PI-U-1	The SWAC will devote at least two of their regular meetings solely to UIC issues		Y	The SWAC met 4 times in 2018-19. Stormwater management was thoroughly covered in 2018-19.

3.2 Additional Activities for Report Year 2018-19

The 2017-18 WPCF Annual Report was posted to the City’s website.

3.3 Proposed Modifications and Rationale

With the issuance of the new MS4 General Permit in November 2018, staff began adapting and implementing the Public Involvement BMPs to align with General Permit requirements. A detailed explanation of how the new Public Involvement BMPs apply to the City’s WPCF permit is provided below.

PI-1 Maintain a publicly accessible website

This BMP was formerly reported in Section 2 Public Education Table 2.1.

While the PEP outlines how the website will be used to convey educational messages to the public; the requirement to maintain a publicly accessible website is listed in the Public Involvement minimum control measure of the General Permit. Therefore, with DEQs approval, future reporting of website activity and updates will be reported in Section 3 of the WPCF Annual Report (Public Involvement) instead of Section 2 – Public Education.

PI-2 Utilize a stormwater advisory committee (SWAC) for stormwater program development and annual review

This BMP combines PI-1 and PI-U-1 in Table 3.1 above.

3.4 Future Activities Planned

Staff will continue to provide updates to SWAC members on stormwater management BMPs related to UIC issues. The SWAC will also be utilized to guide the development of the Stormwater Management Program Document.



Section 4 – Illicit Discharge Detection & Elimination

4.1 Overview

The City selected eight BMPs to address Illicit Discharge Detection and Elimination (IDDE) and Spill Prevention and Response issues within the City of Keizer.

ID-1 Revise the IDDE Plan

ID-2 Develop Criteria for High Risk Areas

ID-3 Map High Risk Areas in GIS and Update Annually

SP-U-1 Develop a Spill Response Manual

SP-U-2 Conduct Annual Training for Employees that Respond to Spills

SP-U-3 Complete a Spill Prevention and Response Plan

SP-U-4 Coordinate with Emergency Response Agencies

SP-U-5 Install Catch Basin Markers on Newly Installed UICs

Table 4.1 – BMP Results

BMP	Activity	Action	Goal Met	Results
ID-1	Revise the IDDE Plan	Task completed in 2013-14	Y	Implementation continues; staff is planning to make additional revisions to reflect new General Permit requirements
ID-2	Develop criteria for High Risk Areas	Task complete	Y	Criteria for determining high risk include past ID incidents, traffic data, land use, hazardous material storages and SARA sites
ID-3	Map High Risk Areas in GIS	Task complete	Y	High Risk areas have been mapped; GIS is updated annually
SP-U-1	Develop a Spill Response Manual	Task completed in 2013-14	Y	Implementation continues
SP-U-2	Conduct annual training for employees.	Conduct annual training for response to spills. Training to include a recordkeeping and	Y	Operations staff received ID training on 01/08/2019 and Spill Response training on

		reporting component		01/30/2019
SP-U-3	Complete the Spill Prevention and Response Plan (SPRP)	Task complete	Y	The Spill Prevention and Response Plan was completed
SP-U-4	Coordinate with emergency response agencies for activities which involve UICs		Y	Staff receive monthly logs from the Fire Department and a notification process has been developed with the Police Department
SP-U-5	Install catch basin markers on newly installed UICs		N	There were no markers installed in 2018-19 due to staff turnover

4.2 Additional Activities for Report Year 2018-19

An online illicit discharge reporting tool was created and posted to the City’s website along with information intended to help the public identify illicit discharges and understand the importance of preventing them.

Complaint/Spill Response - Minimum Control Measure #3 of the NDPES MS4 Phase II stormwater program requires the City to respond to illicit discharges and water quality issues. Both Public Works and Keizer Fire staff are accustomed to responding to and cleaning up spills as well as reporting and documenting them. Keizer Public Works received and responded to 20 incidents; 4 of which occurred in a UIC drainage area but no UICs were impacted. Environmental staff received 61 accident related incident reports from Keizer Fire. The 2018-19 response actions are included in Appendix B of this report. That table includes a breakdown of incidents that involved the UICs.

4.3 Proposed Modifications

There are no proposed modifications at this time, however staff is currently working to adapt Public Involvement BMPs to align with the new General Permit; proposed changes will be outlined in the 2019-20 annual report.

4.4 Future Activities Planned

All existing BMPs will continue to be implemented to meet the conditions of the WPCF. There are no additional activities planned however, activities may be adjusted in future reporting years to reflect conditions of the new MS4 General Permit.



Section 5 – Construction Site Runoff Control

5.1 Overview

CS-1 Conduct EPSC Training for Applicable Staff

CS-3 Revise the Construction Site Pollution Prevention Plan (CSPPP) and Ordinance

CS-4 Establish Hotline to Receive Complaints from the Public

CS-U-1 Add inspection of UICs to the City’s Erosion Control Field Inspection SOP

Table 5.1 – BMP Results

BMP	Activity	Action	Goal Met	Results
CS-1	Conduct EPSC Training for Applicable Staff	Training to include a plan review, example site review and a discussion of applicable BMPs.	Y	The Environmental Compliance Coordinator (inspector) received training and CESCL Certification.
CS-3	Revise the Construction Site Pollution Prevention Plan (CSPPP) and Ordinance		Y	The ordinance was revised and adopted by City Council on 12/1/14.
CS-4	Establish hotline to receive complaints from the public		Y	The City has an after-hours phone system to receive water quality complaints. Staff are on-call to respond as necessary.
CS-U-1	Add inspection of UICs to the City’s Erosion Control Field Inspection SOP		Y	The SOPs have been revised to include UIC inspections

5.2 Additional Activities for Report Year 2018-19

Training – Two new Environmental Program Technicians obtained CESCL Certification in June 2019; one Technician resigned shortly after. Three additional Public Works employees maintain CESCL Certification.

Ten Public Works employees attended the Erosion Control and Stormwater Management Summit hosted by the MWOG group in January 2018.

CSPPP Program Management - All new and existing CSPPPs are now managed through a mobile ArcGIS application (Survey 123) which shows the location and status of each permit. CSPPPs are no longer managed using spreadsheets; though a spreadsheet can be exported and archived from the application.

The City is an approved 1200-CN permit agent.

5.3 Proposed Modifications and Rationale

There are no proposed modifications at this time, however staff is currently working to adapt Construction Site Runoff Control BMPs to align with the new General Permit; proposed changes will be outlined in the 2019-20 annual report.

5.4 Future Activities Planned

There are no additional activities planned for 2019-20; however activities may be adjusted in future reporting years to reflect conditions of the new MS4 General Permit.



Section 6 – Post Construction Runoff Control

6.1 Overview

The City selected three BMPs to address Post-Construction Stormwater Runoff Control

- DS-1** Revise Design Standards and Development Code to Include Capture and Treatment for New and Re-Development
- DS-2** Implement the Revised Standards and Conduct Plan Review, Inspections, and Enforcement Activities
- DS-3** Conduct Training for Implementation of Revised Water Quality Development Standards

Table 6.1 – BMP Results

BMP	Activity	Action	Goal Met	Results
DS-1	Revise Design Standards and Development Code to include capture and treatment for new and re-development		Partial	Staff is working with the City Engineer and Community Development to create new LID design standards including the use of UICs. No progress to report.
DS-2	Implement the Revised Standards and conduct plan review, inspections, and enforcement activities		Partial	Staff is conducting plan review and inspections. LID is required for new commercial and multi-family development. New Design standards are being developed
DS-3	Conduct training for implementation of revised water quality development standards		Y	Annual training for all PW personnel includes development standards and LID topics

6.2 Additional Activities for Report Year 2018-19

The City of Keizer is working to develop a comprehensive post-construction program. The existing Design Standards were adopted by City Council resolution and include references to Clean Water Services standards as well as King County, WA. These references, and the ability of the Public Works Director to impose such requirements, has resulted in a substantial increase in the installation of low impact development elements into new and re-development projects. All projects with the exception of single family infill have LID elements.

6.3 Proposed Modifications and Rationale

There are no proposed modifications at this time, however staff is currently working to adapt Post Construction Site Runoff Control BMPs to align with the new General Permit; proposed changes will be outlined in the 2020 annual report.

6.4 Future Activities Planned

Environmental staff is developing standards for the City that reflect a combination of the City of Salem, Clean Water Services, and the Western Oregon LID guide. Public Works staff has been working closely with Community Development staff to make certain that changes to the Development Code are consistent with what is being pulled together for the Design Standards. Significant changes are not expected until 2022.



Section 7 – Operations & Maintenance

7.1 Overview

The City selected six BMPs to address Operation & Maintenance practices in the City of Keizer

- OM-2** Annually Inspect 10% of the City’s Publically Owned Infrastructure
- OM-4** Catch basin Cleaning – Implement a Rotation Program to Include Annual Inspection, Cleaning, and Repair for Catchbasins
- OM-5** Implement Street Sweeping Program
- OM-U-1** Complete the UIC Operations and Maintenance Manual for UICs
- OM-U-2** Implement the Operations and Maintenance Manual as Designed
- OM-U-3** Conduct Employee Training

Table 7.1 – BMP Results

BMP	Activity	Action	Goal Met	Results
OM-2	Annually inspect 10% of City-owned stormwater infrastructure	Contract inspection and cleaning of stormwater infrastructure with a goal of capturing 10% of the system annually	Y	Contract executed; during the reporting period 41,926 ft (12%) of pipe was video inspected and cleaned (31 loads of debris was removed from the system). No new UICs were identified as a result of this activity.
OM-4	Implement a catch basin inspection and cleaning program	Inspect and clean catch basin and manhole structures; develop a list of repairs	Y	2,323 catch basins were inspected; 270 were cleaned. 363 manholes were inspected; 17 were cleaned. 6 catch basins were repaired and 27 yards of material was removed from the system.
OM-5	Implement a Street Sweeping Program	Contract street sweeping to continuously remove	Y	Contract executed; 1208 cubic yards of

		debris from roadways within City limits.		material was removed
OM-U-1	Complete the UIC O & M Manual	Task completed in 2013-14.	Y	Implementation is ongoing.
OM-U-2	Implement the O & M manual as designed		Y	The O&M Manual is being implemented as planned; compliments sections of the Good Housekeeping Manual (MS4 permit)
OM-U-3	Conduct employee training		N	Training was provided on 11/27/2018, 01/09/2019, and 06/20/2019.

7.2 Additional Activities for Report Year 2018-19

No additional activities to report.

7.3 Proposed Modifications and Rationale

There are no proposed modifications at this time, however staff is currently working to adapt Operations & Maintenance BMPs to align with the new General Permit; proposed changes will be outlined in the 2020 annual report.

7.4 Future Activities Planned

Activities for this minimum control measure may be adjusted in the next report year to reflect conditions of the new MS4 General Permit.



Section 8 – Good Housekeeping

8.1 Overview

The City selected two BMPs to address Good Housekeeping efforts for the City’s UICs.

GH-U-1 Revise the Existing Good Housekeeping Manual to Include UIC Related Information and BMPs

GH-U-2 Conduct Employee Training

Table 8.1 – BMP Results

BMP	Activity	Action	Goal Met	Results
GH-U-1	Revise the existing Good Housekeeping Manual to include UIC related information and BMPs		Y	The Good Housekeeping Manual was updated in 2013-14
GH-U-2	Conduct employee training		Y	Training occurred on 01/08/2019 and 01/30/2019.

8.2 Additional Activities for Report Year 2018-19

There are no additional activities to report.

8.3 Proposed Modifications and Rationale

There are no proposed modifications at this time, however staff is currently working to adapt Municipal Pollution Prevention (Good Housekeeping) BMPs to align with the new General Permit; proposed changes will be outlined in the 2020 annual report.

8.4 Future Activities Planned

Activities for this minimum control measure may be adjusted in the next report year to reflect conditions of the new MS4 General Permit.



Section 9 – Record-Keeping and Reporting

9.1 Overview

The City of Keizer selected one BMP to address record-keeping activities.

RR-1 Develop an Electronic Stormwater Database to Track Stormwater Program Elements Including Repair and Maintenance Activity

Table 9.1 – BMP Results

BMP	Activity	Action	Goal Met	Results
RR-1	Develop an electronic stormwater database to track stormwater program elements including repair and maintenance activity		Y	This BMP is complete; routine updates to the GIS system have been made

9.2 Additional Activities for Report Year 2018-19

RR-1: Keizer’s Public Work’s Department is continuing to transition to ArcGIS as a method of tracking and record-keeping. The City utilizes a combination of GIS platforms to manage public assets. A cloud-based GIS platform allows Public Works employees to access and manage spatial and tabular data in the field. Program elements tracked in GIS include:

- Outfall Inspections; including outfall priority analysis, dry-weather flows, and illicit discharge detection and elimination.
- Catch Basin and Manhole Program; including inspections, maintenance and repairs
- Public and Private Stormwater Facilities Program; including inspection and maintenance data
- Public and Private Well Data updates
- Wastewater System updates (from City of Salem)
- Stormwater Asset Field Verification Data (from TV Contractors)
- Erosion Prevention & Sediment Control Program; including permit status and inspection results

9.3 Proposed Modifications and Rationale

There are no proposed modifications at this time. Staff will continue to expand utilization of GIS to track and analyze stormwater and UIC specific programs. Progress updates will be described in the City’s annual reports.

9.4 Future Activities Planned

The new MS4 General Permit requires a significant increase in record-keeping efforts therefore staff will continue to refine the geodatabase and deploy GIS applications over the 2019-20 permit term.



Section 10 – Monitoring

10.1 Overview

The City of Keizer Stormwater Monitoring Plan was approved by DEQ in August 2013. According to that document the City of Keizer will:

- Choose sample sites that represent stormwater inputs (both UIC and MS4)
- Choose sample sites that represent possible pollutant source areas as much as possible (e.g. trips per day, commercial/industrial drainage, wooden power pole density, etc.)
- Choose sample sites predominantly from the “Response Needed” UICs (those without protectiveness demonstrations based on the Groundwater Protectiveness Demonstration).
NOTE: There were none in this category, as all UICs were found to be protective status.

As discussed in the 2014-15 Annual Report, Keizer chose new locations for testing after the first two years of sampling. The new sample site locations were approved by DEQ, and are summarized below:

UIC 101- Commercial/Industrial

Keizer has a limited number of sites to choose from in this category. Keizer has very few industrial sites and commercial sites with UICs which tend to be private UICs and/or smaller drainage areas. Because of the limitations in this category staff has decided to keep our current site, UIC 101 as the Commercial/Industrial representative. This site has a relatively large drainage area, with multiple automotive and other industrial shops, the runoff from which is well captured at the existing sampling point.

UIC 25 - High Traffic

This UIC was also in our first two year’s sampling, in the MS4 Connected category. UIC 25 actually covers a large area including both residential as well as high traffic categories. The original sample site was well inside the UIC drainage. The new sample location within the UIC is located to capture the drainage from River Road, a major arterial.

UIC 10 – Wooden Power Poles (Penta source)

UIC 10 has not been sampled previously. It encompasses a good source of potential pentachlorophenol with a wooden power pole housed in impervious material, draining directly to the catch basin leading into the UIC.

UIC 36 – Single Family Residential (Major land use category for Keizer)

UIC 36 has not been sampled previously. It is a medium-sized horizontal perforated pipe UIC with the sampling point in the center of the drainage areas.

UIC 21 – Multi-Family Residential

The new site for Multi-Family Residential is an apartment complex with the drainage from the parking area draining directly into a public UIC. The original Multi-Family site was in a duplex area.

UIC 16 – MS4 Connected UIC

The new sample site for this UIC is located in a residential area which has a hybrid UIC-MS4 system. The sampling point is capturing runoff from the UIC portion of the system.

The City of Keizer successfully met the permit requirement of two sampled storms this reporting year. A summary of the sampling results is presented below (refer to the table in Appendix C for a complete accounting of the sampling data for this reporting period).

Action Levels for Pollutants are shown in Table 10.1 below:

Table 10.1 – Pollutants and Action Levels from the Approved Monitoring Plan

TABLE 1 POLLUTANTS - Action Levels for Pollutants	
Monitoring Parameter	Action Level at Injection Point (µg/L)
Benzo(a)pyrene	2
Di(2-ethylhexyl)phthalate	300
Pentachlorophenol	10
Lead (Total)	500
Zinc (Total)	50,000
Copper (Total)	1300

10.2 Summary of Results

Keizer sampled storms on 11/28/18 and 12/18/18. As in previous years, lab results showed extremely low levels of pollutants in our stormwater runoff. Of the 72 total data points from the two required sample events, 18% were total non-detects (13 of 72). For the data points where a pollutant was detected, the average detection level was well below 2% of the ‘Action Level’.



Section 11 – UIC Registration Information

11.1 Overview

The purpose of this section of the WPCF Annual Report is to report on those publicly owned UICs that were discovered during the permit year, those that are no longer part of the inventory, or newly installed publicly owned UICs.

All new UICs are evaluated against the Groundwater Protectiveness Demonstration Model that was developed by GSI Water Solutions, Inc. for the City of Keizer in 2013. The depth at the deepest point of injection is compared to the depth to seasonal high groundwater to ensure new UICs have adequate separation to be fully protective of groundwater.

For details on the UICs referenced below, please see updated UIC registration spreadsheet included on disk with this report.



Appendix A

2018-19 NPDES MS4 Phase II Annual Report

The city was not required to submit an NPDES MS4 Phase II Annual Report for 2018-19 therefore Appendix A has been intentionally left blank. For details on the minimum control measures referred to in this report, please refer to the 2017-18 NPDES MS4 Phase II Annual Report on our website:

<https://www.keizer.org/media/Departments/Public%20Works/Document%20Library/2017-2018%20NPDES%20Report%20Final.pdf>



Appendix B

Summary of Illicit Discharge Spill Response and Enforcement Actions

Minimum Control Measure #3 of the NDPES MS4 Phase II Permit requires the City to respond to illicit discharges and water quality issues. Both Public Works and Keizer Fire staff are accustomed to responding to and cleaning up spills as well as reporting and documenting them. During the reporting period, Keizer Fire responded to 61 spill-related incidents. Keizer Public Works received reports of, or detected through field reconnaissance, 20 incidents; 4 of which involved a UIC. The 2018-19 response actions are summarized below.

Automotive spills (due to leaks or accidents) were the most frequently reported spill. Discharges from construction projects were the second most common, though most were from homeowner projects and not contractors.

Due to increased vigilance on the part of Keizer staff, most incidents were dealt with before any material moved from the original spill location.

We continue to use Code Enforcement staff to deal with repeat or uncooperative offenders relating to spills or dumping. The IDDE requirements of the new General Permit will result in changes to enforcement procedures.

2018/19 Combined PW Totals	
Automotive	7
Chemical	5
Construction	5
Food/Grease	0
Sediment	2
Sanitary Sewer	0
Vegetation	0
Water Waste	1
Total Incidents	20

2018/19 Fire IDDE Incidents by Type	
Automotive	61
Chemical	0
Vehicle Fire	0
Biofluid	0
Total Incidents	61

2018/19 UIC IDDE Incidents by Type	
Automotive	1
Chemical	1
Construction	1
Food/Grease	0
Sediment	1
Sanitary Sewer	0
Vegetation	0
Water Waste	0
Total Incidents	4

2018-19 Illicit Discharge Report

Date	Type	Location	DESCRIPTION	ACTIONS TAKEN
7/11/2018	MS4 Chemical	1617 Chemawa Rd Ne	Vehicle accident downed a power pole; the transformer leaked 10 gallons of mineral oil onto the ground. No fluids entered the MS4.	Staff placed bio bags around the downstream catch basin and also placed traffic control. No mineral oil/contaminants entered the MS4. PGE reported that no PCBs were present in the spill and completed the clean up the following day.
7/20/2018	MS4 Automotive	5210 Claggett	Fire Dept. dispatched PW for assistance with a spill. Approximately one gallon of diesel had leaked from a vehicle due to a ruptured fuel tank. The Fire Dept. contained and treated the spill using grease sweep. No fluids entered the MS4 system.	CCS environmental was called by the trucking company and took over the spill containment and clean up once they got to the scene. AMC Fleet Repair showed up and transferred the diesel from the ruptured tank to a drum and plugged the tank to prevent further spill. The truck finally was able to leave after AMC Fleet made the repair.
7/31/2018	MS4 Automotive	Allendale and Pleasant Ct.	Staff reported a small amount of oil had been spilled in the road when a resident attempted a vehicle repair in the roadway. No fluids entered the MS4.	Brad wrote up a complaint form and left it on the windshield explaining the need to get the area cleaned up.
7/31/2018	MS4 Chemical	5369 Willow Leaf	A carpet cleaning van was discharging fluid onto the street from the vehicle. No fluids entered the MS4 system.	Brad spoke with the operator of the van and asked what he was discharging and the man said "pottable water". Brad said that was not acceptable and he needed to stop it. Brad then wrote a report and left it for them.
10/2/2018	MS4 Construction	899 Rupp	A homeowner working with concrete discharged slurry to the gutter inadvertently during a home improvement project. No fluids entered the MS4.	Lyle went to the address and spoke with the homeowner about cleaning up the dried slurry, and they said that they would. None of the material had made it to the catch basin down the street.
10/19/2018	UIC Construction	Chemawa Rd Ne to Four Winds to Juniper	White paint leaked from a vehicle and dried on the pavement. Staff found that the perpetrator had washed the paint onto the street in front of the house. No UICs were impacted.	The homeowner was educated by staff on illicit discharge.
11/29/2018	MS4 Automotive	Country Glen/Ridgetop Dr	A garbage hauler incurred a hydraulic hose break and leaked hydraulic fluid onto the road. No fluids entered the MS4.	Hauler applied sand and clean sweep to the affected areas and then used a street sweeper to clean up.

Date	Type	Location	DESCRIPTION	ACTIONS TAKEN
12/17/2018	MS4 Chemical	5415 Arcade Ave	Staff investigated an oil sheen coming from a pile of wood chips that was leaching onto the street and down the gutter.	Staff placed bio bags in the gutter to filter and slow the flow of suspected tannins to the MS4. Homeowner was told to address the problem; homeowner tarped and anchored the pile.
1/7/2019	MS4 Automotive	1868 Wiessner	Staff reported a garbage hauler leaking hydraulic fluid. No fluids entered the MS4.	Hauler applied clean sweep to the affected areas and then used a street sweeper to clean up.
1/14/2019	UIC Sediment	Chemawa Rd Ne	Resident sent a letter to report repeated mud track off from a neighbors property. No UICs were impacted.	Staff left a door hanger with explicit instructions to clean up all of the mud on the sidewalk and the street.
1/18/2019	MS4 Automotive	515 Marino	Staff reported a vehicle fluid (possible petroleum product) on the roadway. No fluids entered the MS4.	Staff applied Simple Green and clean sweep to the affected areas.
1/31/2019	MS4 Automotive	Fir Cone Harvest dr	Garbage hauler self-reported a hydraulic leak. Staff responded to assist with clean up. No fluids entered the MS4.	Hauler applied clean sweep and then used a street sweeper to clean up.
4/3/2019	MS4 Construction	1705 Shady Ln	Staff reported construction debris and paint residue from used paint buckets at a private residence. No material or fluid entered the MS4.	Staff told homeowner to properly dispose of the debris immediately; upon follow up, staff reported that the homeowner complied.
4/29/2019	UIC Chemical	1227 Trent Ave N	Caller reported to OERS that a neighbor directed their landscaper to dispose of excess gasoline down the catchbasin next to their driveway. No UICs were impacted.	Staff investigated and found no evidence of gas in the sump of the catch basin. Homeowner was educated by staff as a precaution.
5/13/2019	MS4 Chemical	2000 Stone Hedge Dry	Staff reported that a homeowner had broadcasted fertilizer into the street. No material entered the MS4.	Staff left a door hanger with explicit instructions to clean up all of the fertilizer on the sidewalk and the street. Upon follow up, the homeowner complied.
5/23/2019	MS4 Construction	SW Corner Chemawa and River Rd.	Staff reported a contractor for failing to use preventive measures and allowing concrete cutting waste water to enter a catch basin.	Staff initiated a stop work order until the contractor deployed the appropriate BMPs. The catch basin was cleaned and filter inserts were applied.
6/3/2019	MS4 Construction	1038 Ventura St N	Staff reported that a homeowner had an uncontained rock pile that was scattered into the right-of-way. No material entered the MS4.	Staff left a door hanger with explicit instructions to clean up all of the rock on the sidewalk and street and to apply BMPs.

Date	Type	Location	DESCRIPTION	ACTIONS TAKEN
6/12/2019	MS4 Sediment	6834 Rockledge Ct.	Staff reported that dirt and dried mud was all over the street in front of a residence where a driveway was being paved.	Staff left a door hanger with explicit instructions to clean up all of the dirt and to apply BMPs. Upon follow up, the homeowner complied.
6/17/2019	UIC Automotive	Chemawa Rd and Lockhaven	Keizer Fire Dept reported that a vehicle had spilled diesel onto the road way. No UICs were impacted.	The fire department and the perpetrator applied clean sweep to the area. Staff ordered a street sweeper to clean up.
6/24/2019	MS4 Waterwaste	2445 Tynell Ct	Resident reported dirty water discharging from a curb drain. Staff investigations revealed the homeowner was draining a dirty pool. The fluid did enter the MS4.	Staff spoke to the homeowner and educated them on illicit discharge violations; the discharge was chlorine free.

2018-19 Illicit Discharge Report (Keizer Fire Department)

Date	Type	Location	Description
7/4/2018	Automotive Spill	4380 River Rd N	Motor Vehicle Accident (MVA) 1 cup coolant cleaned with absorbant pads. No waterways or storm drains threatened.
7/7/2018	Automotive Spill	Cherry Ave NE at Bever Dr NE	MVA; Small amount of fluid was cleaned from beneath the vehicles, no storm drains or waterways threatened.
7/13/2018	Automotive Spill	Lockhaven Dr NE at McLeod Ln NE	MVA; Large amount of coolant was spilled, it was cleaned up with absorbant. Keizer Public Works on scene.
7/20/2018	Automotive Spill	Claggett St NE at Wittenberg Ln NE	Semitruck had a saddle tank puncture. Diesel leaked onto the roadway. Keizer Public Works mitigated the spill.
7/23/2018	Automotive Spill	349 McNary Estates Dr N	MVA; Small amount of fluid leaked, KPW dispatched to clean up. No waterways or storm drains threatened.
7/26/2018	Automotive Spill	River Rd N at Lockhave Dr N	Two vehicle MVA with moderate amount of radiator fluid down. Cleaned with absorbant. No waterways or storm drains threatened.
7/27/2018	Automotive Spill	930 Chemawa Road NE	Two car MVA with fluids down. Cleaned up about a quart of radiator fluid with ultrasorb. No waterways or storm drains threatened.
7/30/2018	Automotive Spill	4408 Verda Lane NE	MVA; Cleaned about a gallon of radiator fluid from the roadway with absorbant. No waterways or storm drains
8/11/2018	Automotive Spill	Chemawa Rd NE at McLeod Ln NE	MVA; About 2 gallons of antifreeze down. Cleaned with ultrasorb, no storm drains or waterways threatened.
8/17/2018	Automotive Spill	Cherry Ave NE at Sam Orcutt Wy NE	Two car MVA w/ fluids down. Used absorbant to clean about 1 gallon of antifreeze. No storm drains or waterways threatened.
9/17/2018	Automotive Spill	Chemawa Rd N at Elizabeth St N	MVA; Small spill cleaned up with absorbant. No waterways threatened.
9/17/2018	Automotive Spill	Chemawa Rd N at River Rd N	MVA; Fluids cleaned up with absorbant. No waterways threatened.
9/20/2018	Automotive Spill	Lockhaven Dr N at River Rd N	Two vehicles MVA; leaking antifreeze. Controlled and cleaned up the spill. No fluids in the drains or to the waterways.

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Date	Type	Location	Description
9/21/2018	Automotive Spill	Lockhaven Dr NE at Keizer Station Blvd	MVA; Very small amount of antifreeze cleaned from the roadway. No waterways or storm drains threatened.
10/9/2018	Automotive Spill	Chemawa Rd NE at Ulali Dr NE	MVA; Small amount of anti-freeze down, cleaned with absorbant.
10/16/2018	Automotive Spill	Chemawa Rd N at Elizabeth St N	MVA; About a 2 tablespoons of oil on the roadway. Cleaned with absorbant. No storm drains/waterways threatened.
10/19/2018	Automotive Spill	River Rd N at Lockhaven Dr N	MVA; About 2 gallons of oil and anti-freeze in the roadway. Cleaned with absorbant. No storm drains/waterways threatened.
10/20/2018	Automotive Spill	Chemawa Rd NE at Ulali Dr NE	MVA; Cleaned a small amount of transmission fluid from the roadway. No storm drains/waterways threatened.
10/21/2018	Automotive Spill	Chemawa Rd NE at Stadium Dr NE	MVA; Cleaned spill with absorbant. No fluids into the storm drain or waterways.
10/31/2018	Automotive Spill	River Rd N at Manzania St NE	MVA; Radiator fluid down, cleaned with absorbant. Spill not near any storm drains/waterways.
11/1/2018	Automotive Spill	759 Delta Drive NE	MVA; Vehicle leaking gas, no storm drains threatened. Cleaned spill and placed absorbant pads. Advised resident to have repairs made.
11/11/2018	Automotive Spill	Chemawa Rd NE at McLeod Ln NE	Two vehicle MVA; Small amount of fluid leaking from both vehicles. Cleaned with absorbant. Fluid was going to a storm drain, but was stopped before spilling into the drain.
11/12/2018	Automotive Spill	4990 River Rd N	MVA; Some antifreeze down, cleaned up and disposed of. No storm drains threatened.
11/13/2018	Automotive Spill	761 Lockhaven Drive NE	MVA; About one gallon of radiator fluid on the ground. Fluid was cleaned with absorbant from the road. No storm drains or waterways threatened.
12/8/2018	Automotive Spill	River Rd N at Manbrin Dr NE	MVA; a small amount of fluids down. Cleaned with absorbant pads.
12/11/2018	Automotive Spill	Stadium Dr at Keizer Station Blvd	MVA; Car vs bus. Antifreeze down from the car, less than 1 gallon. No storm drains or waterways threatened. Cleaned w/ absorbant.

Date	Type	Location	Description
12/15/2018	Automotive Spill	Chemawa Rd at Keizer Station Blvd	3 vehicle MVA; About a gallon of antifreeze, oil and transmission fluid. Cleaned with absorbant. No waterways or storm drains threatened.
12/17/2018	Automotive Spill	4170 River Rd N	MVA; About 1 gallon of antifreeze cleaned up with absorbant and pads. No waterways or storm drains threatened.
12/19/2018	Automotive Spill	Cherry Ave at Alder Dr	MVA; Large debris field with a large amount of fluid down and into a storm drain. Contacted KPW who responded and cleaned up the accident scene.
1/3/2019	Automotive Spill	5119 River Rd N	MVA; Fluid in the roadway, cleaned with absorbant. No waterways or storm drains threatened.
1/10/2019	Automotive Spill	Lockhaven Drive NE at McLeod Lane NE	Three car MVA; Fluid (more than likely windshield fluid) on the ground. Cleaned w/ absorbant. No waterways or storm drains threatened.
1/21/2019	Automotive Spill	Lockhaven Drive N at Joan Drive N	MVA; Small amount of coolant and windshield fluid. Fluids made it to the storm drain. Contacted Keizer Public Works who said they would take care of it and clean the drain Tuesday.
1/28/2019	Automotive Spill	River Road NE at Meadowridge Street NE	MVA; Fluids down in roadway, cleaned with absorbant. No fluids in the waterways or storm drains.
1/29/2019	Automotive Spill	Lockhave Drive NE at 14th Street NE	MVA; Light radiator fluid on the ground. No storm drains or waterways threatened. Fluid cleaned with absorbant.
2/6/2019	Automotive Spill	5159 Joan Drive N	MVA; Fluids down from both vehicles, less than one gallon. Cleaned with absorbant and pads. No storm drains or waterways threatened.
2/10/2019	Automotive Spill	Ulali Drive NE at Stadium Drive NE	MVA; Debris and about a quart of antifreeze in the roadway, cleaned with absorbant. No storm drains or waterways threatened.
2/10/2019	Automotive Spill	1625 Chemawa Road NE	MVA; Debris and about a quart of mixed oil, transmission fluid and antifreeze cleaned up. No storm drains or waterways threatened.
2/24/2019	Automotive Spill	Lockhaven Drive NE at Chemawa Road NE	MVA; All spills mitigated, no storm drains or waterways threatened.

Date	Type	Location	Description
3/16/2019	Automotive Spill	5210 River Rd N	Roll over MVA. All fluids were picked up with absorbant pads. No waterways or storm drains were threatened.
3/24/2019	Automotive Spill	Chemawa Rd NE at Chetco Ct NE	MVA; Radiator fluid down from one vehicle, less than one gallon. Cleaned with absorbant. No waterways or storm drains threatened.
4/1/2019	Automotive Spill	Shady Lane NE at Shady Court NE	MVA; Small amount of antifreeze spilled, placed absorbant down. No storm drains or waterways threatened.
4/6/2019	Automotive Spill	Lockhaven Dr. NE and 14th Ave NE	MVA; Samll amount of fluid down. Cleaned with absorbant pads. No storm drains or waterways threatened.
4/16/2019	Automotive Spill	Stadium Dr NE at Ulali Dr NE	Less than one gallon of fluid from both vehicles cleaned with absorbant. No waterways or storm drains threatened.
4/19/2019	Automotive Spill	Lockhaven Dr NE at Keizer Station Blvd. NE	MVA; 1-2 gallons of antifreeze and other fluids down. Cleaned with absorbant and pads placed down. No waterways or storm drains threatened.
4/26/2019	Automotive Spill	3624 River Rd N	MVA; One radiator worth of fluid down. Cleaned with absorbant and pads. No storm drains or waterways threatened.
4/29/2019	Automotive Spill	Stadium Dr NE at Ulali Dr NE	Two vehicle MVA with both cars losing oil and coolant. About two gallons from both vehicles. Cleaned with absorbant. No waterways or storm drains threatened.
4/30/2019	Automotive Spill	4170 River Rd N	MVA; Less than one gallon of fluid in the roadway. Spill was managed by Keizer Public Works. KZP provided spill assistance to them.
5/2/2019	Automotive Spill	4850 River Rd N	MVA; Small amount of wiper fluid cleaned up. Called back to scene for transmission fluid that began to leak. KPW on scene, assisted them. No fluids into the storm drains.
5/8/2019	Automotive Spill	Orchard St N at Joan Dr N	MVA; Small amount of anti-freeze down. Cleaned with absorbant. No storm drains or waterways threatened.
5/11/2019	Automotive Spill	5138 10th Ave NE	MVA; Radiator fluid spilled. Cleaned with abosorbant. No storm drains threatened.

Date	Type	Location	Description
5/20/2019	Automotive Spill	Verda Ln NE at Lockhaven Dr NE	MVA; Small amount of diesel fluid in the roadway. No excess fluid to clean up. No action taken. Fluid was not near a storm drain or waterway.
5/23/2019	Automotive Spill	6800 Wheatland Rd N	MVA; Antifreeze cleaned up from roadway. KPW on scene, assisted them. No storm drains threatened.
5/26/2019	Automotive Spill	River Rd N at Lockhaven Dr N	Rear-end type of MVA. Radiator fluid down. Cleaned fluid from roadway. No storm drains or waterways threatened.
5/29/2019	Automotive Spill	6455 Keizer Station Blvd NE	MVA; Fluids down, cleaned by fire. No fluid into storm drains or waterways.
5/29/2019	Automotive Spill	1025 Clearview Ave NE	Vehicle vs. motorcycle. Fluids down from motorcycle, cleaned by fire. No fluids in storm drains or waterways.
6/3/2019	Automotive Spill	3843 River Rd N	Two car MVA w/ fluids in the southbound lane. Approx. a gallon of fluid in the roadway cleaned with absorbant. No waterways or storm drains threatened.
6/3/2019	Automotive Spill	Rivercrest Dr N at Marino Dr N	Vehicle into parked car. About 16 oz of fluid cleaned with absorbant pad. No waterways or storm drains threatened.
6/17/2019	Automotive Spill	Chemawa Rd NE at Stadium Dr NE	MVA; Approx. 3 gallons diesel spill. No storm drains threatened. Keizer Public Works on scene with H&H Paving and Lorens Sanitation to assist in clean up.
7/2/2019	Automotive Spill	Lockhaven Dr NE at McLeod Lane nE	MVA; Cleaned approx. a gallon of mixed fluids from the ground with absorbant and pads. No wateways or storm drains threatened.
7/9/2019	Automotive Spill	4729 12th Ave NE	MVA; Fuel slowly dripping from the fuel line. Pads and abosbant placed. No waterways or storm drains threatened.
7/28/2019	Automotive Spill	5450 River Rd N	MVA; Small amount of radiator and oil down. Fluid stopped from going down the storm drain with absorbant. Cleaned from road. No fluids in waterway or drain.



Appendix C

2018-19 UIC Monitoring Results

Sample Date	Sample ID	Site Location	Analyte	Result (µg/L)	Action Level (µg/L)	MRL	% Action Level
11/28/2018	PY6_1	UIC 16 - MS4 Connected	Copper	0.98	1300	0.5	0.08
11/28/2018	PY6_1	UIC 16 - MS4 Connected	Lead	0.18	500	0.1	0.04
11/28/2018	PY6_1	UIC 16 - MS4 Connected	Zinc	85.40	50000	1	0.17
11/28/2018	PY6_1	UIC 16 - MS4 Connected	Benzo(a)pyrene	ND	2	0.1	0.00
11/28/2018	PY6_1	UIC 16 - MS4 Connected	Phthalate (DEHP)	0.89	300	1	0.30
11/28/2018	PY6_1	UIC 16 - MS4 Connected	Penta (PCP)	0.15	10	0.5	1.50
11/28/2018	PY6_2	UIC 36 - Residential SF	Copper	6.38	1300	0.5	0.49
11/28/2018	PY6_2	UIC 36 - Residential SF	Lead	2.96	500	0.1	0.59
11/28/2018	PY6_2	UIC 36 - Residential SF	Zinc	208.00	50000	1	0.42
11/28/2018	PY6_2	UIC 36 - Residential SF	Benzo(a)pyrene	ND	2	0.1	0.00
11/28/2018	PY6_2	UIC 36 - Residential SF	Phthalate (DEHP)	0.57	300	1	0.19
11/28/2018	PY6_2	UIC 36 - Residential SF	Penta (PCP)	1.12	10	0.5	11.20
11/28/2018	PY6_3	UIC 25 - High Traffic	Copper	6.18	1300	0.5	0.48
11/28/2018	PY6_3	UIC 25 - High Traffic	Lead	0.41	500	0.1	0.08
11/28/2018	PY6_3	UIC 25 - High Traffic	Zinc	32.80	50000	1	0.07
11/28/2018	PY6_3	UIC 25 - High Traffic	Benzo(a)pyrene	ND	2	0.1	0.00
11/28/2018	PY6_3	UIC 25 - High Traffic	Phthalate (DEHP)	1.24	300	1	0.41
11/28/2018	PY6_3	UIC 25 - High Traffic	Penta (PCP)	0.15	10	0.5	1.50
11/28/2018	PY6_4	UIC 21 - Residential Mult	Copper	6.20	1300	0.5	0.48
11/28/2018	PY6_4	UIC 21 - Residential Mult	Lead	1.18	500	0.1	0.24
11/28/2018	PY6_4	UIC 21 - Residential Mult	Zinc	30.10	50000	1	0.06
11/28/2018	PY6_4	UIC 21 - Residential Mult	Benzo(a)pyrene	ND	2	0.1	0.00
11/28/2018	PY6_4	UIC 21 - Residential Mult	Phthalate (DEHP)	3.37	300	1	1.12
11/28/2018	PY4_4	UIC 21 - Residential Mult	Penta (PCP)	0.19	10	0.5	1.90
11/28/2018	PY6_5	UIC 101 - Ind/Comm	Copper	5.82	1300	0.5	0.45
11/28/2018	PY6_5	UIC 101 - Ind/Comm	Lead	1.15	500	0.1	0.23
11/28/2018	PY6_5	UIC 101 - Ind/Comm	Zinc	37.40	50000	1	0.07
11/28/2018	PY6_5	UIC 101 - Ind/Comm	Benzo(a)pyrene	ND	2	0.1	0.00
11/28/2018	PY6_5	UIC 101 - Ind/Comm	Phthalate (DEHP)	1.23	300	1	0.41
11/28/2018	PY6_5	UIC 101 - Ind/Comm	Penta (PCP)	0.14	10	0.5	1.40
11/28/2018	PY6_6	UIC 10 - Power Poles	Copper	24.50	1300	0.5	1.88
11/28/2018	PY6_6	UIC 10 - Power Poles	Lead	12.60	500	0.1	2.52
11/28/2018	PY6_6	UIC 10 - Power Poles	Zinc	87.80	50000	1	0.18
11/28/2018	PY6_6	UIC 10 - Power Poles	Benzo(a)pyrene	ND	2	0.1	0.00
11/28/2018	PY6_6	UIC 10 - Power Poles	Phthalate (DEHP)	1.62	300	1	0.54
11/28/2018	PY6_6	UIC 10 - Power Poles	Penta (PCP)	ND	10	0.5	0.00

Sample Date	Sample ID	Site Location	Analyte	Result (µg/L)	Action Level (µg/L)	MRL	% Action Level
12/18/2018	PY6_7	UIC 10 - Power Poles	Copper	1.71	1300	0.5	0.13
12/18/2018	PY6_7	UIC 10 - Power Poles	Lead	0.43	500	0.1	0.09
12/18/2018	PY6_7	UIC 10 - Power Poles	Zinc	150.00	50000	1	0.30
12/18/2018	PY6_7	UIC 10 - Power Poles	Benzo(a)pyrene	0.07	2	0.1	3.50
12/18/2018	PY6_7	UIC 10 - Power Poles	Phthalate (DEHP)	0.30	300	1	0.10
12/18/2018	PY6_7	UIC 10 - Power Poles	Penta (PCP)	0.98	10	0.5	9.80
12/18/2018	PY6_8	UIC 16 - MS4 Connected	Copper	1.10	1300	0.5	0.08
12/18/2018	PY6_8	UIC 16 - MS4 Connected	Lead	0.14	500	0.1	0.03
12/18/2018	PY6_8	UIC 16 - MS4 Connected	Zinc	15.20	50000	1	0.03
12/18/2018	PY6_8	UIC 16 - MS4 Connected	Benzo(a)pyrene	ND	2	0.1	0.00
12/18/2018	PY6_8	UIC 16 - MS4 Connected	Phthalate (DEHP)	0.20	300	1	0.07
12/18/2018	PY6_8	UIC 16 - MS4 Connected	Penta (PCP)	0.19	10	0.5	1.90
12/18/2018	PY6_9	UIC 21 - Residential Mult	Copper	6.29	1300	0.5	0.48
12/18/2018	PY6_9	UIC 21 - Residential Mult	Lead	0.58	500	0.1	0.12
12/18/2018	PY6_9	UIC 21 - Residential Mult	Zinc	42.20	50000	1	0.08
12/18/2018	PY6_9	UIC 21 - Residential Mult	Benzo(a)pyrene	ND	2	0.1	0.00
12/18/2018	PY6_9	UIC 21 - Residential Mult	Phthalate (DEHP)	0.69	300	1	0.23
12/18/2018	PY6_9	UIC 21 - Residential Mult	Penta (PCP)	0.19	10	0.5	1.90
12/18/2018	PY6_10	UIC 25 - High Traffic	Copper	10.60	1300	0.5	0.82
12/18/2018	PY6_10	UIC 25 - High Traffic	Lead	3.03	500	0.1	0.61
12/18/2018	PY6_10	UIC 25 - High Traffic	Zinc	96.80	50000	1	0.19
12/18/2018	PY6_10	UIC 25 - High Traffic	Benzo(a)pyrene	ND	2	0.1	0.00
12/18/2018	PY6_10	UIC 25 - High Traffic	Phthalate (DEHP)	4.28	300	1	1.43
12/18/2018	PY6_10	UIC 25 - High Traffic	Penta (PCP)	0.39	10	0.5	3.90
12/18/2018	PY6_11	UIC 36 - Residential SF	Copper	3.82	1300	0.5	0.29
12/18/2018	PY6_11	UIC 36 - Residential SF	Lead	0.80	500	0.1	0.16
12/18/2018	PY6_11	UIC 36 - Residential SF	Zinc	27.60	50000	1	0.06
12/18/2018	PY6_11	UIC 36 - Residential SF	Benzo(a)pyrene	ND	2	0.1	0.00
12/18/2018	PY6_11	UIC 36 - Residential SF	Phthalate (DEHP)	0.85	300	1	0.28
12/18/2018	PY6_11	UIC 36 - Residential SF	Penta (PCP)	0.21	10	0.5	2.10
12/18/2018	PY6_12	UIC 101 - Ind/Comm	Copper	10.10	1300	0.5	0.78
12/18/2018	PY6_12	UIC 101 - Ind/Comm	Lead	6.90	500	0.1	1.38
12/18/2018	PY6_12	UIC 101 - Ind/Comm	Zinc	45.80	50000	1	0.09
12/18/2018	PY6_12	UIC 101 - Ind/Comm	Benzo(a)pyrene	ND	2	0.1	0.00
12/18/2018	PY6_12	UIC 101 - Ind/Comm	Phthalate (DEHP)	2.37	300	1	0.79
12/18/2018	PY6_12	UIC 101 - Ind/Comm	Penta (PCP)	ND	10	0.5	0.00