



**CITY OF COEUR D ALENE  
2013 NPDES ANNUAL REPORT**

**January 01, 2013 to December 31, 2013  
Municipal Separate Storm Sewer System (MS4)  
Federal Storm Water  
National Pollutant Discharge Elimination System Permit  
(IDS-028215)**

**Submitted To:**

**United States Environmental  
Protection Agency  
NPDES Compliance Unit  
1200 6<sup>th</sup> Avenue, Suite 900 (OCE-133)  
Seattle, Washington 98101**

**&**

**Idaho Department of Environmental Quality  
Coeur d'Alene Regional Office  
2110 Ironwood Parkway  
Coeur d'Alene, Idaho 83814**

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**Submitted By:**

**City of Coeur d'Alene  
710 E. Mullan Avenue  
Coeur d'Alene, Idaho 83814**

Coeur d'Alene Urbanized Area NPDES MS4

**Annual Report February 3, 2014**

## Report Certification

### City of Coeur d'Alene NPDES Municipal Separate Storm Sewer System Annual Report for Permit Year 2013

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



\_\_\_\_\_  
Gordon Dobler, P.E.  
City Engineer

2-10-2014

\_\_\_\_\_  
Date

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Permit Part	SWMP Activity Summary	Compliance Date
<b>General Requirements - Summary</b>		
Part II.C	Submit written description of how SWMP actions are targeted to control the discharge of pollutants of concern, and how permittee will evaluate the effectiveness of those actions	One year from permit effective date, update annually thereafter
Part II.D and IV.C	Conduct an annual review of SWMP implementation and submit an Annual Report to EPA and IDEQ	February 15 of each year, beginning in 2010
Part IV.A	Develop a Quality Assurance Plan for storm water discharge monitoring, provide written notice to EPA and IDEQ	Within 270 days of permit effective date
	Begin monitoring	18 months from permit effective date
<b>Public Education and Outreach (40 CFR §122.34(b)(1)) Pages 1-4</b>		
Part II.B.1	Implement an ongoing public education program to educate the community about the impacts of storm water discharges on local water bodies and the steps that citizens and businesses can take to reduce pollutants in storm water runoff. (II.B.1.a)	Two years from effective date of this permit
	Distribute storm water educational materials to target audiences (II.B.1.b)	At least once per year
	Distribute SWMP information to local media (II.B.c)	At least once per year
<b>Public Involvement and Participation (40CFR §122.34(b)(2)) Pages 5-6</b>		
Part II.B.2	Post all SWMP documentation and Annual Reports on the permittee's website (II.B.2.b)	Two years from permit effective date, ongoing thereafter
	Organize and promote Adopt a Street and Litter Pick Up Day(s) (II.B.2.c)	Once per year, each program
	Conduct public forum regarding SWMP activities (II.B.2.d)	At least once annually
	Create, maintain, and promote a telephone hotline; track complaints (II.B.2.e)	Within three years, ongoing thereafter
	Organize and conduct a storm drain stenciling program.	Within one year of the effective date of this permit
	At least 100 storm drains stenciled per year (II.B.2.f)	Within two years of permit effective date, ongoing thereafter

<b>Illicit Discharge Detection and Elimination (40 CFR §122.34(b)(3))</b>		<b>Pages 7-11</b>
Part II.B.3	Development, implement and enforce a program to detect and eliminate illicit discharges into the MS4 (II.B.3.a)	Two years from the permit effective date
	Adopt an ordinance or other control measure to prohibit illicit discharges to the MS4(s); prohibit any specific non-storm water discharge, if necessary (II.B.3.b & c)	Two years from the permit effective date
	Develop/update a comprehensive storm sewer system map (II.B.3.d)	Two years from the permit effective date
	Inform public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste (II.B.3.e)	Two years from the permit effective date
	Screen 50% of outfalls for dry weather flows. (II.B.3.f)	No later than permit expiration date
	Inventory the industrial facilities discharging storm water within the Urbanized Area (II.B.3.g)	Three years from the permit effective date
<b>Construction Site Storm Water Runoff (40CFR §122.34(b)(4))</b>		<b>Pages 12-16</b>
Part II.B.4	Implement and enforce a construction site runoff control program for sites disturbing one or more acres of land; review and update the program as necessary (II.B.4.a)	Two years from the permit effective date, ongoing thereafter
	Provide adequate direction to project proponents regarding the EPA Construction General Permit (II.B.4.b)	Upon permit effective date
	Adopt an ordinance or other control measure to require construction site operators to practice erosion, sediment and waste control (II.B.4.c)	Two years from the permit effective date
	Publish and distribute written requirements for construction site best management practices (II.B.4.d)	Two years from the permit effective date
	Develop, or review/update as necessary, procedures for reviewing pre-construction site plans & accepting public input and complaints (II.B.4.e & f)	Two years from the permit effective date
	Implement site inspection & enforcement procedures. Inspect all construction sites at least once per construction season. (II.B.4.g)	Two years from the permit effective date
	Ensure all permittee-owned construction projects comply with EPA's Construction General Permit (II.B.4.h)	Upon permit effective date
	Conduct at least one training for construction industry (II.B.4.i)	Three years from the permit effective date

<b>Post-Construction Storm Water Management (40 CFR §122.34(b)(5))</b>			<b>Page 17-18</b>
Part II.B.5	Develop and implement a program to address post-construction storm water runoff from new development and redevelopment projects (II.B.5.a)	Three years from the permit effective date	
	Adopt an ordinance to address post-construction runoff from new development and redevelopment projects (II.B.5.b)	Three years from the permit effective date	
	Ensure proper long term operation and maintenance of post construction storm water BMPs. (II.B.5.c)	Three years from the permit effective date	
	Develop and implement a site plan review process and site inspection program to ensure proper installation and long-term operation and maintenance of post-construction storm water management controls (II.B.5.d)	Four years from the permit effective date	
<b>Pollution Prevention/Good Housekeeping (40 CFR§122.34(b)(6))</b>			<b>Page 19-23</b>
Part II.B.6	Develop and implement an operation and maintenance program intended to prevent or reduce pollutant runoff from municipal operations (II.B.6.a)	Two years from the permit effective date	
	Develop and conduct appropriate training for municipal personnel (II.B.6.b)	Two years from the permit effective date, annually thereafter	
	Prepare storm water pollution prevention plans for the fleet maintenance/street department site and the water treatment plant (II.B.6.c)	Two years from the permit effective date	
<b>Monitoring Requirements</b>			<b>Page 24-25</b>
Part IV.A.2	Evaluate City's compliance with the identified BMP's and progress toward achieving the minimum control measures and document in each annual report	Two years from the permit effective date	
	Monitor the quality of storm water discharges from the MS4 / Conduct a storm water discharge monitoring program	18 months from the permit effective date	
	Develop a quality assurance plane (QAP) monitoring storm water discharge. Must be submitted for review to EPA and IDEQ	Quality Assurance Project Plan, developed, reviewed, signed, submitted February 09,2010	
<b>Appendices</b>			<b>Page 26-27</b>

## Summary

### Information for Reviewers

This 2013 City of Coeur d'Alene Urbanized Area NPDES MS4 Annual Report is presented in a text format. This text document comprises the majority of the report and discusses each of the required reporting elements for the permit. Copies of the Annual Report will be available through the City of Coeur d'Alene website at [www.cdaid.org](http://www.cdaid.org). The city annually evaluates the effectiveness of its SWMP activities to control the discharge of the pollutant(s) of concern.

### Introduction

Region 10 of the U.S. Environmental Protection Agency (EPA) issued a draft National Pollutant Discharge Elimination System (NPDES) permit to the City of Coeur d'Alene Urbanized Area Municipal Storm Sewer Systems (MS4) on February 29, 2008. Following review by the City of Coeur d'Alene and meetings with local Idaho Department of Environmental Quality (DEQ) and Region 10 EPA staff, and a public hearing, a final permit became effective on January 1, 2009.

This report presents and documents the actions required by the permit and taken by the permittee for the Year 5 reporting period (January 1, 2013 – December 31, 2013). Individual requirements of the permit are presented in the order of the permit outline. The report has been certified by the appropriate officials.

### Quality Assurance Project Plan for Coeur d'Alene Urbanized Area

**Quality Assurance Project Plan** - As required by Part IV.A of the permit, the City of Coeur d'Alene developed, reviewed, signed and submitted a Quality Assurance Project Plan (QAPP) on February 09, 2010 for the water quality monitoring requirements of the permit (Part IV). The QAPP is included with our 2009, 2010 annual reports and as a link on our website.

### Storm Water Management Program Review

The Coeur d'Alene Urbanized Area Storm Water Management Program (SWMP) review for the reporting year 2009 consists of developing a SWMP. The SWMP is designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, and to protect water quality in receiving waters. The SWMP actions and activities are outlined in the following pages of this 2013 Annual Report. The SWMP is available with 2009 and 2010 annual reports and on our website. The updated SWMP was submitted with the 2012 annual report and is available on our website.

## Public Education & Outreach

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Public Education and Outreach		
Part II.B.1	1) Implement an ongoing public education program to educate the community about the impacts of storm water discharges on local water bodies and the steps that citizens and businesses can take to reduce pollutants in storm water runoff. (II.B.1.a)	Two years from effective date of this permit
	2) Distribute storm water educational materials to target audiences (II.B.1.b)	At least once per year
	3) Distribute SWMP information to local media (II.B.c)	At least once per year

**1) Within two years of the effective date of this permit, the permittee must develop and implement a public education program to educate the community about the impacts of storm water discharges on local water bodies and the steps that citizens and businesses can take to reduce pollutants in storm water runoff.**

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CDA TV Channel 19 – The mission of CDA TV Channel 19 (Government/Public Education channel for the Greater Coeur d’Alene area) is to enhance the community’s public information and communications system, involve the community in local government decision making, and provide useful local government/public education information to general and specialized audiences. The following were featured on our public channel in this permit year:

- EPA produced video, “Reduce Runoff: Slow it Down, Spread it Out, Soak it In” was aired on our local channel 19 beginning in November, 2013 and running for 30 days.

February 28, 2013

The City of Coeur d Alene hosted a development forum, attended by developers, construction companies, the general public and city staff. Best Management Practices for pollution prevention and erosion/sediment controls were discussed.

April 10, 2013

Attended and presented stormwater pollution prevention measures at the Hard Hats, Hammers & Hot Dogs event at the Kootenai Technical Education Center. The audience consisted of area high school students.

April 21, 2013

Annual Earth Day stormwater presentation of pollution prevention practices. Our SWMP was made available to participants. Our canines for clean water program were also presented with 11 citizens taking the clean water pledge.

## Public Education & Outreach

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May 22 & 23, 2013

Annual Stormwater Presentation at Silverwood Science and Physics Days.

Middle school students from the region attended. Our presentations demonstrated how pollutants can enter our waters and practical everyday things we can all do to prevent pollutants from entering our waters.

May 28, 2013

Lake City High School group stenciled storm drains, picked up trash and distributed pollution prevention door hangers. The group leader also provided a classroom presentation on the City of Coeur d'Alene storm system. The city provided the tools for stenciling and classroom presentation.

June 27, 2013

Provided stormwater management components to Jim Ekins, Area Water Educator, University of Idaho Extension Office for his presentation at the "water quality educational paddle" for a local canoe and kayak club.

July 2013-October 2013

Kootenai Environmental Alliance groups performed storm drain stenciling, trash pickup and distribution of pollution prevention door hangers.

September 11, 2013

Stormwater management presentation, University of Idaho extension office, as part of the IdaH2O Water Master Program.

September 12, 2013

Provided enviroscape model and stormwater pollution prevention materials for use to a homeschool group.

September 2013

Eagle Scout Candidate cleaned 186 neighborhood swale scuppers. The group also distributed stormwater pollution prevention materials.

October 08, 2013

Partnered with the University of Idaho with a stormwater presentation for the Ramsey Elementary fourth grade students. Pollution causes and prevention were discussed using the enviroscape model to demonstrate.

December 04, 2013

Annual Environmental Open House. The open house was hosted by and held at Lakes Highway District's office. The open house featured several agencies presenting stormwater pollution prevention practices. Our SWMP was made available for review.

During this permit year we had 113 visitors to our stormwater website.



## Public Education & Outreach

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### **2) At least once per year, the permittee must distribute appropriate storm water educational materials to the target audiences.**

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The City of Coeur d'Alene Engineering Department worked together with Panhandle Storm Water Erosion and Sediment Control Education Program (SEEP) to produce a field guide which includes storm water education materials. The guide is available to contractors and the public in our customer service center at city hall.

Our volunteer storm drain stencil groups and volunteers cleaning neighborhood scuppers distributed pollution prevention information in the neighborhoods where they were stenciling.

April 21, 2013

Earth Day Fair, Stormwater management plan and pollution prevention presentation. Stormwater brochures and our SWMP were available for citizens to review.

May 22 & 23, 2013

Annual Stormwater Presentation, Silverwood Theme Park 6th-8th grades. Using our enviroscape model we presented a demonstration of how pollutants can enter our waters and how we can prevent pollution. Storm water brochures with pollution prevention tips and reusable bags were distributed. Participants were encouraged to take the "canines for clean water pledge," which encourages pet owners to clean up after their pets.

June 27, 2013

Provided stormwater management components to University of Idaho Extension office for a presentation at the "water quality educational paddle" with a local canoe and kayak club.

October 08, 2013

Partnered with the University of Idaho with a stormwater presentation for the Ramsey Elementary fourth grade students. Pollution causes and prevention were discussed using the enviroscape model to demonstrate.

During this permit year site inspections of downtown businesses were performed in relation to their waste management. One business was recognized as an example of best management practices in relation to grease storage. Permit year 2014, will include forming a partnership with the downtown association concerning waste management and pollution prevention in alleys.

### **3) At least once per year, the permittee will prepare and distribute appropriate information relevant to the SWMP to the local newspaper and at least one other media outlet.**

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## Public Education & Outreach

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January 15, 2013

The Coeur d'Alene Press had a full page newspaper article "Kid Scoop" on stormwater pollution causes and prevention. The page contained puzzles and games.

March 2013 Article in the Coeur d'Alene Press on "Spring Clean Up."

November 12, 2013 Article in the Coeur d'Alene Press, for "Leaf Pick Up."

November 22, 2013

EPA produced "Reduce Runoff: Slow it Down, Spread it Out, Soak it In" aired twice a day for 30 days on our channel 19 television station.

## Public Involvement and Participation

Public Involvement and Participation		
Part II.B.2	1) Post all SWMP documentation and Annual Reports on the permittee's website (II.B.2.b)	Two years from permit effective date, ongoing thereafter
	2) Organize and promote Adopt a Street and Litter Pick Up Day(s) (II.B.2.c)	Once per year, each program
	3) Conduct public forum regarding SWMP activities (II.B.2.d)	At least once annually
	4) Create, maintain, and promote a telephone hotline; track complaints (II.B.2.e)	Within three years, ongoing thereafter
	5) Organize and conduct a storm drain stenciling program.  At least 100 storm drains stenciled per year (II.B.2.f)	Within one year of the effective date of this permit  Within two years of permit effective date, ongoing thereafter

**1) The permittee must make all relevant SWMP documents and all Annual Reports required by this permit available to the public. Within two years of the effective date of this permit, all SWMP document and Annual Reports must be posted online through its regularly maintained website (or a website sponsored by the permittee).**

The 2009, 2010, 2011, 2012 & 2013 Annual Reports, Storm Water Management Program and Quality Assurance Protection Plan are posted on the City of Coeur d'Alene website and are available for review at city hall.

**2) At least once per year, the permittee must organize and promote citizen participation in each of its Adopt a Street and Annual Litter Pick-up programs.**

The Adopt-A-Street program was authorized by the City Council in August of 2000. The program is a partnership, which includes an adopting group, family, or individual. They pick up the trash, and the City provides signage, vests, and orange litter bags, and also collects the bags the next working day after they have been filled. A quarterly pick up of trash is encouraged with a minimum being twice per year. There are currently 34 Adopt-A-Street volunteer groups. During this permit year, 2.15 tons of trash was removed from our MS4 by our volunteers. Volunteer information for this program is available on the city website "volunteer" tab and on the City of Coeur d'Alene street department web page.

## Public Involvement and Participation

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**3) At least once per year, the permittee must conduct a public open house or other forum to solicit input from the public on the permittee's implementation of the SWMP activities.**

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December 04, 2013

The 2013 open house was hosted by Lakes Highway District. The City of Coeur d'Alene partnered with several agencies in presenting stormwater management information. The event was publicized but public participation was absent possibly due to inclement weather. The partnering efforts with the open house have allowed other permit holders and area agencies to share information and training tools. Our SWMP was available for review.

**4) Within three years of the permit effective date, the permittee will create, maintain, and promote a "hotline" telephone number to receive, track, and respond as necessary to information submitted by the public regarding storm water pollution concerns.**

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A hotline was established for reporting spills, illegal dumping or for stormwater questions and concerns. In addition to the hot line the city has an on line reporting tool on our website. The hot line phone number is posted on the city's website and on our educational materials. During the permit year we received 7 hot line calls and 3 emails from citizens through our city web site and 4 reports from employees.

**5) The permittee must organize promote and conduct a storm drain stenciling program. Within two years of the effective date of this permit, at least 100 storm drains, catch basins or inlets throughout the permittee's jurisdiction must be stenciled per year.**

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During this permit year, 150 drains have been stenciled by volunteer groups from Kootenai Environmental Alliance, Lake City High School and as part of an Eagle Scout Candidate Project. In addition to the stenciling they distributed approximately 200 door hangers in residential areas, providing stormwater education and pollution prevention tips. The volunteer groups also picked up trash in the neighborhoods they were stenciling. The program is promoted at outreach events and on the city's web site under the "volunteer" tab.

## Illicit Discharge Detection and Elimination

Illicit Discharge Detection and Elimination		
Part II.B.3	1) Development, implement and enforce a program to detect and eliminate illicit discharges into the MS4 (II.B.3.a)	Two years from the permit effective date
	2) Adopt an ordinance or other control measure to prohibit illicit discharges to the MS4(s); prohibit any specific non-storm water discharge, if necessary (II.B.3.b & c)	Two years from the permit effective date
	3) Develop/update a comprehensive storm sewer system map (II.B.3.d)	Two years from the permit effective date
	4) Inform public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste (II.B.3.e)	Two years from the permit effective date
	5) Screen 50% of outfalls for dry weather flows. (II.B.3.f)	No later than permit expiration date
	6) Inventory the industrial facilities discharging storm water within the Urbanized Area (II.B.3.g)	Three years from the permit effective date

**1) Within two years from the effective date of this permit, the permittee must develop and implement a program to detect and eliminate illicit discharges into their MS4, including roadways and associated drainage facilities, ditches, pipes, culverts, catch basins and retention ponds in its jurisdiction. This program must include written spill response procedures to ensure protection of the permittee's MS4. The program must include written procedures for detention, identification of the source, and removal of non-storm water discharges from the MS4. This program must also address illegal dumping into the MS4, and include training for City staff on how to respond to reports of illicit discharges. The permittee must develop an information management database system to track the activities and actions of the program in concert with the hotline required in Part II.B.2.**

Our illicit discharge detection and elimination program outline was submitted with the 2010 annual report. Municipal employees have received training in the recognition of and response to illicit discharges.

Spill prevention and containment refreshers are included as part of the annual training for staff members from Fire, Building, Engineering, Parks, Police, Water, Wastewater, Recreation and Street Departments.

Information on reported illicit discharges and action taken is kept in our City Track database and with our code enforcement department. The city has developed a written standard operating procedure for prioritizing illicit discharges and stormwater complaints and concerns. All city

## Illicit Discharge Detection and Elimination

staff has been directed to code entries into our “city track” database reporting system as “high” priority. Our system will notify designated staff and the appropriate priority ranking of the call will be assigned. This approach enables all city staff to take the calls and appropriate staff to rank the priority.

### *High Priority (Immediate action is required)*

- Spills / Accidents
- Intentional Dumping
- Leaking automotive fluids
- Public Health and Safety Issues

### *Medium Priority (3-5 day response)*

- Cross connection between a sanitary sewer and a storm sewer
- Failing septic system that is causing surface discharge into the storm sewer
- Sanitary waste piping that is directly connected from a home or business to the storm sewer
- Shop floor drain that is connected directly to a storm sewer

### *Low Priority (5-10 day response)*

- Slow draining catch basin\*
- Slow draining or plugged grassed infiltration area\*

*\*if flooding is occurring on street or private property that is a safety concern or threat to property damage, upgrade priority to high*

**2-1) Within two years from the effective date of this permit, the permittee must effectively prohibit non-storm water discharges into the MS4 through an ordinance or other regulatory mechanism to the extent allowable under State or local law. The permittee must implement appropriate enforcement procedures and actions, including a written policy of enforcement escalation procedures for recalcitrant or repeat offenders.**

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Ordinance 3455, amending the municipal code of the City of Coeur d’Alene, Kootenai County, Idaho updating chapter 13.32, Entitled Illicit Discharge and Stormwater Sewer Connection, to provide for regulation of all water directly or indirectly entering the city stormwater system, including definitions, discharge regulation, monitoring and reporting requirements, prohibiting illicit connections and providing that any violation of the chapter is a misdemeanor punishable by a fine of not more than \$1,000.00 or by imprisonment not to exceed 180 days or both.

**2-2) Through the ordinance or other regularly mechanism set forth in Section II.B.3.b, the permittee must prohibit any of the non-stormwater flows listed in Part I.C.1.c only if such flows are identified (by EPA or the permittee) as a source of**

## Illicit Discharge Detection and Elimination

**pollutants to the MS4. The permittee must document to EPA in the Annual Report any existing local controls or conditions placed on the types of non-storm water discharges in Part I.C.1.c.**

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The City of Coeur d'Alene, Ordinance 3455, prohibits all non-storm water discharges to the MS4 with the exception of discharges detailed in our NPDES permit Part 1.C.1.c.

**3) Within two years from the effective date of this permit, the permittee must update and complete its comprehensive MS4 map. At a minimum, the map(2) must show jurisdictional boundaries, the location of all City-owned or operated storm sewers, culverts, ditches, and other conveyances, the location of all inlets and outfalls, points at which the permittee's MS4 is interconnected with other MS4s, names and locations of all waters that receive discharges from those outfalls, and locations of all municipally-owned or operated facilities, including all maintenance/storage facilities and public or private snow disposal sites. Locations of all outfalls must also be provided in latitude and longitude, and the diameter of all outfalls must be provided with the map. The maps must be available in electronic or digital format as appropriate. A copy of the completed map(s), as both a report and as an electronic file via Arc GIS format, must be submitted to EPA and IDEQ as part of the corresponding Annual Report.**

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The City of Coeur d'Alene MS4 map was included with the 2010 annual report. No additional conveyances were added or removed in 2013.

**4) Within two years from the effective date of this permit, the permittee must begin an ongoing education program to inform users of the MS4, especially public employees, businesses, and the general public, of hazards associated with illegal discharges and improper disposal of waste. This program must be conducted in concert with the public education requirements outlined in Part II.B.1.**

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Municipal storm water pollution prevention training, which includes spill containment and illicit discharge detection is provided to appropriate staff annually.

Engineering staff attended Stormwater SWPPP and ESCP training hosted by Idaho Technology Transfer Center, April 29, 2013

During this permit year all city employees received electronic stormwater basics training which included information on waste disposal and spill prevention.

## Illicit Discharge Detection and Elimination

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During this permit year approximately 200 door hangers were distributed during storm drain stenciling to single family residents, containing storm water pollution prevention information.

**5) Within three years from the effective date of this permit, the permittee must begin dry weather field screening for non-storm water flows from all storm water outfalls. By the expiration date of the permit, at least 50% of the permittee's outfalls within the Coeur d'Alene Urbanized Area must be screened for dry weather flows. The screening should include field tests of selected parameters as indicators of discharge sources. Screening level tests may utilize less expensive "field test kits" using test methods not approved by EPA under 40 CFR Part 136, provided the manufacturer's published detention ranges are adequate for the illicit discharge detection purposes. The permittee must investigate any illicit discharge within fifteen (15) days of its detection, and must take action to eliminate the source of the discharge within 45 days of its detention.**

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August 2011, Dry weather field screening was conducted at 7 of our outfalls. Four of the outfalls were dry and three with trickle flow. Outfalls with flows were investigated upstream of the outfall and flow was determined to be from irrigation. The upstream manhole at one of the outfalls was being used as an ashtray. The debris from this manhole emptied directly into the lake. The owner of the property was contacted and within three days and before the next rain event, drain was cleaned and use stopped.

August & September 2012, Dry weather field screening of all outfalls were conducted. No indication of illicit discharge was discovered.

August & September 2013, Dry weather field screening of outfalls were conducted. No indication of illicit discharge was discovered.

**6) Within three years from the effective date of this permit, the permittee must inventory all industrial facilities that discharge directly to the permittee's MS4 or directly to waters of the United States located within the Coeur d'Alene Urbanized Area and submit this inventory as part of the corresponding Annual Report. The types of industrial facilities that must be inventoried are set forth in 40 CFR §122.26(b)(14)(i-ix) and (xi). This inventory must include the location of the facility, the location of its outfall, and the NPDES permit status for its storm water discharges.**

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This requirement was met in the 2011 permit year. There was only one business identified that met the criteria of this permitting requirement; Deming Industries located at 2945 N. Government Way in Coeur d'Alene, Outfall#11.



## Illicit Discharge Detection and Elimination

The research for this program requirement utilized information from our wastewater department, Panhandle Health, Kootenai Environmental Alliance, City of Coeur d Alene building permit data and EPA's NOI site.

## Construction Site Storm Water Runoff Control

Construction Site Storm Water Runoff		
Part II.B.4	1) Implement and enforce a construction site runoff control program for sites disturbing one or more acres of land; review and update the program as necessary (II.B.4.a)	Two years from the permit effective date, ongoing thereafter
	2) Provide adequate direction to project proponents regarding the EPA Construction General Permit (II.B.4.b)	Upon permit effective date
	3) Adopt an ordinance or other control measure to require construction site operators to practice erosion, sediment and waste control (II.B.4.c)	Two years from the permit effective date
	4) Publish and distribute written requirements for construction site best management practices (II.B.4.d)	Two years from the permit effective date
	5) Develop, or review/update as necessary, procedures for reviewing pre-construction site plans & accepting public input and complaints (II.B.4.e & f)	Two years from the permit effective date
	6) Implement site inspection & enforcement procedures. Inspect all construction sites at least once per construction season. (II.B.4.g)	Two years from the permit effective date
	7) Ensure all permittee-owned construction projects comply with EPA's Construction General Permit (II-B.4.h)	Upon permit effective date
	8) Conduct at least one training for construction industry (II.B.4.i)	Three years from the permit effective date

**1) Within two years from the effective date of this permit, the permittee must implement and enforce a program to reduce pollutants in any storm water runoff to the MS4 from construction activities resulting in land disturbance of greater than or equal to one acre. This program must also include controls for pollutants in such storm water discharges from activity disturbing less than one acre, if that construction activity is part of a larger common plan of development or sale that disturbs one acre or more.**

Ordinance 3455, adopted December 04, 2012 amending the municipal code of the City of Coeur d'Alene, Kootenai County, Idaho, Amending Sections 13.30.010, 13.30.020, 13.30.040, 13.30.050, 13.30.606 and adopting a new section 13.30.075 to the Stormwater Management Ordinance to provide additional definitions, adopting additional standards for erosion, sediment and construction waste control and providing for inspections; repealing all ordinances and parts of ordinances in conflict herewith and providing a severability clause. Complete ordinance is available on the City of Coeur d'Alene website.

## Construction Site Storm Water Runoff Control

**2) The permittee must provide appropriate information and direction to representatives of proposed new development and redevelopment construction projects concerning the NPDES General Permit for Storm Water Discharges for Construction Activity in Idaho, #IDR 10-0000 (Construction General Permit).**

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The “Notice to Contractors” is located on our City of Coeur d’Alene website, is posted in the customer service center at city hall and has been electronically distributed to the North Idaho Building Contractors Association. The information is also included in all project reviews packets. The notice is included with 2009 and 2010’s annual reports, and available on our website. Also, available in our customer service center is an E.P.A produced brochure; “Does Your Construction Site Need A Stormwater Permit.”

Engineering project reviews include notification to the applicant of this requirement.

**3) Within two years from the effective date of this permit, the permittee must adopt an ordinance or other regulatory mechanism to the extent allowable under state or local law that requires all construction site operators to practice appropriate erosion, sediment and waste control. This ordinance or regulatory mechanism must include sanctions to ensure compliance. The permittee may evaluate any existing procedures, policies, and authorities pertaining to activities occurring on their property that may be used to assist in the development of the required regulatory mechanism.**

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Ordinance No. 3455, Municipal Code 13.30.010-13.30.130 addresses this permit requirement. The complete ordinance was submitted with our 2012 annual report and is available on our website.

**4) Within two years from the effective date of this permit, the permittee must publish and distribute requirements for construction site operators to implement appropriate erosion and sediment control BMPs and to control waste (such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at a construction site) that may cause adverse impacts to water quality.**

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October 05, 2010 The City of Coeur d’Alene Resolution No. 10-038 adopting the Idaho Department of Environmental Quality Best Management Practices as the city’s BMP’s. The information was presented at public works, city council meeting, North Idaho Building Contractors Association and mailed to builders, contractors, landscaper and architects. The information is also on our website and posted in the customer service center. The information is also made available to permit applicants at project review stage and at our annual development forum, which was held this year on February 28, 2013.

## Construction Site Storm Water Runoff Control

The City inspectors, during site inspections continue to distribute bmp requirements to the on-site operators.

**5-1) Within two years from the effective date of this permit, the permittee must develop procedures for reviewing all pre-construction site plans for potential water quality impacts, including erosion and sediment control, control of other wastes, and any other impacts according to the requirements of the law, ordinance, or other enforceable mechanism created to comply with Part II.B.4.c. These procedures must include provisions for receipt and consideration of information submitted by the public.**

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Ordinance 3345, 13.30.040 states that storm water management plans are required for all land disturbing building permits and provides for exceptions. The plans are reviewed and approved as a condition of issuance of the permits. All required erosion and sediment controls will be included on the stormwater management plans and reviewed and approved by City engineer or his designee. In addition, these plans will be made available to the public for input.

Inspection of construction sites will be performed at least once per construction season and after a rain event to ensure placement and proper functioning of required erosion control elements and waste management.

During the 2013 construction season all sites were inspected prior to site disturbance, after a storm event and before the issuance of a certificate of occupancy.

**5-2) Within two years from the effective date of this permit, the permittee must implement a program to receive, track, and review information submitted by the public regarding construction site erosion and sediment control complaints.**

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The City of Coeur d'Alene Drainage System Utility established a stormwater hotline and an on-line communication link. The hotline number is included in our educational handouts, on our website, included in our municipal training and has been included in several newspaper articles. The reporting and tracking program includes an on line reporting form and database to track and save information. If a complaint is called in or given in person, the staff member taking the information will enter it into our "City Track" system for appropriate action and documentation. No construction site erosion and sediment control complaints were received from the public in 2013.

**6) Within three years from the effective date of this permit, the permittee must develop and implement procedures for site inspection and enforcement of control measures established as required in Parts II.B.4.c and d, including a written policy of enforcement escalation procedures for recalcitrant or repeat offenders. The permittee must inspect all construction sites in their jurisdiction for appropriate erosion/sediment/waste control practices as least once per construction season.**

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## Construction Site Storm Water Runoff Control

Storm water Management, Ordinance 3345, Municipal Code 13.30.080, Inspections

Prior to site inspection, plans are reviewed to confirm storm water management plan requirements. During on- site inspection, all bmp's are evaluated to ensure proper installation and functionality.

Any bmp's that are found to be incorrectly installed or missing will be noted and a correction notice given to the person in charge at the site. If no one is available on site, a correction notice will be left and a call will be placed to the permit applicant. The correction notice will state the amount of time allowed for permittee to comply. An additional inspection will be made to ensure corrections have been addressed. If compliance is not achieved a stop work order is issued.

During this permit year, 912 erosion/sediment and waste control inspection were completed. Of those inspections 46 correction notices were issued with no stop work orders being issued. All construction sites in the city were inspected a minimum of two times; prior to site disturbance and on final inspection before the issuance of a certificate of occupancy. Sites were also inspected after a storm event.

**7) The permittee must comply with the Construction General Permit and all relevant local requirements for erosion, sediment and onsite materials control on public construction projects. The permittee must ensure that all contractors working on behalf of the permittee are complying with the Construction General Permit and all relevant local requirements for erosion, sediment, and onsite materials control on construction projects. The permittee must incorporate specific language in all contracts ensuring appropriate storm water management on all public construction projects.**

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It is the City of Coeur d'Alene policy that all projects disturbing over 1 acre of ground must obtain an NPDES general permit and comply with the permits requirements for erosion, sediment and on site materials control. Additionally, it is the City's policy that all projects disturbing any ground must implement and be inspected for erosion, sediment control and material handling and storage BMP's.

**8) Within three years from the effective date of this permit, the permittee must develop and conduct at least one training session for the local construction/design/engineering audience related to the construction ordinance and BMP requirements referenced in Parts II.B.4.c and d.**

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## Construction Site Storm Water Runoff Control

The city hosted its second annual development forum on February 28, 2013. The information presented included best management practices and requirements for construction sites.

Approximately forty people were in attendance.

Copies of the EPA produced educational handout, "How Do I Get Stormwater Permit Coverage for My Construction Site" were distributed at the event.

## Post-Construction Storm Water Management

Post-Construction Storm Water Management in New Development and Redevelopment		
Part II.B.5	1) Develop and implement a program to address post-construction storm water runoff from new development and redevelopment projects (II.B.5.a)	Three years from the permit effective date
	2) Adopt an ordinance to address post-construction runoff from new development and redevelopment projects (II.B.5.b)	Three years from the permit effective date
	3) Ensure proper long term operation and maintenance of post construction storm water BMPs. (II.B.5.c)	Three years from the permit effective date
	4) Develop and implement a site plan review process and site inspection program to ensure proper installation and long-term operation and maintenance of post-construction storm water management controls (II.B.5.d)	Four years from the permit effective date

1) **Within three years from the effective date of this permit, the permittee must implement and enforce a program to address post-construction storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre (including projects less than one acre that are part of a larger common plan of development or sale) and that result in discharge into the permittee's MS4. The program must ensure that controls are enacted that will prevent or minimize water quality impacts from newly developed or redeveloped areas.**

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Ordinance No. 3455, Municipal Code 13.32.010-13.32.140 addresses this permit requirement. The complete ordinance was included with the 2012 annual report and is available on our website.

2) **Within three years from the effective date of this permit, the permittee must adopt an ordinance or other regulatory mechanism to the extent allowable under State or local law to address post-construction runoff from new development and redevelopment projects. If such requirements do not currently exist, development and adoption of an ordinance is required. The permittee may evaluate existing procedures, policies, and authorities pertaining to activities occurring on their property that may be used to assist in the development of the required regulatory mechanism.**

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## Post-Construction Storm Water Management

Ordinance No. 3455, Municipal Code 13.32.010-13.32.140 addresses this permit requirement. The complete ordinance was included with the 2012 annual report and is available on our website.

**3) Within three years from the effective date of this permit, the permittee must ensure proper long term operation and maintenance of all permanent storm water management controls located within its jurisdiction.**

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As part of the City's storm water facilities and conveyances maintenance plan, inspections are performed annually. The results are used to plan the appropriate measures necessary to ensure proper long term operation.

**4) Within four years from the effective date of this permit, the permittee must develop and implement a process for pre-construction plan review of permanent storm water management controls and inspection of such controls to ensure proper installation and appropriate long-term operation and maintenance.**

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The City of Coeur d Alene has utilized a pre-construction plan review process since the early 1980's. In relation to stormwater management controls and inspections, the following is our procedure:

- A stormwater management plan is required with the plan submission.
- The City engineering staff will review, with final approval by the City Engineer.
- Site Inspections
- The applicant is required to submit a percolation test and a letter signed by the design professional stating that the swales were constructed in accordance with their recommendations



## Pollution Prevention and Good Housekeeping for Municipal Operations

Pollution Prevention and Good Housekeeping for Municipal Operations		
Part II.B.6	1) Develop and implement an operation and maintenance program intended to prevent or reduce pollutant runoff from municipal operations (II.B.6.a)	Two years from the permit effective date
	2) Develop and conduct appropriate training for municipal personnel (II.B.6.b)	Two years from the permit effective date, annually thereafter
	3) Prepare storm water pollution prevention plans for the fleet maintenance/street department site and the water treatment plant (II.B.6.c)	Two years from the permit effective date

**1) Within two years from the effective date of this permit, the permittee must develop and implement an operation and maintenance program intended to prevent or reduce pollutant runoff from municipal operations. This program must address municipal activities occurring within the permittee's jurisdiction with potential for negative storm water related water quality impacts, including: the use of sand and road deicers; fleet maintenance and vehicle washing operations; street cleaning and maintenance; grounds/park and open space maintenance operations; building maintenance, solid waste transfer activities; water treatment plant operations; storm water system maintenance; and snow disposal site operation and maintenance. Examples of other municipal activities which may also be evaluated as relevant to the jurisdiction include, but are not limited to: materials storage; hazardous materials storage; used oil recycling; spill control and prevention measures for municipal refueling facilities; municipal golf course maintenance; municipal new construction and land disturbances; and snow removal practices.**

The City of Coeur d'Alene has developed an evolving guide for the operations and activities of our departments with the potential for negative storm water quality impacts. Our focus is to identify and evaluate our existing best management practices in our municipal operations and activities to determine areas for improvement.

### **2013 Storm Water Work Plan Progress:**

**Video of Storm Lines 18400 feet**

**Catch Basins Cleaned 2615**

**Street Sweeping 1428 center miles**

**Tonnage of debris removed from sweeping and catch basin cleaning 3671 tons**

**Swale Inlet Maintenance 407**

## Pollution Prevention and Good Housekeeping for Municipal Operations

Each department within the City has operation and maintenance procedures that are designed and evaluated to ensure we are implementing BMP's in relation to our municipal operations.

### Existing Best Management Practices for Pollution Prevention by Department

#### **Water Department:**

Employee training in storm water basics, pollution prevention, spill prevention and response, illicit discharge detection and reporting

Supervisor performs storm water pollution potential evaluation on site prior to commencement of operations, repair or maintenance projects

BMP's applied to water line construction, repair and maintenance activities

Equipment is routinely inspected for leaks or conditions which could lead to a discharge of pollutants

Spill Kits in vehicles

#### **Street Department:**

Maintains aggressive street sweeping program to improve air and water quality

Equipment is routinely inspected for leaks or conditions which could lead to discharges of pollutants

Equipment which is not working properly is promptly taken out of service for repair

Work surfaces, floors and ground surfaces are kept clean and dry

City wide Leaf Pickup: There were 2,174 tons of leaves removed from city streets in this permit year

CSB to enhance salt brine de-icer, which results in less salt used on roadways.

Snow storage practices; snow is stored on permeable surface away from storm conveyance

BMP's applied to construction and repair projects

Spill Kits in vehicles

Annual training includes storm water basics, pollution prevention, spill prevention and response, illicit discharge detection and reporting

Five department employees have completed a SEEP training class (Storm water Erosion Education Program)

## Pollution Prevention and Good Housekeeping for Municipal Operations

Partners with Urban Forestry in the tree trimming program, for enhanced sweeping clearance

Vehicle wash water discharges to sanitary sewer. Drain is equipped with an oil water separator that is cleaned yearly

### **Parks Department:**

Promotion and organization of Community Bike to Work Week

Employee training in storm water basics, pollution prevention, spill prevention and response, illicit discharge detection and reporting

7 Employees have a Professional Applicators License issued by the Idaho Department of Agriculture to handle and apply pesticides and herbicides

Soil sampling before fertilizer application

Water Conservation Irrigation Systems

Installation of Pet Waste Dispensers

Trash pick-up along all City managed bike paths and hiking trails year round (except when snow is on the ground). Trash is picked up 3 times a week in the summer, two times a week in the colder seasons, and once a week in the winter

Public trees planted in 2013: 574 trees and 75 seedlings (within the right of way or in parks)

All trails are mowed and tree limbs trimmed up regularly in the spring, winter, and fall. The Parks Department promotes an educational program to encourage increased use of the trail system

Parks / Cemetery Shop were issued a Critical Materials Compliance Certificate from Panhandle Health District's Aquifer Protection Program

### **Waste Water Department:**

Employee training in storm water basics, pollution prevention, spill prevention and response, illicit discharge detection and reporting

All on-site storm water is processed with the sanitary sewer before discharge

Treatment Plant operates under NPDES permit ID-002285-3

Treatment Plant has a Critical Materials Compliance Certificate, issued by Panhandle Health District's Aquifer Protection Program

# Pollution Prevention and Good Housekeeping for Municipal Operations

## **Fire Department:**

### Overview

The Coeur d'Alene Fire Department provides Hazardous Material responses at the *Operations Level*. At this level of training, all firefighters are trained to recognize a potential Haz-Mat Incident, isolation of the incident, identify exposures, identify safety hazards to the public & responders, determine possible evacuations, take a defensive approach by possibly shutting off the source and protecting drains without coming in contact with the material or product.

- Initial Operations Level Training consists of 40 hours of Hazardous Materials Training and 8 hours of annual continuing education for all personnel.
- Annual Storm Water education (DVD based) provided by the City of Coeur d'Alene.

### Response Materials

- The CDAFD keeps a ready supply of 3 ½" (10") absorbent tubing for the use of diking and containment booming on the water.
- A ready supply on responding units of absorbent pads (16" X 16")
- 5 gallons of absorbent for fluid hazards at motor vehicle collisions
- Emergency Response Guide Book in all response apparatus

### Additional Resources

- State of Idaho Hazardous Materials Team is located at Kootenai County Fire & Rescue, which is based within the City of Coeur d'Alene. They provide Technician, Specialist & Incident Commander level services. They are activated through Boise State Communications if and when our Chief Officers determine the spill level to exceed our capabilities.

**2) Within two years from the effective date of this permit and annually thereafter, the permittee must develop and conduct appropriate training for municipal employees related to optimum maintenance practices for protection of water quality. This training must be conducted at least once annually and address the activities specified in Part II.B.6.a.**

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Individual departments address best management practices in relation to their job tasks as a standing topic in their staff meetings. Appropriate city staffs receive annual refresher courses on spill control & containment and illicit discharge detection. Engineering staff continually utilize the EPA website for training in relation to the permit components. Appropriate staff have attended presentations from EPA representatives on the Construction General Permit requirements and SWPPP & ESCP training.

Appropriate staff are SEEP (stormwater erosion education program.)

Electronic stormwater best management practices for pollution prevention provided to all city employees during this permit year.

## Pollution Prevention and Good Housekeeping for Municipal Operations

**3) Within two years from the effective date of this permit, the permittee must prepare and implement storm water pollution prevention plans for the permittee's fleet maintenance/street department site and waste water treatment plant.**

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The Street / Fleet Maintenance Department are not located on or near the storm water conveyance system. Although not located near the conveyance system, our street department has developed best management practices in relation to pollution prevention. Routine maintenance and vehicle washing on site is performed indoors and any discharge from these activities goes to the sanitary sewer. The street department is inspected by the Panhandle Health District Aquifer Protection Program and was issued a Critical Materials Compliance Certificate.

The City's Waste Water Treatment Plant captures all on-site storm water and processes it as it does sanitary sewer. The plant operates under their own NPDES permit number ID-002285-3, which was issued May 13, 2004 and has been administratively extended by EPA Region 10. The plant is also inspected by the Panhandle Health District Aquifer Protection Program and was issued a Critical Materials Compliance Certificate.

## Storm water Monitoring Requirements

Monitoring Requirements		
Part IV.A.2	Evaluate City's compliance with the identified BMP's and progress toward achieving the minimum control measures and document in each annual report	Two years from the permit effective date
	Monitor the quality of storm water discharges from the MS4 / Conduct a storm water discharge monitoring program	18 months from the permit effective date
	Develop a quality assurance plane (QAP) monitoring storm water discharge. Must be submitted for review to EPA and IDEQ	Quality Assurance Project Plan, developed, reviewed, signed, submitted February 09,2010

**1) Within 1 year from the effective date of this permit, the permittee must develop a monitoring plan that includes the quality assurance requirements defined in Part IV.A.6. The permittee must develop and implement a monitoring program to:**

- a) **estimate the pollutant loading currently discharged from the MS4**
- b) **assess the effectiveness and adequacy of control measures implemented through this permit; and**
- c) **identify and prioritize those portions of the MS4 requiring additional controls**

Monitoring results and analysis (Appendix 1)

During this permit year ten samples were taken, five at each of our monitoring stations. Additional sampling years are needed to assess the effectiveness and adequacy of the control measures implemented in the permit. Additional data collection / evaluation are necessary to determine the need for additional control actions and to determine the priority of actions.

## Storm water Monitoring Requirements

- 2) No later than 18 months from the effective date of this permit, the permittee must conduct a storm water discharge monitoring program which meet the following minimum requirements:**
- a) the permittee must sample at least one storm water outfall discharging to the Spokane River, and at least one storm water outfall discharging to Lake Coeur d'Alene, each representing the largest or highest flow discharges from the MS4**
  - b) The permittee must monitor the storm water discharges for the pollutants as identified in Table IV.A. ( appendix, page 3)**

This is the fourth year of our monitoring program. The City began our program with the installation of two automatic monitoring sites. Station 1, discharges to Lake Coeur d Alene and Station 2, discharges into the Spokane River. During this permit year five samples were taken at each station.

# Storm water Monitoring Requirements

Station 1 19th Street

## SAMPLE DATED RESULTS (SDR)

**POLLUTANT**                      **UNIT**    **12-Mar-13**   **22-May-13**   **17-Jul-13**    **2-Aug-13**   **5-Sep-13**

Calcium	mg/L	8.2800	5.5400	13.1000	3.9000	6.7100
Lead	mg/L	0.0075	0.0075	0.0075	0.0075	0.0114
Magnesium	mg/L	1.6800	0.9660	1.7100	0.6490	1.8700
Zinc	mg/L	0.0856	0.0314	0.0547	0.0234	0.0882
Hardness (as CaCO3)	mg/L	27.6000	17.8000	39.7000	12.4000	24.5000
Total Nitrogen	mg/L	0.9280	0.5940	2.4400	0.8400	1.4300
Total Susp. Solids	mg/L	164.0000	12.0000	8.0000	17.0000	21.0000
Phosphorus	mg/L	0.1310	0.1850	0.3360	0.1710	0.1860
PCB	mg/L	0.0000	0.0000	0.0000	0.0000	0.0000

Note: If the sample result shows 0, the result is less than the reporting limit.

## TOTAL POLLUTANT LOADING - LBS

MONTH	FLOW Flow-m <sup>3</sup>	Calcium	Lead	Magnesium	Zinc	Hardness	Total	Total Susp	Phosphorus	PCB
							Nitrogen	Solids		
JANUARY	11349.3	207.17	0.19	42.04	2.14	690.58	23.22	4103.43	3.28	0.00
FEBRUARY	6405	116.92	0.11	23.72	1.21	389.73	13.10	2315.78	1.85	0.00
MARCH	11131.2	135.95	0.18	41.23	2.10	677.31	22.77	4024.58	3.21	0.00
APRIL	12940.6	236.22	0.21	47.93	2.44	507.82	26.48	4678.78	3.74	0.00
MAY	11073	135.24	0.18	23.58	0.77	434.53	14.50	292.94	4.52	0.00
JUNE	25348.7	309.60	0.42	53.98	1.75	994.74	33.20	670.61	10.34	0.00
JULY	5880.06	169.82	0.10	22.17	0.71	514.64	31.63	103.71	4.36	0.00
AUGUST	18629.3	160.18	0.31	26.65	0.96	509.28	34.50	698.20	7.02	0.00
SEPTEMBER	24159	357.38	0.61	99.60	4.70	1304.91	76.16	1118.49	9.91	0.00
OCTOBER	25403	375.79	0.64	104.73	4.94	1372.10	80.09	1176.08	10.42	0.00
NOVEMBER	21673.1	320.61	0.54	89.35	4.21	1170.63	68.33	1003.40	8.89	0.00
DECEMBER	19321.3	285.82	0.49	79.65	3.76	1043.61	60.91	894.52	7.92	0.00
TOTAL	193313.6	2810.70	3.97	654.63	29.69	9609.87	484.89	21080.52	75.45	0.00



# Storm water Monitoring Requirements

Station 2 Bellerive Lane

## SAMPLE DATED RESULTS (SDR)

POLLUTANT	UNIT	12-Mar-13	22-May-13	17-Jul-13	2-Aug-13	5-Sep-13
Calcium	mg/L	9.2200	5.9000	13.6000	4.4700	5.3100
Lead	mg/L	0.0140	0.0075	0.0075	0.0075	0.0075
Magnesium	mg/L	4.8600	0.9830	2.3200	0.6820	0.8530
Zinc	mg/L	0.2330	0.0361	0.0467	0.0273	0.0337
Hardness (as CaCO3)	mg/L	43.0000	18.8000	43.6000	14.0000	16.8000
Total Nitrogen	mg/L	0.7560	0.6040	2.0700	0.6180	0.8600
Total Susp. Solids	mg/L	150.0000	17.0000	22.0000	27.0000	33.0000
Phosphorus	mg/L	0.1460	0.1070	0.1700	0.0780	0.1060
PCB	mg/L	0.0000	0.0000	0.0000	0.0000	0.0000

Note: If the sample result shows 0, the result is less than the reporting limit.

## TOTAL POLLUTANT LOADING - LBS

MONTH	FLOW Flow-m <sup>3</sup>	Calcium	Lead	Magnesium	Zinc	Hardness	Total Nitrogen	Total Susp Solids	Phosphorus	PCB
JANUARY	6608.33	134.33	0.20	70.80	3.39	626.46	11.01	2185.33	2.13	0.00
FEBRUARY	3424.33	69.61	0.11	36.69	1.76	324.62	5.71	1132.40	1.10	0.00
MARCH	5439.32	110.56	0.17	58.28	2.79	515.64	9.07	1798.75	1.75	0.00
APRIL	6749.33	137.19	0.21	72.32	3.47	639.83	11.25	2231.96	2.17	0.00
MAY	6495.05	84.48	0.11	14.08	0.52	269.20	8.65	243.43	1.53	0.00
JUNE	15407.8	200.41	0.25	33.39	1.23	638.61	20.52	577.46	3.63	0.00
JULY	3938.25	118.08	0.07	20.14	0.41	378.55	17.97	191.01	1.48	0.00
AUGUST	7986.12	78.70	0.13	12.01	0.48	246.49	10.88	475.37	1.37	0.00
SEPTEMBER	13667.9	160.00	0.23	25.70	1.02	506.23	25.91	994.37	3.19	0.00
OCTOBER	1886.2	22.08	0.03	3.55	0.14	69.86	3.58	137.23	0.44	0.00
NOVEMBER	8099.27	94.81	0.13	15.23	0.60	299.98	15.36	589.24	1.89	0.00
DECEMBER	5381.16	62.99	0.09	10.12	0.40	199.31	10.20	391.49	1.26	0.00
TOTAL	85083.06	1273.26	1.73	372.31	16.20	4714.77	150.10	10948.05	21.95	0.00