Underground Injection Control Management Plan

■

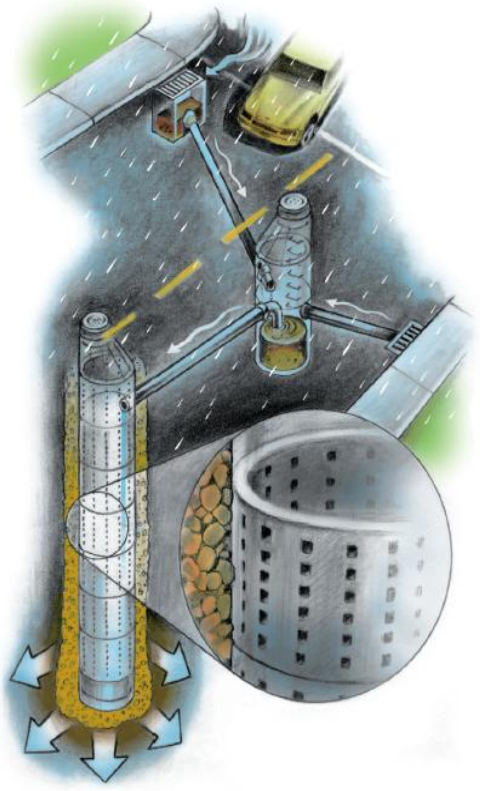
Annual Report No.7

Fiscal Year 2011 – 2012
(July 1, 2011 – June 30, 2012)

Water Pollution Control Facilities (WPCF) Permit

Class V Stormwater Underground Injection Control Systems

DEQ Permit Number 102830



November 1, 2012

Prepared by

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
working for clean rivers

— CITY OF PORTLAND —
ENVIRONMENTAL SERVICES
1120 SW Fifth Avenue, Room 1000, Portland, Oregon 97204 ▪ Dan Saltzman, Commissioner ▪ Dean Marriott, Director

November 1, 2012

Mr. Greg Geist
Water Quality Manager, Stormwater and Underground Injection Control Programs
Oregon Department of Environmental Quality
2020 SW 4th Avenue, Suite 400
Portland, Oregon 97201

Subject: Submittal of UICMP Annual Report No. 7
City of Portland
DEQ Water Pollution Control Facilities Permit No. 102830

Dear Greg:

The City of Portland's Bureau of Environmental Services is pleased to submit the *Underground Injection Control Management Plan Annual Report No. 7 – Fiscal Year 2011-2012.* This document was prepared in accordance with the Water Pollution Control Facilities (WPCF) permit (DEQ Permit No.102830) for the City's Class V Stormwater Underground Injection Control Systems (UIC). The permit was issued on June 1, 2005.

The *UICMP Annual Report No. 7* summarizes programmatic activities implemented by the City in fiscal year (FY) 2011-12 (July 1, 2011 – June 30, 2012) and proposed activities for the coming FY 2012-13. Completed activities, key accomplishments, and activities for the coming fiscal year are organized and described relative to the following four UIC program elements:

System Management summarizes citywide actions implemented under five BMP categories to prevent, minimize, and control pollutants prior to infiltration conducted during FY 11-12. It also identifies the main projected activities for FY 12-13.

System Monitoring summarizes the seventh-year results of UIC monitoring conducted under the *Stormwater Discharge Monitoring Plan* (SDMP) and submitted in the seventh-year *Stormwater Discharge Monitoring Report* (November 1, 2012).

Evaluation and Response provides an overview of evaluation and response actions conducted during FY 11-12 and the main projected activities for FY 12-13.

Corrective Actions summarizes the corrective actions implemented during FY 11-12 and projected main activities for FY 12-13 to address UICs that do not meet permit requirements.

The report also contains the following appendices:

Appendix A: UICs Identified, Constructed, or Removed FY 11-12
Appendix B: Category 3 UIC Status
Appendix C: Spills That Have Occurred within Areas Serviced by UICs

If you have questions or need additional information, please call me at 503-823-5737. I look forward to our continued collaboration on implementing the WPCF Permit.

Sincerely,

Barbara Adkins
UIC Program Manager
City of Portland
Bureau of Environmental Services

Enclosures:
Underground Injection Control Management Plan Annual Report No.7 –
3 hard copies (w/enclosed electronic copy)

cc: UIC project file w/ enclosures

City of Portland, Oregon

Water Pollution Control Facilities (WPCF) Permit For
Class V Stormwater Underground Injection Control Systems

Permit Number: 102830

Underground Injection Control Management Plan Annual Report No. 7

Fiscal Year 2011-2012
(July 1, 2011 – June 30, 2012)

November 1, 2012

Prepared By:
City of Portland, Bureau of Environmental Services

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Introduction

This *Underground Injection Control Management Plan (UICMP) Annual Report No. 7* is submitted to the Oregon Department of Environmental Quality (DEQ) to fulfill reporting requirements for the City of Portland's Water Pollution Control Facility (WPCF) Permit for Class V Stormwater Underground Injection Control Systems (UICs). The report summarizes UIC program activities during the seventh permit reporting year (July 1, 2011 through June 30, 2012).

Background

DEQ issued the WPCF permit to the City on June 1, 2005. As required by the permit, the City prepared a *UIC Management Plan* (UICMP) and submitted it to DEQ for approval on December 1, 2006. The UICMP describes the activities the City will implement throughout the permit term (June 1, 2005 – May 31, 2015) to protect groundwater and meet WPCF permit requirements. The permit also requires the City to submit a UICMP annual report that summarizes the status of implementing the UICMP and each of its components.

The City has organized the UICMP and the annual report into the following four major program elements:

- **System Management** includes ongoing, programmatic activities (best management practices, or BMPs) that prevent, minimize, or control pollutants.

- **System Monitoring** includes ongoing actions to demonstrate that UICs are operated in a manner that protects groundwater and meets WPCF permit conditions.

- **Evaluation and Response** describes the process and criteria used to identify, evaluate, and prioritize actions needed to protect groundwater and meet permit requirements.

- **Corrective Action** includes the processes to evaluate, rank, select, and implement appropriate corrective actions to address UICs that do not meet WPCF permit requirements.

This annual report describes the activities that occurred in FY11-12 in each of these four areas. Key accomplishments are summarized below and described in more detail in the body of the report.

Key Accomplishments

System Management

- Submitted quarterly *UIC Registration Database* updates to DEQ on September 1, 2011, December 1, 20101 March 1, 2012, and June 1, 2012.

- Continued to implement the *Systemwide Assessment Follow-up Actions* (submitted to DEQ December 1, 2006), specifically for UICs with inadequate separation distance from groundwater.

- Received and responded to 31 calls regarding spills located within or near an area where UICs are the primary method for stormwater disposal.

- Continued to provide oversight to ensure that commercial and industrial facilities comply with requirements under the Columbia South Shore Well Field Wellhead Protection Program.

- Continued to provide education, outreach, and technical assistance to residents and businesses affected by the Columbia South Shore Well Field Wellhead Protection Program, in conjunction with the Columbia Corridor Association and Columbia Slough Watershed Council.

- In accordance with the City's *Stormwater Management Manual* requirements, signed off on permits for approximately 853 source control measures (citywide) at sites with high-risk characteristics or activities.

- Conducted 3,092 erosion control-related inspections of private construction sites (citywide).

- Inspected 230 active public construction projects with erosion control components (citywide).

- Responded to 16 erosion control complaints.

- Through the Clean Rivers Education Program, involved approximately 15,000 students (citywide) in hands-on activities that teach them about the causes and effects of water pollution and how individuals can help protect water resources.

- Participated in numerous community activities and events involving stormwater management and watershed protection issues and actions.

- Continued to educate employees on permit requirements and groundwater protection.

- Continued to develop employee training and public education.

- Cleaned 1,784 sedimentation and sump manholes.

- Swept major arterials six times during the year.

- Continued evaluation of the review and approval process for private UICs to achieve a more streamlined and consistent registration process for both public and private UICs.

System Monitoring

- Submitted year 7 (October 2011 – 2012) UIC compliance and supplemental monitoring locations to DEQ on September 1, 2011.

- Implemented year 7 stormwater compliance and supplemental monitoring. Forty UIC locations were sampled in year 7 and tested for common and priority pollutants.

- Compiled and evaluated year 7 stormwater data. Notified DEQ of year 7 annual mean concentration exceedances of the permit's maximum allowable discharge limits (MADLs).

- Prepared and submitted the *Annual Stormwater Discharge Monitoring Report – Year 7 – October 2011 – May 2012* to DEQ (November 1, 2012).

- Performed a preliminary stormwater discharge trend analysis for the 7 years of data, using box plots to identify potential differences in pollutant concentrations.

- Prepared and submitted year 8 (October 2012 – May 2013) UIC monitoring locations to DEQ.

Evaluation and Response

- Reviewed UICs that previously received a "no further action" (NFA) designation to determine if previous NFA decisions are still protective of groundwater and if additional analyses need to be performed.

- Identified and evaluated additional UICs with potentially inadequate separation as new data became available. Performed compliance determinations on UICs identified to have potentially inadequate separation distance. Prioritized and reported newly identified Category 3 UICs to DEQ.

- Identified no new Category 4 UICs.

- Responded to year 7 MADL exceedances. During year 7 stormwater discharge monitoring, six common pollutants were detected during individual sampling events at concentrations above their respective MADLs: PCP, B(a)P, DEHP, lead, arsenic, and chromium.

Corrective Action

- Initiated design activities for Category 3 UICs, in accordance with the scope of the *Systemwide Assessment Follow-Up Actions* work plan.

- Removed nine UICs from the Category 3 UIC list through either corrective actions or compliance confirmation.

1 Introduction

1.1 Overview

The Oregon Department of Environmental Quality (DEQ) issued the City of Portland's Water Pollution Control Facility (WPCF) Permit for Class V Stormwater Underground Injection Control Systems (UICs) on June 1, 2005 (Permit No. 102830).

As required by Schedule D(1) of the WPCF permit, the City prepared a *UIC Management Plan* (UICMP) and submitted it to DEQ for approval on December 1, 2006. The UICMP describes the activities the City will implement throughout the permit term (June 1, 2005 – May 31, 2015) to protect groundwater and meet WPCF permit requirements. (See Section 1.2 for additional information about the UICMP.)

The WPCF permit also requires the City to submit a UICMP annual report that summarizes the status of implementing the UICMP and each of its components. Accordingly, this annual report summarizes activities that occurred during the seventh fiscal year of permit implementation (July 1, 2011 through June 30, 2012).

Table 1-1 summarizes the WPCF permit requirements for the annual report and identifies where the requirements are addressed in this annual report.

Table 1-1
Summary of WPCF Permit Annual Report Requirements[a]

Requirement	Permit Reference	Where Requirement is Addressed in Annual Report
General Requirements		
The Permittee must notify the Department of any changes in key personnel or areas of responsibility	D(5)(b)	Section 1.7
Unusual conditions encountered	D(15)(a)(i)	No unusual conditions were encountered.
Permit violations that may have occurred	D(15)(a)(ii)	No permit violations have occurred.
Minor and/or major permit modifications	D(15)(a)(vi)	Section 1.8
A demonstration of legal authority to implement the UICMP	D(15)(i)	Section 1.6
A discussion of significant land use changes that alter traffic volume, patterns of potential pollutants to a Permittee owned or operated public UIC. If the affected public UIC is a permanent trend monitoring point, then the Permittee must discuss the impact to the trend analyses and identify, for Department approval, a replacement UIC for trend analysis.	D(15)(j)	Included in *Annual Stormwater Discharge Monitoring Report - Year 7* (November 2012).
The status of implementing the UICMP and each of its components	D(15)(d)	Section 1.9
A discussion of any proposed changes to the UICMP or its components	D(15)(f)	Section 1.10
System Management		
Employee Training and Public Education program must be developed and implemented to educate Permittee's personnel and the public of the permit conditions and requirements	D(10)(d)	Section 2.4
…summarize any public UIC discovered or identified during or after the system-wide assessment	C(20)(b)	Section 2.2
A list of newly constructed …. public UICs during the reporting period	D(15)(k)	Section 2.2
A summary of BMPs implemented during the annual reporting period and the results of those BMPs and a description of BMPs to be employed during the next reporting year	D(15)(h)	Sections 2.2 through 2.6
Summarize the decommissioning of motor vehicle floor drains that discharge to public UICs.	C(13)(d)	Not applicable; no floor drains identified as draining to public UICs.
A summary of maintenance activities and supporting data.	D(15)(c)	Information on inspections, cleaning, and repair activities included in Section 2.5. O&M conducted as a response action is described in *Stormwater Discharge Monitoring Plan*.

Requirement	Permit Reference	Where Requirement is Addressed in Annual Report
System Monitoring		
Any other information, finding, condition, spills and/or action that is relevant to the management of the Permittee's public UICs or groundwater protection during operation of the public UICs	D(15)(n)	Sections 3 and 4
A summary and analysis of BMP monitoring accumulated during the annual reporting period	D(15)(l)	Section 3
Provide BMP monitoring results in the annual UICMP reports.	D(10)(c)(iv)	Section 3
Provide a brief overview summary of the monitoring results provided in the annual monitoring report for the reporting period.	D(15)(b)	Section 3
Include a comparison of the data to data from previous annual reporting periods.	D(15)(g)	Section 3
Violations (i.e., exceedances of permit established limits)	F(4)(d)	Section 3
Corrective Actions		
Identify Category 2 UICs.	C(12)(d) C(20)(c)	Identified in first annual report; update provided in Section 5
Identify Category 3 UICs.	C(12)(e)	Sections 4 and 5 and Appendix B.
Identify Category 4 UICs.	B(7)(j)	Sections 3, 4, and 5
Provide a summary of the UIC system management for the reporting period, including: (iii) Corrective actions taken to prevent further permit violations (iv) Other corrective actions taken or initiated	D(15)(a)	Section 5
An updated prioritized list of non-compliant public UICs with implementation and completion schedules	D(15)(a)(v)	Section 5 and Appendix B.
A discussion of any compliance response action taken during the reporting period	D(15)(e)	Included in *Annual Stormwater Discharge Monitoring Report – Year 7* (November 2012) and summarized in Section 5.
Provide a prioritized list of all non-compliant public UICs by category. Include a prioritized subset of the non-compliant public UICs that must be corrected during the CIP year.	D(15)(m)	Section 5
Any part of the UIC system placed under a Department Order for a regional corrective action and the nature of the Department Order (if applicable)	D(15)(a)(vii)	Section 5
[a] Where applicable, permit requirements are grouped by the UICMP categories developed by the City of Portland.		

1.2 Overview of the UICMP

As required by the WPCF permit, the UICMP identifies and discusses the best management practices (BMPs) the City will employ throughout the permit period to protect groundwater quality, support watershed health, and meet permit conditions. These include structural, non-structural, and institutional controls. In accordance with the permit, the UICMP also includes the following:

- UIC Registration Database
- Operations and Maintenance (O&M) Plan
- BMP Monitoring Program
- Employee Training and Public Education
- Spill Prevention and Pollution Control (SPPC) Plan
- Abandonment, Decommissioning, or Alteration of Public UIC Injection Systems Plan

The UICMP also meets the requirements of OAR 340-044-0018(3)(b)(C). These requirements specify that municipalities with 50 or more stormwater injection systems must prepare and implement a written UIC management plan that includes a systemwide assessment, system controls, monitoring, and a plan for record keeping and reporting.

The UICMP is organized into the following four major elements:

- **System Management** includes ongoing, programmatic activities (best management practices, or BMPs) that prevent, minimize, or control pollutants before they can be discharged to a UIC. BMPs are organized into the following five categories:

  - System Inventory and Assessment (SA)
  - Pollution Control (PC)
  - Education and Training (ET)
  - Operations and Maintenance (OM)
  - Policy and Regulation (PR)

- **System Monitoring** includes ongoing actions to demonstrate that UICs are operated in a manner that protects groundwater and meets WPCF permit conditions. It includes two types of monitoring: stormwater discharge monitoring and BMP monitoring.

Information collected through implementation of System Management and System Monitoring activities are used to identify program improvements or UICs that may require additional evaluation, response action, or corrective action.

- **Evaluation and Response** uses data and information from System Management (e.g., UIC location, depth to groundwater) and System Monitoring (e.g., results of maximum allowable discharge limits [MADL] monitoring) activities to assess UIC compliance status. It also defines the process and criteria used to identify, evaluate, and prioritize actions necessary to protect groundwater and meet permit requirements.

- **Corrective Action** addresses UICs shown to be non-compliant with WPCF permit requirements through the Evaluation and Response process. It includes the process used to evaluate, rank, select, and implement appropriate corrective actions. A variety of corrective actions are available, including options that do not involve construction (such as institutional controls or an assessment to demonstrate protectiveness), structural/engineering controls, and UIC closure.

1.3 Relationship of the UICMP to the UIC Program and UICMP Annual Reports

The UICMP is a comprehensive plan that describes the City's overall UIC program. It includes processes, tasks, and, where possible, implementation schedules. In many cases, however, it is difficult to determine implementation details years in advance because so many variables are involved. For that reason, UICMP implementation details will be included on a yearly basis in the UICMP annual reports. This annual report provides information about key accomplishments during FY11-12 (July 1, 2011 to June 30, 2012) and identifies activities planned for implementation in the next fiscal year (FY12-13).

1.4 Other UIC Program Documents

The WPCF permit requires the City to prepare a variety of documents that together describe the programmatic actions and management practices the City will implement to protect groundwater and meet permit requirements. Some of these documents are included as appendices to the UICMP, while others were submitted to DEQ separately. Table 1-2 shows the relationship of these documents to the four major UICMP elements.

1.5 Other Program Reporting Requirements

In addition to the UICMP annual report, the City will fulfill reporting requirements specified in the WPCF permit by submitting the following reports to DEQ:

- *Annual Stormwater Discharge Monitoring Locations* (due September 1 of each year)
- *Annual Stormwater Discharge Monitoring Report* (due November 1 of each year)
- Interim compliance reporting:
  - Detection of priority pollutant screen (PSS) pollutants
  - Exceedance of MADLs for individual sampling events
  - Exceedance of annual mean concentration for any MADL
  - Quarterly reports

Table 1-2
UIC Program Documents Related to UICMP Elements

UICMP Element/Document	Submittal Information
System Management	
Systemwide Assessment	Submitted July 15, 2006
UIC Registration Database	Submitted September 1, 2005 and updated quarterly
UIC Management Plan	Submitted December 1, 2006 DEQ Public Comment Period: June 24-July 24, 2008 DEQ Approval: October 6, 2008
UIC Management Plan Five Year Review Report	Submitted November 1, 2010
Operations and Maintenance Plan	Submitted December 1, 2006 (UICMP Appendix B) DEQ Public Comment Period: June 24-July 24, 2008 DEQ UICMP Approval: October 6, 2008
Spill Prevention and Pollution Control Plan	Submitted December 1, 2006 (UICMP Appendix C) DEQ Public Comment Period: June 24-July 24, 2008 DEQ UICMP Approval: October 6, 2008
Decommissioning Procedure for Underground Injection Control Systems	Draft submitted November 1, 2006 Final submitted December 1, 2006 (UICMP Appendix D) DEQ Public Comment Period: June 24-July 24, 2008 DEQ UICMP Approval: October 6, 2008 DEQ Permit Modification to update the Decommissioning Procedure (UICMP Appendix D): October 4, 2011
WPCF UIC Minor Permit Modification #1	DEQ Approval: November 6, 2006
WPCF UIC Major Permit Modification #1	DEQ Approval: December 10, 2009
WPCF UIC Minor Permit Modification #2	DEQ Approval: July 27, 2011
WPCF UIC Minor Permit Modification #3	DEQ Approval: July 14, 2011
WPCF UIC Major Permit Modification #2	DEQ Approval: October 4, 2011
WPCF UIC Major Permit Modification #3	DEQ Approval: April 19, 2012

UICMP Element/Document	Submittal Information
System Monitoring	
Stormwater Discharge Monitoring Plan (SDMP) - *Sampling Design Plan* - *Quality Assurance Project Plan (QAPP)* - *Sample Analysis Plan (SAP)*	Submitted July 15, 2005 Final submitted August 30, 2006 DEQ Public Comment Period: June 24-July 24, 2008 DEQ Approval: October 6, 2008 DEQ Permit Modifications to revise SDMP monitoring requirements: Modification #1: November 6, 2006 Modification #2: October 4, 2011 Modification #3: April 19, 2012
BMP Monitoring Program	Submitted December 1, 2006 (UICMP Appendix E) DEQ Public Comment Period: June 24-July 24, 2008 DEQ UICMP Approval: October 6, 2008
Annual Stormwater Discharge Monitoring Report – Year 1 (October 2005 - May 2006)	Submitted July 15, 2006
Annual Stormwater Discharge Monitoring Report – Year 2 (October 2006 - May 2007)	Submitted July 15, 2007
Annual Stormwater Discharge Monitoring Report – Year 3 (October 2007- May 2008)	Submitted July 15, 2008
Annual Stormwater Discharge Monitoring Report – Year 4 (October 2008- May 2009)	Submitted July 15, 2009
Annual Stormwater Discharge Monitoring Report – Year 5 (October 2009- May 2010)	Submitted July 15, 2010
Annual Stormwater Discharge Monitoring Report – Year 6 (October 2010- May 2011)	Submitted July 15, 2011
Annual Stormwater Discharge Monitoring Report – Year 7 (October 2011- May 2012)	Submitted November 1, 2012

UICMP Element/Document	Submittal Information
Evaluation and Response/Corrective Actions	
Corrective Action Plan (CAP)	Submitted July 15, 2006 DEQ Public Comment Period: June 24 – July 24, 2008 DEQ Approval: October 6, 2008
Corrective Action Plan Update	Submitted November 1, 2010
Corrective Actions: Category 1 Underground Injection Control Systems	Submitted July 15, 2005; completed July 2006
Compliance Determination Procedure	Submitted December 1, 2006 (UICMP Appendix F) DEQ Public Comment Period: June 24-July 24, 2008 DEQ UICMP Approval: October 6, 2008
Prioritization Procedure	Submitted December 1, 2006 (UICMP Appendix G) DEQ Public Comment Period: June 24-July 24, 2008 DEQ UICMP Approval: October 6, 2008
Evaluation and Response Guidelines	Submitted December 1, 2006 (UICMP Appendix H) DEQ Public Comment Period: June 24-July 24, 2008 DEQ UICMP Approval: October 6, 2008
Systemwide Assessment Follow-up Actions Workplan	Submitted December 1, 2006 DEQ Approval: October 6, 2008
Category 4 UIC Corrective Actions – Groundwater Protectiveness Demonstrations (UICs identified in sampling year 2)	Submitted May 30, 2008 DEQ No Further Action Determination – May 30, 2008
Category 4 UIC Corrective Actions – Groundwater Protectiveness Demonstrations (UICs identified in sampling year 3)	Submitted March 30, 2009 DEQ No Further Action Determination – May 30, 2009
Evaluation of Vertical Separation Distance – Groundwater Protectiveness Demonstration	Submitted May 27, 2008 DEQ Approval: June 5, 2008
Decision Making Framework for Groundwater Protectiveness Demonstrations	Submitted June 19, 2008 DEQ Approval: October 20, 2008
Category 3 UICs – Groundwater Protectiveness Demonstration – Vertical Separation Distance $\geq$5 Feet – No Further Action Request	Submitted June 18, 2008 DEQ Approval: October 6, 2008

Evaluation and Response/Corrective Actions (continued)	
Ubiquitous Pollutants – Groundwater Protectiveness Demonstration	Submitted July 17, 2008 DEQ Approval: October 6, 2008
UICs within Permit-Specified Well Setbacks – Groundwater Protectiveness Demonstration – No Further Action Request	Submitted July 24, 2008 DEQ Approval: October 6, 2008
City of Portland Parks UICs Groundwater Protectiveness Demonstration No Further Action Request	Submitted July 13, 2009 DEQ Approval: October 21, 2009
Category 2 UIC Corrective Actions Request for Timeline Extension City of Portland WPCF Permit No. 102830	Submitted February 19, 2010 DEQ Approval: February 25, 2010
Groundwater Protectiveness Demonstration and Request for Approval of 5- foot Separation Distance for Three Category 2 UIC Corrective Actions	Submitted May 14, 2010 DEQ Approval: August 5, 2010
Groundwater Protectiveness Demonstration and Request for Approval of 5-foot Separation Distance for New UICs	Submitted July 20, 2011 DEQ Approval: July 28, 2011
Groundwater Protectiveness Demonstration and Request for Approval of Maintaining Category 3 UICs (Non-compliant due to less than 5 feet of Vertical Separation Distance)+	Submitted May 31, 2012 DEQ Approval: June 14, 2012
Annual UICMP Reports	
Underground Injection Control Management Plan – Annual Report No. 1 - Fiscal Year 2005-2006 (July 1, 2005 – June 30, 2006)	Submitted December 1, 2006
Underground Injection Control Management Plan – Annual Report No. 2 - Fiscal Year 2006-2007 (July 1, 2006 – June 30, 2007)	Submitted November 1, 2007 DEQ Approval: October 14, 2008
Underground Injection Control Management Plan – Annual Report No. 3 - Fiscal Year 2007-2008 (July 1, 2007 – June 30, 2008)	Submitted November 1, 2008
Underground Injection Control Management Plan – Annual Report No. 4 - Fiscal Year 2008-2009 (July 1, 2008 – June 30, 2009)	Submitted November 1, 2009

Annual UICMP Reports (continued)	
Underground Injection Control Management Plan – Annual Report No. 5 - Fiscal Year 2009-2010 (July 1, 2009 – June 30, 2010)	Submitted November 1, 2010
Underground Injection Control Management Plan – Annual Report No. 6 - Fiscal Year 2010-2011 (July 1, 2010 – June 30, 2011)	Submitted November 1, 2011
Underground Injection Control Management Plan – Annual Report No. 7 - Fiscal Year 2011-2012 (July 1, 2011 – June 30, 2012)	Submitted November 1, 2012

1.6 Legal Authority

The Charter of the City of Portland grants broad authority to the City "to exercise any power or authority granted to the City by statute *** and [provides that the City] may do any other act necessary or appropriate to carry out such authority, or exercise any other power implied by the specific power granted." Such authority includes, among other things, "all powers commonly known as the police power to the same extent as the State of Oregon has or could exercise said power and make and enforce *** [as] necessary or appropriate water, local, police, sanitary and safety laws and regulations." *Chapter 2-105, Charter of the City of Portland, Oregon*

In addition, the Portland City Code addresses regulation of stormwater discharges, building requirements, zoning, erosion and sediment control and public improvements in Chapters 10, 17, 24, 29, and 33. Chapter 17.38 and 17.39 specifically address Drainage and Water Quality and Stormwater Discharges, respectively.

1.7 UIC Program Staff

1.7.1 Key Roles and Responsibilities

The WPCF permit designates the Bureau of Environmental Services (BES) as the bureau responsible for implementing the WPCF permit and for identifying and managing the regulatory and technical components of the UIC program citywide and across bureaus. Key staff roles and responsibilities for the UIC program are summarized in the November 1, 2010, *UIC Management Plan Five Year Review Report.*

1.7.2 Personnel Changes

There were no personnel changes in FY 2011-12.

1.8 Minor and/or Major Permit Modifications

In FY 2011-12, The City requested a major permit modification to change the monitoring requirements in the *Decommissioning Procedure and Stormwater Discharge Monitoring Plan*. DEQ issued major permit modification #2 on October 4, 2011. The changes include:

- Require sampling prior to decommissioning a UIC only in the following situations:
  - Visible evidence of contamination is observed in the UIC;
  - The UIC is located within 500 feet or the 2-year time of travel of a water supply well; or
  - The UIC catchment area encompasses a cleanup site with a confirmed release.

- Move BTEX (benzene, toluene, ethylbenzene, and xylenes) and nitrates from the common pollutant list to the priority pollutant screen list in Schedule A, Table 1 of the permit.

Also in FY 2011-12, the City requested a major permit modification to change the monitoring requirements in the *Stormwater Discharge Monitoring Plan (SDMP)*. DEQ issued major permit modification #3 on April 19, 2012. The changes include:

- Monitoring Requirements:
  - Reduce the number of storm events annually from five to three.
  - Drop Panel 6 in Years 8 and 9, resume in Year 10.
- Update of contract laboratory to Test America
- Update to project team responsibilities.
- Update to laboratory analytical procedures

In addition, the City requested two minor permit modifications to update some text and reporting submittal timelines. DEQ issued minor permit modification #2 and #3 in July 2011.

1.9 Status of Implementing the UICMP and Its Components

This annual report provides the status of implementing the UICMP and it components.

1.10 Proposed Changes to the UICMP or Its Components

The UICMP and its components were updated to reflect the permit modifications noted in Section 1.8 above.

1.11 City Budget and Funding

The City of Portland has invested more than $916 million in stormwater management services and facilities over the past 17 years.[1] The revenue requirements for FY11-12 totaled approximately $91 million, allocated as follows:

Major Program Category	Requirements	Percentage Share
Enforcement and Development Review	$ 6.7 million	7%
Watershed Program & Habitat Restoration	14.2 million	16%
Facilities Operations and Maintenance	23.2 million	25%
Capital Improvements*	47.0 million	52%
Total Revenue Requirements	**$ 91.1 million**	
* Includes debt service, facilities planning and engineering, construction engineering, and construction contracts.		

Eighty-seven percent of these revenue requirements are financed through direct monthly user fees. The remaining revenue sources include direct charges for new private development (system development charges), service charges, permit fees, and regulatory charges and penalties. More details on City revenues are provided below.

[1] The 17-year time period reflects the implementation period of the City's NPDES MS4 permit.

In FY12-13, the City plans to invest $100.1 million in stormwater management services and facilities. Direct monthly user fees will pay for 90 percent of these investments.

Stormwater Management Charges

City Council approves revised stormwater monthly user fees and stormwater system development charges (SDCs) at the start of each fiscal year. Monthly user fees are adjusted to reflect operating, maintenance, and capital costs of the City's sanitary sewer and drainage system. The rate adjustments are based upon cost of service principles, ensuring equity by charging ratepayers according to the amount of sewer and drainage service they use.

The following table reports the monthly single-family stormwater management charge and the monthly stormwater rate per 1,000 square feet of impervious area for the last five permit years:

	2007-2008	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**
Single-Family Residential Charge	$17.33	$18.55	$19.80	$21.79	$22.36
Residential rate per 1,000 square feet of impervious area	$7.22	$7.73	$8.25	$9.08	$9.08
Non-residential rate per 1,000 square feet of impervious area	$7.91	$8.43	$8.86	$9.66	$9.66

At the close of FY 11-12, City Council increased the monthly stormwater management charge for single-family residences from $22.36 to $23.90. The residential rate increased from $9.32 to $9.96 per 1,000 square feet of impervious surface per month, and the commercial rate increased from $9.97 to $10.55 per 1,000 square feet of impervious area per month.

Stormwater System Development Charges

The methodology for assessing system development charges (SDCs) for new development and significant redevelopment includes two components. One component represents the charge for stormwater facilities that handle runoff from individual properties. For FY11-12, this onsite portion was assessed based on $164.00 per 1,000 square feet of impervious area. Riparian properties that drain directly to the Columbia Slough, Columbia River, or Willamette River are exempt from this portion of the SDC. The other portion represents the cost of stormwater facilities that handle runoff from public rights-of-way. This portion was assessed based on the use of the transportation system, using road frontage and vehicle trips to allocate the costs. For FY11-12, the rates were $5.12 per linear foot and $2.68 per vehicle trip. At the end of FY11-12, City Council held the rates for stormwater system development charges to $164.00 per 1,000 square feet of impervious area, $5.12 per linear foot of frontage, and $2.68 per daily vehicle trip.

Discounts may be granted only for the "onsite" part of the charge for facilities constructed as part of new development. Discounts range from 80 percent for retention of the 100-year event to no discount for control of the 10-year storm.

1.12 Organization of the Annual Report

The remainder of this annual report contains the following sections:

Section 2: System Management, identifies citywide actions implemented under the five BMP categories to prevent, minimize, and control pollutants prior to infiltration. Where relevant, it also identifies projected main activities for FY12-13.

Section 3: System Monitoring, summarizes compliance monitoring [as detailed in the *Annual Stormwater Discharge Monitoring Report, Year 7, October 2011-May 2012* (November 1, 2012)] and BMP monitoring.

Section 4: Evaluation and Response, identifies evaluation and response actions conducted during FY11-12 and projected main activities for FY12-13.

Section 5: Corrective Actions, summarizes the corrective actions implemented during FY11-12 and projected main activities for FY12-13 to address UICs that do not meet permit requirements.

Appendix A identifies UICs identified, constructed, or removed during FY11-12.
Appendix B identifies the status of Category 3 UICs.
Appendix C identifies spills that occurred within areas serviced by UICs.

2 System Management

2.1 Overview

The System Management program element involves a series of actions, called best management practices (BMPs) that serve to prevent, minimize, and control pollutants in stormwater prior to discharge to a UIC. These BMPs are organized into the following five general BMP categories and are applied to the entire UIC system on an ongoing basis.

- System Inventory and Assessment
- Pollution Control
- Education and Training
- Operations and Maintenance
- Policy and Regulation

2.2 System Inventory and Assessment (SA)

Ongoing activities necessary to provide stormwater drainage infrastructure include the registration and construction of new UICs, replacement of existing UICs, and decommissioning of existing UICs. Ongoing system inventory and assessment activities are important to manage all known public UICs within the City of Portland and to assess drainage to each UIC for potential impacts to groundwater. This BMP category focuses on updating and refining information related to the location and physical characteristics of existing and new UICs. It fulfills two WPCF requirements:

- Develop and implement a comprehensive *UIC Registration Database*.
- Evaluate UICs relative to the factors that could present a risk to groundwater quality.

SA-1: Install, replace, retrofit, and decommission UICs as needed to provide public infrastructure for stormwater management. Maintain a comprehensive system inventory/data management system to register new UICs and track the location, physical characteristics, and status of all public UICs.

2.2.1 SA-1: Key Accomplishments for FY11-12

- Submitted quarterly *UIC Registration Database* updates to DEQ on September 1, 2011, December 1, 2011, March 1, 2012, and June 1, 2012.

- Identified 49 new public UIC[2] records in quarterly *UIC Registration Database* updates:

[2] Some UICs identified as new facilities in quarterly reports may not be recently discovered or newly constructed UICs. UICs may be identified as new as a result of database management. For example, correcting a database identifier for a facility from a sedimentation manhole to a UIC would trigger the UIC to appear as a new sump in the BES database, even though the facility itself is not new.

- 13 new UIC records in the September 1, 2011 database update
- 5 new UIC records in the December 1, 2011 database update
- 18 new UIC records in the March 1, 2012 database update
- 13 new UIC records in the June 1, 2012 database update

These UIC records are listed in Appendix A.

- Submitted decommissioning pre-closure reports for 2 UICs to DEQ in FY11-12.

- Removed 24 public UIC records in quarterly UIC *Registration Database* updates. The removals may have been decommissioned or identified through field investigations as not existing. These records are listed in Appendix A.

2.2.2 SA-1: Projected Main Activities for FY12-13

- Continue to regularly update the *UIC Registration Database* to include new and decommissioned UICs and other relevant information.

- Continue to submit quarterly *UIC Registration Database* updates to DEQ.

SA-2: Evaluate the location of public UICs relative to factors that may create adverse impacts to groundwater.

2.2.3 SA-2: Key Accomplishments for FY11-12

- Continued to implement *Systemwide Assessment Follow-up Actions,* specifically for UICs with inadequate separation distance from groundwater (see Sections 4 and 5).

2.2.4 SA-2: Projected Main Activities for FY12-13

- Continue implementation of remaining actions identified in the *Systemwide Assessment Follow-up Actions* workplan, specifically for UICs with inadequate separation distance from groundwater.

- Evaluate newly constructed or identified UICs for the four characteristics that may potentially create adverse impacts to groundwater. Incorporate the resulting information into the Evaluation and Response process, as appropriate.

- Integrate new system data into the *UIC Registration Database*, as appropriate.

2.3 Pollution Control (PC)

Activities and practices such as spills, illegal disposal, improper site management, and erosion can increase the discharge of pollutants to public UICs, with potential negative impacts to groundwater. This BMP category focuses on reducing such pollutant discharges from both public and private sites and activities. It fulfills two WPCF permit requirements:

- Implement a *Spill Prevention and Pollution Control (SPPC) Plan*.
- Identify activities conducted on commercial/industrial properties or SARA Title III facilities that may result in a violation of MADLs in stormwater discharging to a public UIC.

PC-1: Identify, prevent, minimize, and control activities and practices that can increase pollutant discharges to public UICs.

2.3.1 PC-1: Key Accomplishments for FY11-12

Spill Prevention and Pollution Control (SPPC) Plan

- Continued to implement the SPPC Plan (submitted in December 2006), which includes improving ongoing citywide pollution control activities to identify and control activities on private properties, including commercial/industrial properties and SARA Title III facilities where site activities (e.g., illegal disposal, improper storage and handling of materials, and erosion) could result in a violation of MADLs in stormwater discharging to a UIC.

Spill Protection-Citizen Response (SPCR) Team

SPCR staff responds immediately to emergency spills and investigates pollution complaints regarding spills, illegal disposal, improper site management, and erosion. Citizens can call in reports on a dedicated spill response hotline 7 days a week, and staff is available 24 hours a day to respond to spills, slicks, and other suspicious or inappropriate discharges. The program refers problems to other enforcement agencies as appropriate. The SPCR team also provides education and technical assistance to property owners to improve site management and address work practices that may impact stormwater discharges. SPCR staff support the entire City, including areas that use UICs for management of stormwater.

- In FY11-12, received 31 calls regarding spills located within or near an area where UICs are the primary method for stormwater disposal. Only five of these spills reached a UIC system. Upon inspection, all of the spills were determined to have minimal to no impact. All of the systems were cleaned and inspected as appropriate. Appendix C shows this information in table format, including date, release type, volume, location, identification of the closest UIC, and if the spill entered a UIC.

- The BES Spill Section continued a communication protocol with the Portland Fire Bureau that automatically pages the BES duty officer for a two-alarm event. Upon receiving the page, the duty officer contacts the Fire Bureau to identify if the duty officer is needed by the fire responders. Many events do not require the duty officer to respond to the site. In FY10-11, no two-alarm fire events resulted in pages to the duty officer.

- The BES Spill Section continued a communication protocol with the towing companies on the City of Portland towing contract. This notification ensures that BES will be contacted for auto fluid clean-up actions and for events that threaten to impact a stormwater facility (catch basin and downstream stormwater system). The duty officer may respond to events, depending on the reported information. Many events do not require the duty officer to respond. In FY11-12, 10 after-hours calls were received by the duty officer from towing companies. No enforcement actions were taken.

- BES and the Water Bureau continued to implement Columbia South Shore Well Field (CSSW) Protection Area signage. The signs list the BES spill response hotline number and read: "TO REPORT SPILLS CALL (503) 823-7180."

Regional Spill Response Committee

- This multi-agency committee was established in 1995 to consult and debrief on spill response activities throughout the region. It also provides staff training and coordination. Members include representatives from the Oregon Emergency Response System, Environmental Protection Agency Criminal Investigations (EPA CID), United States Coast Guard (USCG), Oregon Department of Environmental Quality (DEQ), Oregon Department of Transportation (ODOT), Clean Water Services (CWS), Water Environment Services (WES), Port of Portland, Portland Fire Bureau (PFB) Hazmat, City of Gresham, City of Milwaukie, City of Portland Water Bureau, and BES. BES chairs and attends all of the meetings.

Columbia South Shore Well Field Wellhead Protection Program

The City continued to implement the Columbia South Shore Well Field Wellhead Protection Program and reference manual for the City of Portland (and also in effect in Gresham and Fairview). The program focuses on groundwater protection through the implementation of mandatory spill containment BMPs and facility inspections for commercial and industrial facilities located within the Columbia South Shore Well Field Wellhead Protection Area (WHPA) overlay zone. The program also includes education and outreach efforts to affected residents and businesses and one-on-one technical assistance to businesses to help them comply with program requirements. Program requirements include structural and operational BMPs to reduce the occurrence of spills and minimize spill impacts.

- Conducted 397 inspections (includes re-inspections, regular fire inspections, and building final inspections) of businesses in the wellhead protection area (including Gresham and Fairview), and conducted 52 plan reviews.

- Promoted hazardous waste reduction and non-hazardous alternatives.

- Provided education and outreach to affected residents and businesses to help them comply with requirements of the program, in conjunction with the Columbia Corridor Association and Columbia Slough Watershed Council. Provided one-on-one technical assistance to 30 businesses; held one business workshop on program requirements, with 34 attendees.

Source Control Measures

The City's *Stormwater Management Manual* (SWMM) requires storm and sanitary source controls for site uses and characteristics that generate, or have the potential to generate, specific pollutants of concern. These requirements apply to new development projects, redevelopment projects, tenant improvements, and existing sites proposing new offsite discharges.

- The City conducted 150 land use reviews for source control measures at sites subject to SWMM requirements and issued permits for approximately 853 source control measures at sites with high-risk characteristics or activities. These numbers are citywide and are not limited to areas draining to UICs. (Note: When the SWMM is applied, drainage from high-risk areas is prohibited from draining to public UICs, and stormwater is managed onsite.)

- Continued review of Chapter 4 of the SWMM to identify potential source control requirement updates.

Erosion Control

- There were 4,556 active private construction permits subject to erosion control inspection (citywide). The Bureau of Development Services (BDS) conducted 3,092 erosion control-related inspections of private construction sites (citywide). (Even though a permit is active, there may be times when no activities are occurring that require erosion control inspection.) All sites with qualifying ground disturbance areas are inspected for temporary and permanent erosion control measures at the beginning and near or at completion of the project. In addition, interim checks are conducted during the course of regular building inspections.

- There were 230 active public construction projects (citywide) with erosion control components. In general, public sites are inspected daily during construction.

- Erosion control complaints (received through the complaint hotline or staff referrals) were tracked through the City's building permit tracking program, TRACS. A total of 16 cases were opened and responded to, with 14 cases closed (citywide).

- The pre-permit-issuance site meeting program was continued, where the applicant's team can choose to meet with staff onsite to discuss erosion control and other sensitive site issues. No applicants requested a pre-permit-issuance site meeting this fiscal year.

Prevention of Illegal Disposal

- Continued to implement disposal programs (curbside garbage, recycling, and yard debris and food scrap collection, as well as neighborhood cleanup collection events) to help prevent illegal dumping.

2.4 Education and Training (ET)

This BMP category fulfills the WPCF permit requirement for an employee training and public education program to educate City personnel and the public of the conditions and requirements of the permit.

ET-1: Implement public education activities that will raise awareness of groundwater protection and promote pollution prevention and control.

2.4.1 ET-1: Key Accomplishments for FY11-12

Clean Rivers Education Program

This program involves hands-on activities that teach students about the causes and effects of water pollution and what individuals can do to protect water resources. The programs also provide community service projects, teacher workshops, and curriculum resources. A number of the programs focus on stormwater and pollution prevention. An estimated 15,000 students participated in these activities citywide.

- Reached 7,974 students (grades K-12) with classroom programs that provide hands-on, interactive science education about stormwater and other environmental issues.

- Involved 4,339 students (K-12) in education field programs that offer watershed investigations and field assessments, stormwater tours, boat tours, and restoration experiences. Of these, 1,495 students combined education with natural area restoration service projects.

- Provided canoe trips to 543 students in the Columbia Slough and northern Willamette River watersheds. These included classroom studies and stewardship projects related to stormwater pollution.

- Checked out stormwater and watershed curriculum kits and field equipment to 9 Portland elementary and middle school teachers.

- Presented Stormwater - Soak it Up, a 75-minute classroom program for grades 4-12 and special interest groups, totaling 1,132 students and teachers.

- Presented Tours of Stormwater Solutions to 56 students. Students visited bioswales, stormwater planters, ecoroofs, porous pavement, and creative downspout disconnections.

- Presented Watershed Awareness to 475 students, grades 3-6. This program focuses on common non-point sources of pollution and pollution prevention.

- Continued the permanent storm drain curb marker program. Participating community and school volunteers also distributed doorhangers with stormwater pollution prevention messages and clean river tips to nearby residences. Number of participants: 43.

- Targeted schools with onsite stormwater facilities for extended outreach. Students learned about stormwater pollution prevention and their school's sustainable stormwater facilities and participated in maintenance activities for their facilities.

- Presented *Futures Working for Clean Rivers* career education programs to 32 students in the Willamette River and Johnson Creek watersheds.

- Continued quarterly Education Advisory Committee meetings to provide input and feedback for public education approaches and activities.

Stewardship Activities and Community Events

- Sponsored, co-sponsored, and participated in numerous community activities and events throughout the City's watersheds that involved stormwater management and watershed protection issues and actions (e.g., workshops, educational presentation and activities, training, restoration projects). Over 19,500 people took part in these activities.

Regional Coalition for Clean Rivers and Streams

- In spring 2012, the coalition conducted a public awareness campaign, including contributing to KOIN TV's "Do the Right Thing" campaign; placing advertisements with a variety of media sources, including radio, transit, social media, and outdoor advertising (billboards); and maintaining the Coalition's existing website and social media accounts. The number of people reached by the campaign's advertisements increased 74 percent over the previous year, and website visits increased by 27 percent.

Publications and Signage

- Included inserts in City water/sewer bills mailed to 214,000 customers:
  - April/May/June 2012: "Portland CSO Program 1991-2011" provided information about combined sewer overflow control, green stormwater management infrastructure.
  - June/July/August 2012: "Working for Clean Rivers and Healthy Watersheds" provided information about traditional sewer improvements (grey pipe system), green stormwater management infrastructure, and green infrastructure.

- Updated and posted fact sheets, brochures, and educational materials on the BES website about the Sustainable Stormwater Management Program (331,277 page views), Treebate incentive for planting yard trees 12,127 page views), Green Street Stewards program (4,665 page views), Ecoroof Incentive program (18,556 page views), native plant resources (5,286 page views), and Brownfield Program (1,585 page views).

- In May 2012, the Green Street Steward Program increased outreach with the assistance of a full-time AmeriCorps member. Through June 2012, the program has reached about 200 individuals through tabling events, knock-and-talks, and trainings. Nine people have volunteered to become Green Street Stewards and adopt 21 Green Street facilities.

- Distributed a variety of educational materials at community meetings and events.

Eco-logical Business Program

- Continued to work with the Regional Pollution Prevention Outreach Team (P2O Team), Automotive Eco-Logical Advisory Subcommittee, and Landscape Eco-Logical Advisory Subcommittee for the Portland metropolitan region to certify businesses under the Eco-Logical Business Program. Eco-Logical Business Program activities in FY2011-12 included:

  - Five landscape service businesses were newly certified and one was recertified, bringing the total number of certified landscapers to 23.

  - Nine new car wash firms were certified, for a total of 12.

  - No automotive shops were newly certified and one shop was lost from the program (bringing the total number of certified automotive shops to 39).

  - The program prepared for expansion into the stormwater facility maintenance sector and developed program materials for launch in the next program year.

  - Continued a promotional campaign to raise awareness and communicate the importance of supporting businesses that operate environmentally responsible business practices. The campaign used newspapers, the Redirect Guide, the Chinook Book, and local news advertising to promote Eco-Logical Businesses.

  - Continued to participate in local environmental events, including the annual sustainability fair and the greener home and garden show, to promote the use of certified businesses.

  - Provided an informational table at the annual Oregon Landscape Contractors Association conference, and continued program negotiations with the International Society of Arborists (ISA local chapter) and the Oregon Association of Nurseryman (OAN).

  - Coordinated with Portland State University on a grant to have students help with marketing and pollution reduction measurements related to Eco-Logical Business Program certification.

  - Released an inaugural newsletter for almost 200 interested certified firms and program partners to share program updates, highlight pollution prevention success stories, and collect information about materials use.

BEST Business Center

- The BEST Business Center assists Portland businesses with resources and information to help them green their operations. The center is run by the Bureau of Planning and Sustainability, in partnership with the Portland Water Bureau, Bureau of Environmental Services, Bureau of Transportation, Metro, Portland General Electric, Pacific Power, and the Energy Trust of Oregon. BEST conducted on-site assessments for 146 businesses this year.

- The BEST Business Center administers the annual BEST Awards, which recognize Portland's most sustainable businesses. Seven businesses received the BEST Award for their efforts to reduce waste and toxics, conserve energy, develop green products and services, and promote sustainable food systems.

- The BEST Business Center also administers Sustainability at Work Certification, recognizing businesses that have taken measurable steps to reduce their greenhouse gas emissions through energy efficiency, renewable power, transportation incentives, water conservation, recycling and waste prevention. To date, 56 businesses have been certified.

ET-2: Conduct employee training to ensure that UICs on public property are designed, constructed, operated, and closed in ways that meet WPCF permit requirements and protect groundwater.

2.4.2 ET-2: Key Accomplishments for FY11-12

- Continued to educate employees on groundwater protection and permit requirements.

- Continued to develop employee training and public education.

- Provided ongoing coordination with BES Source Control. Responded to UIC site-specific questions and programmatic issues related to *Stormwater Management Manual* review and implementation.

- Conducted training for new duty officer staff on the BES spill response hotline and staff response duties.

2.4.3 ET-2: Projected Main Activities for FY12-13

- Continue to develop information focused on groundwater protection and UICs for City staff.

- Continue to coordinate with BES engineering and construction groups to identify any UIC process issues and data gaps.

- Continue to coordinate with BDS development review staff on UIC design standards and on the review and approval process for UICs registered on private property.

- Continue to work with other bureaus to coordinate with and provide training on source control, operations and maintenance, spill prevention and response, and development review.

- Continue evaluation of existing training approaches and schedules and revise/update as needed.

2.5 Operations and Maintenance (OM)

Operations and maintenance BMPs for City UICs are important in order to both remove pollutants from UICs (e.g., UIC cleaning) and prevent pollutant discharges into UICs (e.g., street sweeping). This BMP category identifies O&M practices both for UICs located in City-managed rights-of-ways and for UICs on other City-owned property. It fulfills the WPCF permit requirement to implement an O&M Plan for public UICs.

OM-1: Implement operations and maintenance practices to remove or prevent pollutants from entering public UICs located in City-managed rights-of-ways and on other City-owned property.

2.5.1 OM-1: Key Accomplishments for FY11-12

Facility Maintenance

- Implemented the UICMP *Operations and Maintenance Plan*.

- Continued discussions with other City bureaus to standardize operations and maintenance procedures for UICs on City property, based on the O&M templates established in the City's *Stormwater Management Manual*.

- Made debris screen/inlet inspection/maintenance visits to 353 locations citywide (multiple visits to some locations after major rain events). (This number includes, but is not limited to, UIC-specific visits.)

- Cleaned approximately 12,082 catch basins and inlets (citywide).

- Cleaned 1,784 sedimentation and sump manholes.

- Repaired or constructed 200 inlets and inlet leads and 4,061 linear feet of culvert (citywide).

- Continued to implement retrofits to the existing storm drainage system, as identified during routine operations and maintenance activities. Completed conversion of a total of 2,180 linear feet from ditches to swales or porous shoulders (citywide).

- Continued to evaluate UIC stormwater quality monitoring data to evaluate the relationship between stormwater quality, maintenance frequency, and traffic volumes.

Street Sweeping

- Swept major arterials six times during the year.

Portland Bureau of Transportation Maintenance Operations (PBOT Maintenance Operations) BMPs

- Continued to implement BMPs within the right-of-way to protect water quality, including:
  - Following ODOT's *Routine Road Maintenance Water Quality and Habitat Guide Best Management Practices.*
  - Using the trenchless liner repair system.
  - Using bio-pillows for sediment control on impervious surfaces to trap sediment during all sediment-disturbing activities.
  - Using low-disturbance sign installation methods to avoid or minimize digging.
  - Using mild cleaners, with no solvents, to clean signs.
  - Monitoring weather conditions during asphalt grinding
  - Hand-applying asphalt where necessary to prevent these materials from entering the storm drain system
  - Using water-based asphalt emulsions and biodegradable asphalt release agents.

- Continued to pilot test alternative methods, products, and practices to reduce pollutant discharges.

Site-specific O&M actions conducted as a response action are discussed in Section 4: Evaluation and Response.

2.5.2 OM-1: Projected Main Activities for FY12-13

- Continue to use UIC stormwater quality monitoring data to evaluate the relationship between stormwater quality, maintenance frequency, and traffic volume. Where appropriate, adjust current O&M Plan maintenance schedules and targets.

- Continue to standardize operations and maintenance procedures for UICs on City property, based on the O&M templates established in the *Stormwater Management Manual*. Develop applicable tracking systems.

2.6 Policy and Regulation (PR)

The development of policies, codes, and administrative rules is a key element in providing long-term protection of groundwater. This BMP category includes City initiatives, such as policies that promote the implementation of green streets as alternatives or retrofits for UICs, as well as code and administrative rules pertaining to groundwater protection.

PR-1: Review and modify City policies, codes, and regulations to enhance groundwater protection.

2.6.1 PR-1: Key Accomplishments for FY11-12

Development Review Process and UICs

- Continued evaluation of the review and approval process for private UICs, identifying issues and process gaps and identifying strategies for a more streamlined and consistent registration process for both public and private UICs.

Policy Initiatives

- There are inconsistencies between water supply well construction rules and UIC rules. The City will resume discussions with the Oregon Water Resources Department (OWRD) and DEQ about this issue when those agencies initiate revisions to the UIC rules.

Regional Coordination

- The City participated in the ACWA (Association of Clean Water Agencies) Groundwater Committee and participated in the DEQ regional WPCF permit template development process.

Stormwater Management Manual Revision

- The last revision of the *Stormwater Management Manual* occurred in October 2008. UIC updates or changes will be provided for the next revision. In FY11-12, reviewed Chapter 4 to identify potential source control requirement updates.

Land Acquisition

- The Grey to Green Land Acquisition Program acquired 203 acres of natural area.

2.6.2 PR-1: Projected Main Activities for FY12-13

- Participate in the UIC rules revision process (OAR 340-044 and 340-071) when initiated by DEQ and OWRD (currently targeted for early 2013).

- Continue to coordinate the review and approval process for private UIC registrations and development issues.

3 System Monitoring

The System Monitoring program element involves ongoing UIC monitoring activities conducted to demonstrate that UICs are operated in a manner that meets WPCF permit requirements and protects groundwater as a drinking water resource. System Monitoring includes two types of monitoring:

- Stormwater discharge monitoring of a representative subset of UICs, as identified in the *Stormwater Discharge Monitoring Plan* (SDMP). This is subsequently referred to as compliance monitoring.

- Monitoring to determine the effectiveness of BMPs in controlling pollutant discharges to UICs and to identify technologies that can be used to improve stormwater quality or successfully implement corrective actions, as identified in the *BMP Monitoring Program*.

3.1 Compliance Monitoring

3.1.1 Key Accomplishments for FY11-12 [3]

- Submitted year 7 (October 2011 – 2012) UIC compliance and supplemental monitoring locations to DEQ on September 1, 2011. Supplemental monitoring locations were selected to assess the quality of stormwater discharged to UICs located near commercial and industrial facilities.

- Implemented year 7 stormwater compliance and supplemental monitoring. Forty UIC locations were sampled in year 7 and tested for common and priority pollutants as defined by the permit.

- Compiled and evaluated year 7 stormwater data. Notified DEQ of year 7 annual mean concentration exceedances of the permit's maximum allowable discharge limits (MADLs) on June 25, 2012.

- Prepared and submitted the *Annual Stormwater Discharge Monitoring Report – Year 7 – October 2011 – May 2012* to DEQ (November 1, 2012). The report results are summarized in Section 3.1.2, below.

- Performed a preliminary stormwater discharge trend analysis for the 7 years of data, using box plots to identify potential differences in pollutant concentrations.

- Prepared and submitted year 8 (October 2012 – May 2013) UIC monitoring locations to DEQ on August 31, 2012, including 15 compliance monitoring locations selected in accordance with permit modification #3 (issued by DEQ on April 19, 2012). Because of annual

[3] See the *Annual Stormwater Discharge Monitoring Report – Year 7 – October 2011 – May 2012* (November 1, 2012) for detailed monitoring results.

geometric mean exceedances for pentachlorophenol,di(2-ethylhexyl)phthalate (DEHP), and benzo(a)pyrene MADLs, four additional sites from year 7 will be sampled again in year 8.

3.1.2 UIC Stormwater Year 7 Monitoring Summary

The City of Portland's UIC monitoring program was implemented in accordance with the final SDMP. The monitoring program was designed to be representative of the estimated 9,000 City-owned/operated UICs. Forty UIC locations were sampled in year 7, including:

- 30 UICs selected to implement the required year 7 monitoring (i.e., compliance monitoring) described in the SDMP:
  - Panel 2 (15 rotating UIC locations sampled in permit years 2 and 7)
  - Panel 6 (15 fixed UIC locations sampled in permit years 1 through 10)
- Voluntary supplemental panel 6 (SP6; 10 supplemental UICs located near commercial and industrial sites)

Four carry-over UICs from Year 6 were not monitored for a second year in year 7 because they were identified as Category 4 UICs after only one year of monitoring.

UIC monitoring locations were selected on the basis of two traffic flow categories: <1,000 trips per day (TPD) and ≥1,000 TPD. Year 7 locations (i.e., Panels 2 and 6, and SP6) included 19 UIC locations in the <1,000 TPD category and 21 locations in the ≥1,000 TPD category.

Year 7 Results[4]

Five sampling events were completed, as required, between October 2011 and May 2012. Stormwater discharge samples were analyzed for common pollutant analytes (e.g., metals, volatile organic compounds, semivolatile organic compounds, and pesticides) as defined by the permit. Testing of priority pollutant screen (PPS) analytes is not required in permit year 7; however, three PPS analytes are reported because they were detected during analysis of the common pollutants by the U.S. Environmental Protection Agency (EPA) test methods.

- All nine common pollutants and two of three PPS analytes (2,4-D, picloram) were detected in year 7.

- Twenty-three ancillary pollutants (i.e., analytes derived from the analytical methods for common pollutants) were generally detected at low concentrations. The nine ancillary pollutants detected at the highest frequencies (>50%) during all individual sampling events are polycyclic aromatic hydrocarbons (PAHs). PAHs are expected in urban rights-of-way. Generally, sources include fresh and used petroleum products associated with motor vehicle combustion, exhaust, and wear and tear; they also include other sources such as wood preservatives and cigarette filters.

[4] A full discussion of monitoring methodology and results can be found in the Annual Stormwater Discharge Monitoring Report—Year 7 (November 2012).

Maximum Allowable Discharge Limit (MADL) Exceedances

- Six common pollutants [pentachlorophenol, di(2-ethylhexyl)phthalate (DEHP), benzo(a)pyrene, arsenic, chromium, and lead] were detected in 22 UICs in year 7 at concentrations above their respective MADLs in at least one sample. Detected concentrations of other common and PPS analytes were below their respective MADLs. The City reported MADL exceedances to DEQ, as required by the permit.

Annual Geometric Mean Concentrations

- Nine UIC locations had annual geometric mean concentrations that exceeded the MADL for at least one pollutant. Six of the nine UIC locations exceeded the MADL (1.0 µg/L) for pentachlorophenol, five of which had been identified as Category 4 UICs in previous years; two UICs exceeded the MADL (6.0 µg/L) for DEHP; and one UIC exceeded the MADL (0.2 µg/L) for benzo(a)pyrene. Annual geometric means for UICs exceeding a MADL ranged from 1.07 to 1.82 µg/L for pentachlorophenol, 7.524 to 8.456 µg/L for DEHP, and 0.611 µg/L for benzo(a)pyrene, all only slightly above their respective MADLs.

- The annual geometric mean is calculated for pollutants detected at a concentration >50 percent of the MADL for an individual sampling location in at least one sampling event; therefore, geometric means were also calculated for arsenic, chromium, and lead (at one UIC location for both arsenic and chromium and eight UIC locations for lead). The annual geometric means for these locations were 2.089 µg/L for arsenic, 7.4 µg/L for chromium, and ranged from 5.817 to 20.565 µg/L for lead, well below each pollutant MADL (10 µg/L, 100 µg/L, and 50 µg/L, respectively). Annual geometric mean concentrations were not calculated for any other pollutants because their concentrations were <50 percent of the MADL.

Preliminary Trend Analysis

The following general observations were made:

- Concentration ranges for each pollutant are similar for years 1 through 7

- Patterns for both traffic categories have similar concentration ranges from year to year

- Annual medians and geometric mean concentrations, in general, are <50 percent of their MADLs

- The ≥1,000 TPD traffic category has higher median and geometric mean concentrations than the <1,000 TPD traffic category for the pollutants evaluated.

Year 7 Response Actions

Source investigations were performed for four UICs in a variety of commercial neighborhoods because of elevated results, mainly for DEHP, but also for a few additional pollutants, including pentachlorophenol, benzo(a)pyrene, and lead. One site investigation resulted in a warning letter to the property owner and will require additional follow-up. Three of the four UICs with

elevated results (including the UIC near the site that received a warning letter) will be monitored again in Year 8.

Category 4 UICs

- No new Category 4 UICs were identified in year 7.

- Seventeen locations have been identified as Category 4 UICs based on sampling results during years 1 through 7. Four of the 17 UICs were identified as Category 4 UICs after only one year of monitoring in year 6, in lieu of sampling for a second consecutive year.

- Five of the 17 UICs that were identified as Category 4 UICs in previous years exceeded MADLs again in year 7:

  - Two UICs (P6_1 and P6_14) were identified as Category 4 UICs for pentachlorophenol in year 2 and have been addressed through corrective actions. These two locations are part of stationary panel 6 and have been sampled yearly through year 7 and will be sampled again in year 10.

  - Three UICs (P2_5, P2_13, P2_14) were identified as Category 4 for pentachlorophenol in year 3 and have been addressed through corrective actions.

Additional Monitoring

- In addition to the previously identified Category 4 UICs, four UICs had annual geometric mean concentrations that exceeded the MADL for a pollutant for the first time in year 7:

  - Two UICs (P6_8 and SP6_4) exceeded for DEHP.

  - One UIC (SP6_7) exceeded for pentachlorophenol.

  - One UIC (SP6_10) exceeded for benzo(a)pyrene.

  These four locations will be sampled again in year 8.

3.1.3 Projected Main Activities for FY12-13

- Select UIC locations for year 8 monitoring (i.e., Panel 3). (UIC locations were submitted to DEQ on August 31, 2012.)

- Implement year 8 UIC compliance monitoring in accordance with permit modification #3 (issued by DEQ on April 19, 2012).

- Document, analyze, and report results of the 2012-2013 (year 8) stormwater monitoring in the *Annual Stormwater Discharge Monitoring Report – Year 8*. That report will be

submitted to DEQ by November 1, 2013 (per DEQ Permit Action Letter dated July 14, 2011).

- Continue to work with DEQ to demonstrate through the SDMP-required compliance monitoring that discharges to public UICs meet permit MADLs and are protective of groundwater quality (see Section 4).

- Initiate planning and selection of year 9 compliance and year 8 carryover locations.

- Notify DEQ of year 9 stormwater monitoring locations by September 1, 2013.

4 Evaluation and Response

The Evaluation and Response program element uses data and information from System Management (e.g., UIC location, depth to groundwater) and System Monitoring (e.g., results of stormwater discharge monitoring) activities to assess UIC compliance status. It also defines the process and criteria used to identify, evaluate, and prioritize actions necessary to protect groundwater and meet permit requirements.

4.1 Decision Making Framework for Groundwater Protectiveness Demonstrations

During FY 07-08, a Groundwater Protectiveness Demonstration (GWPD) tool was developed by the City and approved by DEQ. This tool is a solute transport spreadsheet model that evaluates the reduction of stormwater pollutant concentrations entering the UIC by unsaturated soil before the infiltrated stormwater reaches groundwater. The tool is used to evaluate the fate and transport of pollutants in different geologic units by modifying the appropriate physical and chemical input parameters to characterize the properties of the geologic materials and pollutants.

In June 2008, the City submitted the *Decision Making Framework for Groundwater Protectiveness Demonstrations,* to DEQ, which includes the protocols for applying the GWPD tool to UICs that fall within four specific categories identified during permit negotiations and permit implementation:

- UICs with inadequate separation distance
- UICs located within permit-specified setbacks from domestic or public water wells
- UICs with stormwater concentrations exceeding permit-specified MADLs at end-of-pipe where stormwater enters the UIC
- UICs that have ubiquitous stormwater pollutants (e.g., PCP in stormwater)[5]

The decision making framework includes a groundwater fate and transport analysis, which demonstrates that identified domestic and public water wells located within permit UIC setbacks (i.e., Category 2 and Category 3 UICs, both non-compliant because of inadequate vertical separation distances) are protected pending the completion of corrective actions. DEQ approved the *Decision Making Framework for Groundwater Protectiveness Demonstrations* on October 20, 2008.

[5] Ubiquitous pollutants are defined as "pollutants frequently detected in stormwater as a result of their widespread, non-point source origin, such as PCP associated with treated wood utility poles found throughout the urban environment" (*Ubiquitous Pollutants Groundwater Protectiveness Demonstration,* submitted to DEQ July 17, 2008). They have also been defined as "a pollutant detected in the City's Year 1 and Year 2 Stormwater Discharge Monitoring Program at a detection frequency of > 75% and with a concentration of ≥50% of the MADL (*Decision Making Framework for Groundwater Protectiveness Demonstrations,* submitted to DEQ July 19, 2008).

The City applied the decision-making framework to evaluate the four categories identified above. As a result, the City received "no further action" (NFA) determinations for UICs identified within those categories. Specific details about the framework development and applications for NFAs can be found in *UICMP Annual Reports No. 3, 4, 5, and 6* and in the reports listed in Table 1-2.

As part of this UICMP annual report, UICs that received an NFA designation in each of the four categories were reviewed to verify that the previous NFA decisions are still protective of groundwater and ensure that additional analyses do not need to be performed. The following key assumptions of the GWPD were used as the basis of the review:

- **Vertical separation distance:** Separation distances are calculated using the most current total UIC depth and USGS-generated depth to groundwater estimates for the Portland area. If the depth-to-groundwater estimates are revised or modified, separation distances must be recalculated, and the minimum 5-foot separation distance must be verified.
- **Results of the stormwater discharge monitoring program**: Results must be reviewed to ensure that:
  - Pollutants detected are similar in concentration and frequency of detection to those identified in Year 1 – Year 7 monitoring.
  - New pollutants of interest are not identified.
  - Significant increases in pollutant concentrations or pollutant concentration trends are not identified.

Sections 4.2 to 4.4 provide the results of this review.

4.2 Further Evaluation of UIC Separation Distance

The WPCF permit requires that UICs more than 5 feet deep must have a minimum separation distance of 10 feet between the bottom of the UIC and seasonal high groundwater. UICs less than 5 feet deep must have a minimum separation distance of 5 feet. See section 5.1 of this report for a current summary of UICs with inadequate vertical separation distance.

4.2.1 Decision Verification

During FY11-12, the City identified four new Category 3 UICs (APV741, APV742, APV622, R00309). Construction details are provided in Appendix B, Table B-3.

Of the list of Category 3 UICs identified in *UICMP Annual Report No.6*, nine UICs have been removed (ADU768, ADT730, ADV121, ADU754, ACK560, ACK562, ACK563, ACK564, ADU769) through either the completion of a corrective action or determination of permit compliance (see Appendix B, Table B-2).

Section 5 of this report provides further details about the four new additions and the nine removals from the Category 3 list, as well as the overall scope and schedule for the remaining Category 3 UICs.

For the UICs previously identified as having a vertical separation distance between $\geq$ 5 feet and < 10 or located in a City of Portland park, and that previously received an NFA confirmation, the decision verification process was applied (as required annually, per the permit) through the steps below. (Refer to Appendix B of *Annual Reports No.5* and No.6 for the complete list of UICs that have received NFA confirmation.)

- **Verification of vertical separation distance:** USGS depth to groundwater data were used in combination with existing construction information to calculate vertical separation distance between the bottom of the UIC and seasonal high groundwater. All locations previously identified as having > 5 feet and < 10 feet vertical separation distance were confirmed and are reported in section 5 of this report. All vertical separation distances are reported and updated as part of the UIC database quarterly updates.
- **Verification of stormwater discharge monitoring results:** In general, pollutants detected in year 7 monitoring are similar to detections, frequency, and concentration ranges in years 1 - 6. Common pollutants detected in years 1 - 7 data are generally at low concentrations and below their respective MADLs. Concentration ranges for pentachlorophenol, DEHP, and lead are similar for years 1 - 7. Concentrations are generally low and within narrow ranges at individual UIC locations. Concentrations for the $\geq$1,000 trips per day (TPD) traffic category appear to be slightly higher than the <1,000 TPD traffic category in years 1- 7.

  In addition to the first UIC that was non-compliant for benzo(a)pyrene in Year 6, the City decided to identify four UICs as Category 4 UICs after only one year of monitoring. Three of these four exceeded not only for PCP, but also for DEHP; however, they were within levels outlined in the *Decision Making Framework for Groundwater Protectiveness Demonstrations* as protective of groundwater.

  For details, refer to *Annual Discharge Monitoring Report – Year 7 (October 2011 – May 2012).*

4.2.2 Key Accomplishments for FY11-12

- Continued evaluation and selection of corrective action alternatives for UICs determined to be non-compliant with the permit (see Section 5).

- Identified and evaluated additional UICs with potential inadequate separation as new data became available. Performed compliance determinations on UICs identified to have potentially inadequate separation distance. Reported and prioritized newly identified Category 3 UICs to DEQ in accordance with the permit requirements (see Section 5).

4.2.3 Projected Main Activities for FY12-13

- Continue identification and evaluation of UICs as new data become available.

- Perform compliance determinations on any new UICs identified with potentially inadequate separation distance. Report and prioritize any newly identified Category 3 UICs to DEQ in accordance with the permit, as appropriate.

- Apply the protocols in the *Decision Making Framework for Groundwater Protectiveness Demonstrations* to any new UICs identified with vertical separation distances >5 feet to determine if groundwater is protected or corrective action is required.

4.3 Further Evaluation of Stormwater Pollutants Exceeding MADLs

The WPCF permit requires the City to notify and report stormwater discharges that exceed the MADLs defined in Table 1 of the permit. Notification and reporting requirements of individual stormwater event and annual mean MADL exceedances are described in the *Quality Assurance Project Plan* (QAPP; City of Portland, 2006). In addition, annual monitoring reports must include (per Permit Schedule B, Section 7) identification and discussion of any exceedance of an individual storm event MADL or annual mean MADL concentration, including:

(1) Any potential cause of the exceedance, to the extent practicable and if known; and

(2) Actions taken during the wet season to reduce the concentration of the pollutant of concern.

Actions taken to assess the potential cause of the exceedance were evaluated in general accordance with *UICER Guideline No. 2: MADL Exceedances* and are described below. Actions taken during the wet season to reduce concentrations are described as response actions in Section 4.5.

4.3.1 Decision Verification

Thirteen UICs were previously identified as Category 4 UICs and received NFAs based on groundwater protectiveness demonstrations. (Groundwater protectiveness demonstrations for NFA will be performed in FY12-13 for the four UICs identified as Category 4 UICs after one year of monitoring.) The decision verification process was applied through the following steps:

- **Verification of vertical separation distance:** USGS depth to groundwater data (as described in Section 4.2) were used in combination with existing construction information to calculate vertical separation distance between the bottom of the UIC and seasonal high groundwater for the seven Category 4 UICs with NFA designations. Based on the updated USGS depth to groundwater information, all nine locations still have >10 feet vertical separation distance and meet the conditions of the groundwater protectiveness demonstration.

- **Verification of stormwater discharge monitoring results:** In general, pollutants detected in year 7 monitoring are similar to detections, frequency, and concentration

ranges in years 1 - 6. Common pollutants detected in years 1 - 7 data are generally at low concentrations and below their respective MADLs. Concentration ranges for pentachlorophenol, DEHP, and lead are similar for years 1 - 7. Concentrations are generally low and within narrow ranges at individual UIC locations. Concentrations for the ≥1,000 trips per day (TPD) traffic category appear to be slightly higher than the <1,000 TPD traffic category in years 1- 7.

In addition to the first UIC that was non-compliant for benzo(a)pyrene in Year 6, the City decided to identify four UICs as Category 4 UICs after only one year of monitoring. Three of these four exceeded not only for PCP, but also for DEHP; however, they were within levels outlined in the *Decision Making Framework for Groundwater Protectiveness Demonstrations* as protective of groundwater.

For details, refer to *Annual Discharge Monitoring Report – Year 7 (October 2011 – May 2012).*

4.3.2 Key Accomplishments for FY11-12

- Reported MADL exceedances to DEQ within 7 days following receipt of validated analytical data for five storm events. Six constituents exceeded a MADL for at least one event during Year 7 monitoring. Thirty-five sample concentrations from 15 UIC locations exceeded the MADL of 1.0 µg/L for PCP. Three individual sample concentrations from three UIC locations exceeded the MADL of 10 µg/L for lead. Sixteen individual sample concentrations from ten UIC locations exceeded the MADL of 6.0 µg/L for DEHP. Seven individual sample concentrations from three UIC locations exceeded the MADL of 0.2 µg/L for benzo(a)pyrene. One individual sample concentration from one UIC location exceeded the MADL of 10 µg/L for arsenic. One individual sample concentration from one UIC location exceeded the MADL of 100 µg/L for chromium.

- No new Category 4 UICs were identified in FY11-12.

4.3.3 Projected Main Activities for FY12-13

- Implement year 8 stormwater compliance monitoring, and report MADL exceedances in accordance with the permit and QAPP.

4.4 Further Evaluation of UICs near Domestic Wells

The WPCF permit requires that stormwater discharges meet the MADLs defined in Table 1 of the permit for UICs that are located:

- Less than 500 feet from a domestic well;
- Within a 2-year time of travel of a public water well; or
- Less than 500 feet from a public water well without a delineated time of travel.

Stormwater quality discharge limits established in the WPCF permit are designed to protect groundwater as a drinking water resource in accordance with OAR 340-040.

4.4.1 Decision Verification

Previously, 398 UICs were identified within the permit-specified setbacks from confirmed and unconfirmed drinking water wells. These locations have received NFAs based on groundwater protectiveness demonstrations. The decision verification process was applied through the following steps:

- **Verification of vertical separation distance:** USGS depth-to-groundwater data were used in combination with existing construction information to calculate vertical separation distance between the bottom of the UIC and seasonal high groundwater. Based on that information, 20 locations were identified with < 5 feet vertical separation distance and have been identified for corrective actions, as described in section 5. The remaining 378 locations were determined to have > 5 feet vertical separation distance and still meet the conditions of the groundwater protectiveness demonstration.

- **Verification of stormwater discharge monitoring results:** In general, pollutants detected in year 7 monitoring are similar to detections, frequency, and concentration ranges in years 1 - 6. Common pollutants detected in years 1 - 7 data are generally at low concentrations and below their respective MADLs. Concentration ranges for pentachlorophenol, DEHP, and lead are similar for years 1 - 7. Concentrations are generally low and within narrow ranges at individual UIC locations. Concentrations for the ≥1,000 trips per day (TPD) traffic category appear to be slightly higher than the <1,000 TPD traffic category in years 1- 7.

  In addition to the first UIC that was non-compliant for benzo(a)pyrene in Year 6, the City decided to identify four UICs as Category 4 UICs after only one year of monitoring. Three of these four exceeded not only for PCP, but also for DEHP; however, they were within levels outlined in the *Decision Making Framework for Groundwater Protectiveness Demonstrations* as protective of groundwater.

  For details, refer to *Annual Discharge Monitoring Report – Year 7 (October 2011 – May 2012).*

4.4.2 Key Accomplishments for FY11-12

- Implemented corrective action engineering pre-design and design activities on Category 3 UICs identified as having inadequate separation distance and located near domestic wells.

4.4.3 Projected Main Activities for FY12-13

- Collect year 8 stormwater quality data. Compliance stormwater monitoring data will be used to evaluate the quality of stormwater entering UICs and confirm that groundwater is protected. Projected timeline: October 2012 – May 2013.

- Evaluate stormwater quality data. Continue evaluation of the results of the annual compliance monitoring program (described in the SDMP). Projected timeline: October 2012 – November 1, 2013.
  - Identify pollutants, if any, that exceed permit limits during individual sampling events or annual geometric mean concentration (see Section 4.3).
  - Verify the results of the *UICs within Permit-Specified Well Setbacks - Groundwater Protectiveness Demonstration – No Further Action Request.* This document was prepared by the City of Portland Bureau of Environmental Services and submitted to DEQ for approval in July 2008. DEQ's approval was obtained on October 6, 2008.

- Continue corrective action engineering design activities on Category 3 UICs identified as having inadequate separation distance and located near domestic wells. The City is actively evaluating corrective action alternatives for these UICs to provide adequate separation distance, meet permit requirements, and protect groundwater in accordance with OAR 340-040, which protects all groundwater as a drinking water resource. A detailed description of the City's efforts to address Category 3 UICs is provided in Section 5 of this report.

4.5 Response Actions

Response actions are intended to reduce elevated stormwater discharge concentrations at the surface in order to meet permit discharge limits. Meeting permit limits (i.e., MADLs) at the "end of pipe" demonstrates compliance with state and federal requirements for the protection of "underground sources of drinking water" and "waters of the state." Response actions are intended to be implemented in a timely manner and are considered interim in nature, until a final compliance determination is made or a final corrective action is implemented.

Implementation of *UIC Evaluation and Response Guidelines* (UICER) Nos. 1 through 8 (see UICMP - Appendix H) is considered to be applicable and appropriate response actions. UICER guidelines implemented since July 2011 are described in this section.

4.5.1 Key Accomplishments for FY11-12

- Implemented *UIC Evaluation and Response Guidelines* (UICER) No 2 in response to year 7 individual and annual mean MADL exceedances (see Section 3). During year 7 stormwater discharge monitoring, six common pollutants were detected during individual sampling events at concentrations above their respective MADLs: PCP, B(a)P, DEHP, lead, arsenic, and chromium.

4.5.2 Projected Main Activities for FY12-13

- Implement actions, as needed and appropriate, in response to any year 8 individual stormwater discharge monitoring MADL exceedances, unusual conditions observed during UIC sampling, inspections, or citizen complaints.

5 Corrective Actions

The Corrective Actions program element addresses UICs that are determined to be non-compliant with WPCF permit requirements through the Evaluation and Response process. This program includes the processes used to evaluate, rank, select, and implement appropriate corrective actions. A variety of corrective actions are available, including options that do not involve construction (such as institutional controls or an assessment to demonstrate protectiveness), structural/ engineering controls, and UIC closure.

5.1 Summary of UICs with Inadequate Separation Distance

UICMP Annual Report No 3 identified 308 Category 3 UICs. That group included 186 Category 3 UICs with < 5 feet vertical separation distance that would require corrective action; 119 Category 3 UICs that received NFA designations through the use of a groundwater protectiveness demonstration (GWPD); and 3 locations determined to be compliant based on updated construction information. For a summary of UICs with inadequate separation distance prior to FY 09-10, refer to *UICMP Annual Report No 4*.

In early 2009, the USGS modified the depth to groundwater information for the City of Portland. As a result of that modification, the City identified changes to the list of Category 3 UICs reported in *UICMP Annual Report No.4*. Updated information was reported to DEQ through written correspondence titled *Changes to USGS Depth to Groundwater Data Modifications to Category 3 UIC List* (April 1, 2009). As a result of those changes, the prioritized Category 3 list of UICs with < 5 feet vertical separation distance was updated to 190 UICs.

Since *UICMP Annual Report No. 4,* two of the 190 UICs have been removed from the Category 3 list. Twenty-two UICs located in City of Portland parks have also received an NFA designation (October 21, 2009) through application of the GWPD. In FY10-11, 33 UICs were removed from the Category 3 list through either completion of a corrective action or determination of permit compliance. In FY11-12, 9 UICs were removed from the Category 3 list through either completion of a corrective action or determination of permit compliance (as discussed above in section 4.2.1) and 2 new locations with less than 5 feet of separation distance were added. As part of major permit modification #1, one of the Category 2 UICs was included in the Category 3 list, bringing the final total to 127 Category 3 UICs that still require corrective action. The updated and prioritized list of Category 3 UICs is provided in Appendix B, Table B-1.

5.2 Category 2 UICs

As of November 1, 2011, all corrective actions for Category 2 UICs have been completed. All future UICs identified for corrective actions will fall under Category 3.

5.3 Category 3 UICs

The permit defines Category 3 UICs as those identified as non-compliant following completion of the *Systemwide Assessment*. The permit requires Category 3 corrective actions to be completed within three full CIP cycles following the annual report date for the reporting period in which the non-compliant public UICs are reported as discovered, or in accordance with a DEQ-approved regional corrective action. An updated Category 3 UIC list is provided in Appendix B (Table B-1). Specific changes to the Category 3 list are described in the following section.

5.3.1 Key Accomplishments for FY11-12

- Initiated design activities for Category 3 UICs, in accordance with the scope of the *Systemwide Assessment Follow-Up Actions* work plan.

- Removed nine UICs from the Category 3 UIC list through either completion of corrective action or determination of permit compliance.

- Met with DEQ on a periodic basis to provide an overview of work completed to date and discuss next steps.

5.3.2 Eliminated Category 3 UICs

Nine Category 3 UICs were removed from the corrective action list. Based on field investigations, depth values were confirmed at ADU768, ADT730, ADV121, ADU754, ACK560, ACK562, ACK563, ACK564, and ADU769. New depth values indicated locations with > 5 feet separation distance. Appendix B, Table B-2 provides the details.

These UICs are compliant with the permit and have been removed from the Category 3 list. Appendix B (Table B-2) lists these nine UICs.

5.3.3 New Category 3 UICs

Four new Category 3 UICs have been identified since the last annual report (APV741, APV742, APV622, R00309). These UICs either were identified by field crews during routine system inspections or were approved new installations. Based on measured depths, all four UICs were determined to have a separation distance of less than 10 feet between the lowest perforation of the UIC and seasonal high groundwater.

- Two of the UICs (APV741 and APV742) have a separation distance of < 5 feet. They have been added to the list of Category 3 UICs that will receive corrective actions that

will include retrofits to increase separation distance or decommissioning. Appendix B, Table B-3 summarizes these UICs.

- Two UICs (APV622, R00309) have been identified as having a separation distance > 5 feet. These locations will be addressed through application of the *Decision Making Framework for Protectiveness Demonstration* discussed below in section 5.3.4.

5.3.4 Category 3 UICs – No Further Action Determinations

Because the new Category 3 UICs APV622 and R00309 were identified as having a vertical separation distance >5, the *Decision Making Framework* can be applied to receive NFA designation, using a protectiveness demonstration as the identified corrective action. NFAs are identified as appropriate corrective actions under Schedule D, Section 12(c) of the WPCF permit. The corrective action was selected in accordance with the Corrective Action Plan (BES 2006).

The following steps from the *Decision Making Framework* were applied:

1) Identify UICs of interest and summarize UIC characteristics. (Appropriate information is provided in Appendix B, Table B-3).

2) Determine if groundwater is protected.
    a. UICs with vertical separation distance < 5 feet have been identified and reported as Category 3 UICs (see section 5.3.3).
    b. Vertical separation distances are ≥5 feet and the following assumptions apply.
        i. UIC is managed (i.e., operated and maintained) under the City of Portland's permit.
        ii. UIC receives urban right-of-way runoff.
        iii. UIC construction is similar to that described in the Conceptual Site Model presented in section 7 of the *Decision Making Framework.*
        iv. Stormwater pollutant types concentration entering the UIC are represented by the pollutants identified in Table 4-2 of the *Decision Making Framework.* For average stormwater pollutant types, refer to *Annual Stormwater Discharge Monitoring Report, Year 7*, November 2012.

    The assumptions listed above are all true; therefore, groundwater is protected when the vertical separation distance is > 5 feet for UIC APV622 and R00309, and an NFA is warranted.

3) Decision documentation and verification:
    a. Appropriate UIC information is documented in Table B-3, and water quality information is documented in the *Annual Stormwater Discharge Monitoring Report, Year 7*, November 2012.

Decision verification for all Category 3 UICs will be reviewed on an annual basis and reported as part of the UICMP annual report. Verification of existing UICs that previously received NFAs is located is Section 4.2 of this report.

5.3.5 Projected Main Activities for FY12-13

- Continue design and implementation of corrective actions for the remaining 127 Category 3 UICs with separation distance < 5 feet (see Appendix B, Table B-1). Projected timeline: Complete by May 31, 2015.

- Submit a request for permit modification #4 to DEQ to allow for UICs with less than 5 feet separation distance.

- Meet with DEQ on a periodic basis to provide an overview of work completed to date and discuss next steps. Projected timeline: September 2012 – July 2013.

5.4 Category 4 UICs

The permit defines Category 4 UICs as those that become non-compliant by failing to meet the annual geometric mean MADL within one wet season after the exceedance or failing to satisfy any groundwater protection conditions of permit Schedule A.

5.4.1 Key Accomplishments for FY11-12

- Based on the results of the year 7 stormwater monitoring data, no new Category 4 UICs were identified in year 7 (see Section 4.3.2).

5.4.2 Summary of Category 4 UICs

Previously Identified Category 4 UICs (in Years 2 through 6)

UICs in which the annual mean concentration exceeds the MADL for two consecutive years are identified as Category 4 UICs. Tables 5-1 through 5-4 list Category 4 UICs that were identified in years 2, 3, 5, and 6. (No Category 4 UICs were identified in year 4.) Category 4 UICs are reported in the annual *Stormwater Discharge Monitoring Report*.

Prior to sampling for Year 7 and in accordance with WPCF permit Schedule C(10)(a)(i), the City notified DEQ on October 5, 2011 that it would not sample the four year 6 carryover sites for a second consecutive year and would instead proceed directly to corrective action. These four sites are included in Table 5-4.

Table 5-1
Category 4 UICs Identified in Year 2

Location Code	Approximate Address	BES UIC No.	Traffic Category (TPD)	Estimated Separation Distance Between UIC and Groundwater (ft)	Year 1 Annual Geometric PCP Conc. (µg/L)	Year 2 Annual Geometric PCP Conc. (µg/L)
P1_1	6940 N. Macrum Ave.	AAG769	< 1000	73	1.1	1.2
P6_1	3500 SE 112th Ave.	ADW577	≥ 1000	64	1.2	1.0
P6_7	608 NE 87th Ave.	ADV645	< 1000	148	2.0	1.8
P6_14	4289 NE Prescott St.	ADQ252	≥ 1000	64	1.5	1.4

Table 5-2
Category 4 UICs Identified in Year 3

Location Code	Approximate Address	BES UIC No.	Traffic Category (Trips per Day)	Separation Distance [a] (ft)	Year 2 Annual Geometric Mean Pentachlorophenol Concentration (µg/L)	Year 3 Annual Geometric Mean Pentachlorophenol Concentration (µg/L)
P2_5	10150 SE Ankeny St.	ADR885	≥ 1,000	158	3.2	1.7
P2_13	4107 SE Reedway St.	ADU790	≥ 1,000	58	1.9	1.1
P2_14	8409 N. Woolsey Ave.	AAH289	≥ 1,000	55	2.5	1.3

a The estimated separation distance is defined as the approximate depth in feet from the bottom-most perforation in the UIC to the approximate seasonal-high groundwater level. The bottom-most perforation is defined as the bottom of the UIC minus 2 feet. Two feet were added to all separation distance calculations to account for the standard depth of the sediment trap ring on standard City UIC design.

Table 5-3
Category 4 UICs Identified in Year 5

Location Code	Approximate Address	BES UIC No.	Traffic Category (Trips per Day)	Separation Distance [a] (ft)	Year 4 Annual Geometric Mean Pentachlorophenol Concentration (µg/L)	Year 5 Annual Geometric Mean Pentachlorophenol Concentration (µg/L)
SP3_6	490 NE 133rd Ave.	ADS048	≥ 1,000	96	1.3	1.8
SP3_8	12198 SE Holgate Blvd.	ADW251	≥ 1,000	8	1.4	3.88

a The estimated separation distance is defined as the approximate depth in feet from the bottom-most perforation in the UIC to the approximate seasonal-high groundwater level. The bottom-most perforation is defined as the bottom of the UIC minus 2 feet. Two feet were added to all separation distance calculations to account for the standard depth of the sediment trap ring on standard City UIC design.

Table 5-4
Category 4 UICs Identified in Year 6

Location Code	Approximate Address	BES UIC No.	Traffic Category (Trips per Day)	Separation Distance [a] (ft)	Year 5 Annual Geometric Mean Pentachlorophenol Concentration (µg/L)	Year 6 Annual Geometric Mean Pentachlorophenol Concentration (µg/L)
P5_15	5190 N Vancouver Ave.	ADP960	≥ 1,000	129	2.69	2.24
SP4_2	8335 SE Division St	ADP094	≥ 1,000	106	2.44	2.2
SP4_10	10475 SE Division St	ADW349	≥ 1,000	97	2.15	1.93
SP5_2[b]	17020 SE Division St	ADS798	≥ 1,000	32	NA	1.53
SP5_9[b]	14741 SE Stark St	AMP103	≥ 1,000	78	NA	1.65
SP5_10[b]	3341 SE 122nd Ave	ADW625	≥ 1,000	32	NA	1.02
P1_10[b]	10647 E Burnside St	ADR905	≥ 1,000	118	NA	1.78
Location Code	**Approximate Address**	**BES UIC No.**	**Traffic Category (Trips per Day)**	**Separation Distance [a] (ft)**	**Year 5 Annual Geometric Mean Di(2-ethylhexyl)phthalate Concentration (µg/L)**	**Year 6 Annual Geometric Mean Di(2-ethylhexyl)phthalate Concentration (µg/L)**
SP5_9[b]	14741 SE Stark St	AMP103	≥ 1,000	78	NA	6.76
SP5_10[b]	3341 SE 122nd Ave	ADW625	≥ 1,000	32	NA	7.09
P1_10[b]	10647 E Burnside St	ADR905	≥ 1,000	118	NA	7.03
Location Code	**Approximate Address**	**BES UIC No.**	**Traffic Category (Trips per Day)**	**Separation Distance [a] (ft)**	**Year 5 Annual Geometric Mean Benzo(a)pyrene Concentration (µg/L)**	**Year 6 Annual Geometric Mean Benzo(a)pyrene Concentration (µg/L)**
P5_5	10331 Se Clinton St	ADW558	<1000	84	0.25	0.324

a The estimated separation distance is defined as the approximate depth in feet from the bottom-most perforation in the UIC to the approximate seasonal-high groundwater level. The bottom-most perforation is defined as the bottom of the UIC minus 2 feet. Two feet were added to all separation distance calculations to account for the standard depth of the sediment trap ring on standard City UIC design.

b UIC location exceeded a MADL for the first time in Year 6, but was identified as a Category 4 UIC in lieu of sampling for a second consecutive year in Year 7.

Corrective actions for the Category 4 UICs listed above were identified, evaluated, and selected in accordance with the *Corrective Action Plan* (CAP) (2006). The corrective action for these Category 4 UICs was a groundwater protectiveness demonstration (i.e., risk assessment), performed in accordance with *UICER Guideline No. 6: Groundwater Protectiveness Demonstration*. The groundwater protectiveness demonstrations were developed with DEQ input, and the final documents were reviewed and approved by DEQ (see Section 4.1).

DEQ issued an NFA determination for the four Category 4 UICs identified in year 2 on May 30, 2008. A copy of that letter is included in the *Decision Making Framework for Groundwater Protectiveness Demonstrations.*

The groundwater protectiveness demonstration for the three Category 4 UICs identified in year 3, the two Category 4 UICs identified in year 5, and the four UICs identified in year 6 (determined after two years of monitoring) were performed in accordance with the *Decision Making Framework for Groundwater Protectiveness Demonstration*. Based on the results of the analyses for year 3, year 5, and year 6 Category 4 UICs, it was determined that groundwater is protected and no further actions were warranted. The Groundwater Protectiveness Demonstrations and No Further Actions were submitted to DEQ for year 3 Category 4 UICs on March 30, 2009, for year 5 Category 4 UICs on April 4, 2011, and for year 6 Category 4 UICs on March 14, 2012. A Groundwater Protectiveness Demonstration for the four UICs determined as Category 4 after only one year will be performed in FY 12-13.

Category 4 UICs Identified in Year 7

Following completion of the year 7 monitoring, no new Category 4 UICs were identified.

5.4.3 Projected Main Activities for FY12-13

- Implement corrective actions for UICs identified as Category 4 UICs after only one year of monitoring in FY 10-11.

- Evaluate whether any year 8 UICs will be identified as Category 4 UICs.

Appendix A
Public UICs Identified, Constructed, or Removed
FY11-12

Date UIC Reported	BES Unit ID	UIC DEQ ID	EPA UIC Classification	Current Status [1]	UIC Location	Traffic Volume	Pre-treatment Type	Action Type
12/1/2011	ADP451	10102-2787	Class V Injection Well	AC	2827 NE LIBERTY ST	155	SED MH	Remove
9/1/2011	ADR974	10102-8251	Class V Injection Well	NB	136 NE 117TH AVE	940	No SED MH	Remove
12/1/2011	R00014	10102-9325	Class V Injection Well	UC	NE COUCH ST & NE 149TH PL	Not Available	NA	Remove
12/1/2011	R00024	10102-9336	Class V Injection Well	UC	SE 136TH & SE STEELE	7682	NA	Remove
12/1/2011	R00025	10102-9337	Class V Injection Well	UC	SE CENTER & SE 128TH AVE	1674	NA	Remove
12/1/2011	R00026	10102-9338	Class V Injection Well	UC	NE 64TH & KILLINGSWORTH ST	9574	NA	Remove
12/1/2011	R00027	10102-9339	Class V Injection Well	UC	NE 64TH & EMERSON CT	9574	NA	Remove
12/1/2011	R00009	10102-9346	Class V Injection Well	UC	5291 N. EMERSON DR	Not Available	NA	Remove
12/1/2011	R00031	10102-9369	Class V Injection Well	UC	6212-6300 NE KILLINGSWORTH ST	9574	SED MH	Remove
12/1/2011	R00032	10102-9370	Class V Injection Well	UC	6212-6300 NE KILLINGSWORTH ST	9574	SED MH	Remove
12/1/2011	R00065	10102-9398	Class V Injection Well	UC	8985 N Fiske Ave	1636	Swale	Remove
12/1/2011	R00067	10102-9400	Class V Injection Well	UC	9305-9325 N Fiske Ave	1636	Swale	Remove
12/1/2011	R00071	10102-9405	Class V Injection Well	UC	9521-9541 N Fiske Ave	2256	Swale	Remove
12/1/2011	R00072	10102-9406	Class V Injection Well	UC	4711-4737 N Fessenden St	1594	Swale	Remove
12/1/2011	R00118	10102-9462	Class V Injection Well	UC	11434 NE Fremont Ct	7108	SED MH	Remove
12/1/2011	R00120	10102-9464	Class V Injection Well	UC	11724 NE Fremont St	7108	NA	Remove
12/1/2011	R00122	10102-9466	Class V Injection Well	UC	11933 NE Fremont St	7701	SED MH	Remove
12/1/2011	R00124	10102-9468	Class V Injection Well	UC	12115 NE Fremont St	8612	SED MH	Remove
12/1/2011	R00126	10102-9470	Class V Injection Well	UC	14220 NE Fremont St	701	SED MH	Remove
12/1/2011	R00133	10102-9480	Class V Injection Well	UC	5420 SE Cooper St	355	Swale	Remove
12/1/2011	R00137	10102-9484	Class V Injection Well	UC	5252 SE Cooper St.	251	Swale	Remove
12/1/2011	R00150	10102-9523	Class V Injection Well	UC	SE 133rd Ave & SE Ankeny Ct	389	Swale	Remove
12/1/2011	R00175	10102-9548	Class V Injection Well	UC	7137 SE 68TH AVE	634	NA	Remove
12/1/2011	R00231	10102-9604	Class V Injection Well	UC	NE SANDY BLVD & NE 73RD AVE	16983	SED MH	Remove
9/1/2011	R00268	10102-9641	Class V Injection Well	UC	SE 75th Ave & SE Lafayette St	667	Swale	Add
9/1/2011	R00269	10102-9642	Class V Injection Well	UC	11266 NE WYGANT STREET	313	Swale	Add
9/1/2011	R00270	10102-9643	Class V Injection Well	UC	NE Holman St. & NE 13th Ave - SE Corner	564	Other	Add
9/1/2011	R00271	10102-9644	Class V Injection Well	UC	2815 SE 133rd Ave	389	Swale	Add
9/1/2011	APS487	10102-9645	Class V Injection Well	UC	11800 NE GLISAN ST	28194	SED MH	Add
9/1/2011	APS488	10102-9646	Class V Injection Well	UC	11800 NE GLISAN ST	28194	SED MH	Add
9/1/2011	APS505	10102-9647	Class V Injection Well	UC	4735 NE 72ND AVE	3782	SED MH	Add
9/1/2011	APT165	10102-9648	Class V Injection Well	AC	1500 SE 96TH AVE	6328	No SED MH	Add
9/1/2011	APT166	10102-9649	Class V Injection Well	AC	1500 SE 96TH AVE	6328	No SED MH	Add
9/1/2011	APT167	10102-9650	Class V Injection Well	AC	1500 SE 96TH AVE	6328	No SED MH	Add
9/1/2011	APT168	10102-9651	Class V Injection Well	AC	1500 SE 96TH AVE	6328	No SED MH	Add
9/1/2011	APQ382	10102-9652	Class V Injection Well	AC	11919 SE PARDEE ST	124	SED MH	Add
9/1/2011	APS154	10102-9653	Class V Injection Well	AC	8874 SE 9TH AVE	6280	No SED MH	Add

12/1/2011	R00281	10102-9654	Class V Injection Well	UC	8504 NE Beech St	382	SED MH	Add
12/1/2011	R00282	10102-9655	Class V Injection Well	UC	12638 SE Boise Street	604	Swale	Add
12/1/2011	R00283	10102-9656	Class V Injection Well	UC	7111 SE 64th Ave	263	Swale	Add
12/1/2011	R00284	10102-9657	Class V Injection Well	UC	4745-4821 NE Going St Overflow riser 1 of 2	321	Swale	Add
12/1/2011	R00285	10102-9658	Class V Injection Well	UC	4745-4821 NE Going St Overflow riser 2 of 2	321	Swale	Add
3/1/2012	APU935	10102-9659	Class V Injection Well	AC	1700 NE 102ND AVE	14844	No SED MH	Add
3/1/2012	R00287	10102-9660	Class V Injection Well	UC	13126 SE Cora St	2840	SED MH	Add
3/1/2012	R00288	10102-9661	Class V Injection Well	UC	13510 SE Bush Street - R1	847	Planter	Add
3/1/2012	R00289	10102-9662	Class V Injection Well	UC	13510 SE Bush Street - R2	847	Planter	Add
3/1/2012	R00290	10102-9663	Class V Injection Well	UC	13510 SE Bush Street - R3	10279	Planter	Add
3/1/2012	R00291	10102-9664	Class V Injection Well	UC	13510 SE Bush Street - R4	10259	Planter	Add
3/1/2012	R00292	10102-9665	Class V Injection Well	UC	SE 107th Ave btw SE Bush St & SE Powell Blvd	1004	Planter	Add
3/1/2012	R00293	10102-9666	Class V Injection Well	UC	4724 SE 118th Ave btw SE Pardee St & SE Schiller St	369	Planter	Add
3/1/2012	R00294	10102-9667	Class V Injection Well	UC	NE corner of SE 118th Ave & SE Liebe St	273	Planter	Add
3/1/2012	APW010	10102-9668	Class V Injection Well	AC	1833 NE 48TH AVE	705	No SED MH	Add
3/1/2012	APW012	10102-9669	Class V Injection Well	AC	1815 N WILLIS BLVD	678	No SED MH	Add
3/1/2012	APV955	10102-9670	Class V Injection Well	UC	1428 SE 71ST AVE	2283	No SED MH	Add
3/1/2012	APV752	10102-9671	Class V Injection Well	AC	3143 NE 156TH AVE	470	No SED MH	Add
3/1/2012	APV754	10102-9672	Class V Injection Well	AC	3143 NE 156TH AVE	470	No SED MH	Add
3/1/2012	APV756	10102-9673	Class V Injection Well	AC	3143 NE 156TH AVE	470	No SED MH	Add
3/1/2012	APV757	10102-9674	Class V Injection Well	AC	3143 NE 156TH AVE	470	No SED MH	Add
3/1/2012	APV762	10102-9675	Class V Injection Well	AC	15600 NE FARGO CT	470	No SED MH	Add
3/1/2012	APV765	10102-9676	Class V Injection Well	AC	15600 NE FARGO CT	470	No SED MH	Add
6/1/2012	R00304	10102-9677	Class V Injection Well	UC	420 SE 106th Ave	229	Swale	Add
6/1/2012	APV622	10102-9678	Class V Injection Well	AC	11540 SE FOSTER RD	25775	SED MH	Add
6/1/2012	APV741	10102-9679	Class V Injection Well	AC	11540 SE FOSTER RD	25775	SED MH	Add
6/1/2012	APV742	10102-9680	Class V Injection Well	AC	11540 SE FOSTER RD	25775	No SED MH	Add
6/1/2012	R00309	10102-9682	Class V Injection Well	UC	NW Overton Street and NW 11th Ave	9357	SED MH	Add
6/1/2012	APW608	10102-9683	Class V Injection Well	AC	2440 SE 122ND AVE	22938	SED MH	Add
6/1/2012	APW610	10102-9684	Class V Injection Well	AC	2440 SE 122ND AVE	22938	SED MH	Add
6/1/2012	R00312	10102-9685	Class V Injection Well	UC	NE 76th Ave @ NE Alberta St	575	SED MH	Add
6/1/2012	R00313	10102-9686	Class V Injection Well	UC	10702 SE Powell Blvd - R2	1004	Planter	Add
6/1/2012	APV751	10102-9687	Class V Injection Well	AC	5499 SE 100TH AVE	3892	No SED MH	Add
6/1/2012	APX001	10102-9688	Class V Injection Well	UC	2309 NE MORGAN ST	434	SED MH	Add
6/1/2012	APW409	10102-9689	Class V Injection Well	AC	10922 NE BRAZEE ST	427	No SED MH	Add
6/1/2012	R00317	10102-9690	Class V Injection Well	UC	NE Brazee St & NE 132nd Avenue	2414	SED MH	Add

[1] AC = in service; UC = under construction; unkn = unknown

Appendix B
Category 3 UIC Status

Table B-1 : Prioritized Category 3 UICs with < 5 feet Vertical Separation Distance

UIC Compliance Category	Non-compliant Condition	Hansen UIC Node Number	Location [1]	Hansen UIC Depth (ft) [2]	Sedimentation Manhole (yes/no)	Predominant Land use	Estimated Traffic Count	Separation Distance (ft)	Distance to Nearest Well (ft) [3]	Within 2 year time of travel (yes/no)	UIC Priority [4]	Target Compliance Date [5]	Anticipated Corrective Action [6]	FY11-12 Project Status	FY12-13 Planned Activities	DEQID
3	Separation Distance	ANA889	11305 SE HAROLD ST	Unkn	No	SFR	3295	-8	920	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-1036
3	Separation Distance	ANA899	1801 NE MARINE DR	10	No	SFR	11064	1	1196	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-1041
3	Separation Distance	ANA900	1839 NE MARINE DR	10.2	No	SFR	11064	2	1196	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-1042
3	Separation Distance	AMT874	5712 SE 103RD AVE	21.2	Yes	SFR	1109	0	1457	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-117
3	Separation Distance	ADV951	8312 SE 75TH PL	30	Yes	SFR	115	2	2515	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-120
3	Separation Distance	ADV974	10900 NE MARX ST	16.3	No	IND	1714	-2	1786	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-1316
3	Separation Distance	ADV130	5635 SE 102ND AVE	22	Yes	SFR	440	2	1734	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-164
3	Separation Distance	ADV144	5905 SE 102ND AVE	20.6	Yes	SFR	553	4	1961	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-165
3	Separation Distance	ADV190	10402 SE ELLIS ST	21	Yes	SFR	279	-1	1003	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-169
3	Separation Distance	AMR622	13515 SE HOLGATE BLVD	21	Yes	MFR	4568	2	960	Yes	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-1908
3	Separation Distance	AAC311	1445 NE MARINE DR	14.9	No	SFR	11064	-4	567	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-1919
3	Separation Distance	AMS283	12500 SE HAROLD ST	25	Yes	SFR	1477	-5	1007	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-232
3	Separation Distance	AMY402	11246 SE HAROLD ST	Unkn	No	SFR	3295	-8	928	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-263
3	Separation Distance	ADV204	5825 SE 122ND AVE	25	Yes	IND	11031	-6	1460	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-267
3	Separation Distance	AMV613	5640 SE 137TH AVE	30	Yes	MFR	180	5	648	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-285
3	Separation Distance	ADV384	8111 NE HOLMAN ST	14	No	IND	2980	-10	2314	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-3106
3	Separation Distance	AMY600	13515 SE HOLGATE BLVD	21	Yes	MFR	4568	-2	1009	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-352
3	Separation Distance	ADQ418	4656 NE 118TH AVE	30.1	Yes	COM	436	3	1472	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-3576
3	Separation Distance	ADR048	3734 NE 154TH AVE	30.2	Yes	MFR	247	3	734	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-4041
3	Separation Distance	ADV950	8318 SE 78TH AVE	27.5	Yes	SFR	86	-13	1849	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-4830
3	Separation Distance	ADV193	5710 SE 115TH AVE	24	Yes	SFR	521	-1	313	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5267
3	Separation Distance	ADV196	12010 SE REEDWAY ST	29.5	Yes	MFR	205	-13	962	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5269
3	Separation Distance	ADV197	5605 SE 120TH AVE	26	Yes	MFR	192	-5	680	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5270
3	Separation Distance	ADW303	11501 SE FOSTER RD	19	No	IND	25775	-9	1249	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5272
3	Separation Distance	ADW304	11741 SE FOSTER RD	19	No	IND	25775	3	1281	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5273
3	Separation Distance	ACQ013	11716 SE FOSTER RD	20	No	MFR	25775	4	1333	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5279
3	Separation Distance	ADW312	11540 SE FOSTER RD	18	No	COM	25775	-6	1299	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5280
3	Separation Distance	ADW313	5601 SE 122ND AVE	20	No	MFR	11400	0	1181	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5281
3	Separation Distance	ADV203	5918 SE 122ND AVE	31.7	Yes	MFR	10908	-1	1096	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5286
3	Separation Distance	ADV205	5906 SE 122ND AVE	27	Yes	MFR	11031	-7	1442	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5287
3	Separation Distance	ADT682	5803 SE 122ND AVE	27.5	Yes	IND	11133	-11	1615	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5288
3	Separation Distance	ADT683	12230 SE RAMONA ST	19	Yes	MFR	11133	-3	1534	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5289
3	Separation Distance	ADT687	12246 SE ELLIS ST	25	Yes	SFR	224	-4	1366	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5292
3	Separation Distance	ADT688	12532 SE ELLIS ST	30	Yes	SFR	236	-8	1326	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5293
3	Separation Distance	ADT689	5544 SE 128TH AVE	31.5	Yes	SFR	1262	-8	1431	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5294
3	Separation Distance	ADT690	12221 SE REEDWAY ST	27	Yes	MFR	11400	-7	1308	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5295
3	Separation	ADT691	12506 SE REEDWAY ST	25	Yes	SFR	180	-4	1555	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5296

3	Distance Separation	ADT696	12319 SE RAMONA ST	20.2	Yes	MFR	1089	0	1286	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5300
3	Distance Separation	ADW321	5732 SE 122ND AVE	20	No	MFR	11195	-3	1544	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5311
3	Distance Separation	ADT716	12140 SE RAMONA ST	28	Yes	POS	11195	-11	1482	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5319
3	Distance Separation	AMR553	8100 SE CRYSTAL SPRINGS BLVD	30	Yes	IND	895	-13	1136	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5347
3	Distance Separation	ACP660	5608 SE 99TH AVE	30	Yes	SFR	557	4	2534	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5407
3	Distance Separation	ADV127	5610 SE 102ND AVE	21	Yes	SFR	490	4	1720	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5412
3	Distance Separation	ADV135	5736 SE 102ND AVE	20.7	Yes	SFR	426	3	1791	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5422
3	Distance Separation	ADV146	5980 SE 102ND AVE	22	Yes	SFR	553	3	1987	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5429
3	Distance Separation	ACP682	5988 SE 102ND AVE	21.8	Yes	SFR	553	3	2004	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5431
3	Distance Separation	ADV154	6034 SE 102ND AVE	26.1	Yes	SFR	688	0	2130	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5435
3	Distance Separation	ACP693	6036 SE 102ND AVE	22	Yes	SFR	688	4	2160	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5436
3	Distance Separation	ACP887	10304 SE ELLIS ST	20.5	Yes	SFR	982	2	1372	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5458
3	Distance Separation	ACP889	10357 SE ELLIS ST	19	Yes	SFR	279	2	1104	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5460
3	Distance Separation	ACP890	10203 SE ELLIS ST	20	Yes	SFR	790	5	1646	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5461
3	Distance Separation	ACP891	10246 SE ELLIS ST	20.4	Yes	SFR	982	3	1478	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5462
3	Distance Separation	ADV187	10298 SE ELLIS ST	23.5	Yes	SFR	982	0	1427	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5463
3	Distance Separation	ADV188	10310 SE ELLIS ST	22	No	SFR	982	0	1322	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5464
3	Distance Separation	ACP892	10324 SE ELLIS ST	22	Yes	SFR	142	0	1247	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5465
3	Distance Separation	ADV189	10398 SE ELLIS ST	20	Yes	SFR	279	0	1054	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5466
3	Distance Separation	ADV191	11080 SE HAROLD ST	22.9	Yes	SFR	3387	-3	543	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5468
3	Distance Separation	AMX688	4406 SE 136TH AVE	22.75	Yes	SFR	9961	-4	647	Yes	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-558
3	Distance Separation	ADW286	3039 SE TOLMAN ST	30.2	No	SFR	1503	-2	3575	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5590
3	Distance Separation	ADW260	12199 SE LIEBE ST	17	No	MFR	12261	5	801	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-560
3	Distance Separation	ADW269	5211 SE 122ND AVE	20	No	MFR	11953	1	870	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-574
3	Distance Separation	ADW229	5436 SE 109TH AVE	20.5	No	SFR	461	2	444	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5764
3	Distance Separation	ADW230	5440 SE 111TH AVE	19	No	SFR	1848	3	639	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5765
3	Distance Separation	ADW233	5500 SE 104TH AVE	Unkn	No	SFR	1872	0	1045	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5768
3	Distance Separation	ADW256	4745 SE 122ND AVE	20	No	MFR	12363	3	661	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5887
3	Distance Separation	ADW257	4754 SE 122ND AVE	22	No	MFR	12363	1	682	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5888
3	Distance Separation	ADW258	4857 SE 122ND AVE	20.6	No	MFR	12261	1	790	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5889
3	Distance Separation	ADW261	4919 SE 122ND AVE	21	No	MFR	12138	0	756	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5891
3	Distance Separation	ACK357	4918 SE 122ND AVE	20	No	MFR	12138	1	702	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5892
3	Distance Separation	ADW264	5450 SE 114TH PL	Unkn	No	SFR	3582	-5	419	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5894
3	Distance Separation	ADW265	12150 SE RAYMOND ST	16.5	No	MFR	12138	4	778	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5895
3	Distance Separation	ADW266	5000 SE 122ND AVE	20	No	MFR	12138	0	691	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5896
3	Distance Separation	ADW267	5021 SE 122ND AVE	19.5	No	MFR	11953	1	777	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5897
3	Distance Separation	ADW271	5403 SE 122ND AVE	25	No	MFR	11646	-4	1048	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5900
3	Distance Separation	ADW272	5404 SE 122ND AVE	19.9	No	MFR	11646	1	1019	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5901
3	Distance Separation	ADW273	5436 SE 122ND AVE	17.5	No	MFR	11646	4	1212	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5902

3	Separation Distance	ADW274	5500 SE 122ND AVE	20.2	No	MFR	11646	1	1231	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5903
3	Separation Distance	ADW275	12122 SE HAROLD ST	20	No	COM	11646	1	1160	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5904
3	Separation Distance	ADU731	11134 SE STEELE ST	30.1	Yes	SFR	173	-2	1074	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5910
3	Separation Distance	ADU734	5423 SE 121ST AVE	30	Yes	MFR	806	-8	981	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5912
3	Separation Distance	ADU735	5500 SE 121ST AVE	30	Yes	MFR	806	-9	955	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5914
3	Separation Distance	ADU725	4908 SE 122ND AVE	19	No	MFR	12138	2	713	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5915
3	Separation Distance	ADU738	5031 SE 128TH AVE	30	Yes	SFR	1544	-11	761	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5921
3	Separation Distance	ADU740	13120 SE RAYMOND ST	26	Unkn	SFR	314	NA	NA	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5923
3	Separation Distance	ADU743	12780 SE SCHILLER ST	15.6	Yes	SFR	1778	1	817	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5924
3	Separation Distance	ADU744	12524 SE SCHILLER ST	16	Yes	SFR	416	2	513	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5925
3	Separation Distance	ADU753	13030 SE MITCHELL ST	26	Yes	SFR	178	2	1010	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5934
3	Separation Distance	ADU755	13000 SE HAROLD ST	29	Yes	SFR	1341	-3	1307	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5936
3	Separation Distance	ADU758	12908 SE MITCHELL ST	21	Yes	SFR	178	3	1173	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-5938
3	Separation Distance	AMR771	4736 SE 115TH AVE	31	Yes	SFR	821	3	449	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6110
3	Separation Distance	ADU749	12220 SE HOLGATE BLVD	24	Yes	COM	5249	4	275	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-619
3	Separation Distance	ADT426	4144 SE 132ND AVE	30	Yes	SFR	2840	-2	1399	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6287
3	Separation Distance	ADT428	13110 SE GLADSTONE CT	30	Yes	SFR	849	1	1220	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6289
3	Separation Distance	ADT433	12323 SE HOLGATE BLVD	21.8	Yes	MFR	5249	5	230	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6298
3	Separation Distance	ADT451	4490 SE 125TH AVE	20.6	Yes	SFR	5249	3	487	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6312
3	Separation Distance	ADT453	12920 SE HOLGATE BLVD	19.6	Yes	SFR	4814	0	1112	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6314
3	Separation Distance	ADT454	12830 SE HOLGATE BLVD	20.6	Yes	SFR	5035	0	1045	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6315
3	Separation Distance	ADT463	13236 SE CORA ST	25.5	Yes	SFR	419	-2	1543	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6324
3	Separation Distance	ADT464	13326 SE CORA ST	25.5	Yes	SFR	418	-4	1363	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6325
3	Separation Distance	ADT466	4100 SE 133RD AVE	30	Yes	SFR	389	-1	1286	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6326
3	Separation Distance	ADT471	13612 SE CORA ST	21	Yes	SFR	10104	-1	771	Yes	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6331
3	Separation Distance	ADT472	13722 SE CORA ST	19	Yes	SFR	9257	1	551	Yes	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6332
3	Separation Distance	ADT473	13820 SE GLADSTONE ST	20.9	Yes	SFR	427	4	520	Yes	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6333
3	Separation Distance	ADT474	13658 SE CORA ST	19.7	Yes	SFR	403	1	610	Yes	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6334
3	Separation Distance	ADT475	4241 SE 136TH AVE	27	Yes	SFR	10104	-8	798	Yes	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-6335
3	Separation Distance	ANA587	13008 SE HOLGATE BLVD	17	No	SFR	4710	-2	894	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-709
3	Separation Distance	ANA589	13250 SE HOLGATE BLVD	9	Yes	SFR	4710	0	1020	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-710
3	Separation Distance	ANA590	13250 SE HOLGATE BLVD	10	Yes	SFR	4710	-1	1024	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-711
3	Separation Distance	ANA591	13250 SE HOLGATE BLVD	10	Yes	SFR	4710	-1	1027	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-712
3	Separation Distance	ANA592	13250 SE HOLGATE BLVD	10.6	Yes	SFR	4710	-2	1031	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-713
3	Separation Distance	ANA596	13033 SE HOLGATE BLVD	Unkn	No	SFR	4710	-16	928	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-714
3	Separation Distance	ANA598	4425 SE 130TH AVE	19	No	SFR	1606	-2	970	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-715
3	Separation Distance	ANB108	11020 NE MARX ST	16	No	IND	1714	2	1817	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-791
3	Separation Distance	ADT455	4332 SE 130TH AVE	20	Yes	SFR	1606	1	1256	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-822
3	Separation Distance	ADT465	4024 SE 134TH AVE	24.2	Yes	SFR	1145	5	1114	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-833
3	Separation	ANA841	9956 SE HAROLD ST	30	No	SFR	3768	4	2354	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-855

3	Distance Separation Distance	ANB179	6015 NE 80TH AVE	19.5	No	IND	6658	-7	2423	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-868
3	Distance Separation Distance	ANB182	6135 NE 80TH AVE	19.9	No	IND	2900	-16	2178	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-869
3	Distance Separation Distance	ANB185	6245 NE 80TH AVE	Unkn	No	IND	2900	-27	1978	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-870
3	Distance Separation Distance	APJ198	848 N TOMAHAWK ISLAND DR	11	No Data	COM	5270	-3	2882	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-9243
3	Distance Separation Distance	AMX686	4406 SE 135TH AVE	25.4	Yes	SFR	2034	-9	1003	Yes	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-925
3	Distance Separation Distance	AAV769	4022 NE 142ND AVE	Unkn	No	SFR	220	-1	809	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-9474
3	Distance Separation Distance	ANW740	6457 NE 66TH AVE	18	No	SFR	439	4	1089	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-9478
3	Distance Separation Distance	AMQ114	8801 N VANCOUVER AVE	3	No	IND	9654	4	811	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-9498
3	Distance Separation Distance	APR303	2542 SE 18TH AVE	23	Yes	SFR	422	2	2635	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-9640
3	Distance Separation Distance	ADU751	12204 SE Steele St	20.4	Yes	MFR	11953	0	1408	No	Medium	May-15	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-
3	Distance Separation Distance	APS154	8874 SE 9TH AVE	31	No	SFR	1817	-5	3171	No	Medium	May 2015	Increase Separation Distance or GWPD	Design / Construction	Design / Construction	10102-9653

Notes:

1 Addresses are not considered precise location information and are subject to change as city staff better describe the physical UIC locations relative to nearby properties.

2 UIC depth of 0 indicates depth is not reported in the City UIC database. Depth assumed to be 30 feet for compliance determination.

3 UICs near drinking water wells were scored more conservatively than described in the *UIC Prioritization Procedure (Appendix F of the UIC Management Plan (December 2006)).* UICs within 500 of a drinking water well or within a 2- year time of travel were assigned a high criteria score rather than looking at the potential susceptibility of the drinking water well to impacts from the UIC.

4 UIC priority determined in general accordance the *UIC Prioritization Procedure*. If no value was available (NA) default values were assigned. The prioritization was developed as a means of assessing potential adverse impacts to groundwater that may be associated with individual UICs and categorizing them by priority for attention. UICs are listed in this table in descending order by their numeric prioritization score and non-compliant category.

5 Target Compliance date based on three full CIP funding cycles per the WPCF permit.

6 Corrective action will be determined in accordance with the *Corrective Action Plan* (July 2006). At this time, information is limited to the general response action anticipated for the non-compliant UIC. Once a corrective action is selected, it will be reported in subsequent UICMP Annual Reports.

Acronyms:

NA = Not Available TPD = Trips per Day

SFR = Single Family Residential MFR= Multifamily residential IND = Industrial COM = Commercial POS = Parks and Open Space

GWPD = Groundwater Protectiveness Demonstration NFA = No Further Action

Table B-2: Removals from Category 3 UIC List

UIC Compliance Category	Non-compliant Condition	Hansen UIC Node Number	Location [1]	Updated Hansen UIC Depth (ft)	Sedimentation Manhole (yes/no)	Predominant Land use	Estimated Traffic Count	Separation Distance (ft)	Distance to Nearest Well (ft)	Within 2 year time of travel (yes/no)	Reason Removed from November 2011 Category 3 UIC List	DEQ ID
3	Separation Distance	ADT730	14037 SE FOSTER RD	25	Yes	SFR	3624	7	780	No	UIC depth confirmed with > 5feet separation distance	10102-5331
3	Separation Distance	ADV121	6200 SE 102ND AVE	20	Yes	IND	894	7	2461	No	UIC depth confirmed with > 5feet separation distance	10102-5402
3	Separation Distance	ADU754	13030 SE MITCHELL ST	20	Yes	SFR	178	8	1008	No	UIC depth confirmed with > 5feet separation distance	10102-5935
3	Separation Distance	ACK560	13500 SE HOLGATE BLVD	14.8	Yes	SFR	4568	5	1031	No	UIC depth confirmed with > 5feet separation distance	10102-5947
3	Separation Distance	ACK562	13600 SE HOLGATE BLVD	9.5	Yes	SFR	9961	20	853	Yes	UIC depth confirmed with > 5feet separation distance	10102-5949
3	Separation Distance	ACK563	13600 SE HOLGATE BLVD	9.5	Yes	SFR	9961	19	858	Yes	UIC depth confirmed with > 5feet separation distance	10102-5950
3	Separation Distance	ACK564	13600 SE HOLGATE BLVD	9.5	Yes	SFR	9961	19	864	Yes	UIC depth confirmed with > 5feet separation distance	10102-5951
3	Separation Distance	ADU769	13600 SE HOLGATE BLVD	9.5	Yes	SFR	4568	19	871	Yes	UIC depth confirmed with > 5feet separation distance	10102-5954
3	Separation Distance	ADU768	13500 SE HOLGATE BLVD	15	Yes	SFR	4568	5	1028	No	UIC depth confirmed with > 5feet separation distance	10102-631

Notes:

[1] Addresses are not considered precise location information and are subject to change as city staff better describe the physical UIC locations relative to nearby properties.

Acronyms:

NA = Not Available TPD = Trips per Day

SFR = Single Family Residential MFR= Multifamily residential IND = Industrial COM = Commercial POS = Parks and Open Space

Table B-3 : New Category 3 UICs

UIC Compliance Category	Non-compliant Condition	Hansen UIC Node Number	Location [1]	Hansen UIC Depth (ft) [2]	Sedimentation Manhole (yes/no)	Predominant Land use	Estimated Traffic Count	Separation Distance (ft)	Distance to Nearest Well (ft) [3]	Within 2 year time of travel (yes/no)
3	Separation Distance	APV741	11540 SE FOSTER RD	12.8	No	COM	9357	-2	1300	No
3	Separation Distance	APV742	11540 SE FOSTER RD	13	No	COM	9357	-1	1312	No
3	Separation Distance	APV622	11540 SE FOSTER RD	17.6	No	COM	9357	6	1332	No
3	Separation Distance	R00309	NW Overton Street and NW 11th Ave	3	N/A	IND	25775	8 [4]	6263	No

Notes:

1 Addresses are not considered precise location information and are subject to change as city staff better describe the physical UIC locations relative to nearby properties.

2 UIC depth of 0 indicates depth is not reported in the City UIC database. Depth assumed to be 30 feet for compliance determination.

3 UICs near drinking water wells were scored more conservatively than described in the *UIC Prioritization Procedure (Appendix F of the UIC Management Plan (December 2006)).* UICs within 500 of a drinking water well or within a 2- year time of travel were assigned a high criteria score rather than looking at the potential susceptibility of the drinking water well to impacts from the UIC.

4 New UIC installation in a City park. DEQ approved installation with < 10 feet of separation distance in July 2011

Acronyms:

NA = Not Available TPD = Trips per Day

SFR = Single Family Residential MFR= Multifamily residential IND = Industrial COM = Commercial POS = Parks and Open Space

GWPD = Groundwater Protectiveness Demonstration NFA = No Further Action

Appendix C
Spills That Have Occurred within Areas Serviced by UICs

Appendix C: Spills That Have Occurred within Areas Serviced by UICs

Date	Release Type	Volume	Spill Location	Did Fluids Reach City-owned UIC? (Y/N)	Closest City-owned UIC Catchbasin
7/4/11	oil	unknown	14410 SE Division	Unknown	ADS690
7/17/11	oil	unknown	6147 NE 9th Ave	N	ADP677
8/3/11	paint	minimal	5723 SE Bush	N	ADT179
8/10/11	auto fluids	minimal	11556 SE Yamhill St	N	ADU482
8/10/11	oil	unknown	8112 N Clarendon Ave	N	ADN396
8/11/11	oil	unknown	NE 148th and San Rafael	Unknown	ADR393
8/17/11	oil	1-2 gal	7608 N. Denver	N	ADN891
8/25/11	auto fluids	minimal	SE Clinton and SE 122nd	N	ADS613
9/3/11	paint	bucket	NE Holman and NE 14th	N	ADP707
9/17/11	radiator and oil fluids	unknown	NE 85th and NE Halsey	Y	ADV490
9/28/11	oil	15 sq ft*	N Buffalo St and N Atlantic Ave	Unknown	ADP170
9/29/11	oil	1 gal	8131 N Berkeley	N	ADN394 ADN401
10/17/11	paint	minimal	5404 SE Rhone	N	ADT178
10/21/11	concrete washing sediment	minimal	4211 NE Fremont St	N	AAU608
10/25/11	oil	minimal	NE 122nd Ave and Wasco St	Unknown	ADR715 ADV681
10/28/11	oily water	1 gal	1818 SE 82nd Ave	N	ADP107
11/7/11	oil	minimal	SE 75th and SE Tibbetts	N	ACA166
11/16/11	oil	minimal	1426 SE 158th Ave	N	ADP010
11/21/11	oil	5 gal	13045 SE Stark St	Unlikely	ADS000
1/13/12	Auto Wrecking Activities	unknown	5242 NE Columbia Blvd	Y	AMY572
1/18/12	concrete wastewater	unknown	838 N Russet	Y	ADN942
2/8/12	oily material	minimal	1140 SE 139th Ave	N	ADT097
2/10/12	fuel tank oil	minimal	4118 SE Liebe St	N	AMP250 AMP251
3/30/12	paint	minimal	5857 NE 30th Ave	N	AAN383 ADP793
4/4/12	paint water	minimal	13836 SE Holgate	N	ADU760
4/15/12	antifreeze oil	minimal	SE 148th and Division	N	multiple
4/24/12	sewage	4,000 gal	9243 N Fortune	Y	ADU283
4/25/12	paint	minimal	826 NE Roselawn Street	N	ADP999

Date	Release Type	Volume	Spill Location	Did Fluids Reach City-owned UIC? (Y/N)	Closest City-owned UIC Catchbasin
5/1/12	gray water	minimal	5920 SE 128th Ave	N	ADT693
6/8/12	Auto Wrecking Activities	unknown	5242 NE Columbia Blvd	Y	AMY572
6/13/12	Portable toilet liquids	5 gal	6100 NE Holladay	Unknown	ADR490

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