

Source Tracking Inspection Program Elements

Green Country Stormwater Alliance

Tulsa Technology Center

Broken Arrow Campus

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Where Is This Flow Coming From?



Outfall Reconnaissance

- The best time to perform an Outfall Reconnaissance Inventory (ORI) is when flow and leaf cover is minimal. These conditions allow a better view of the surrounding landscape and make illicit dry weather discharges easier to detect.
- Fill out an ORI each time an outfall is visited

Section 1: Site Information

Site Information		
Outfall ID:	Date:	Time:
Latitude (N):	Longitude (W):	
Investigators:		
Dominant Watershed Land Use (1=Primary use, 2=Secondary use):		
<input type="checkbox"/> Suburban Residential	<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space
<input type="checkbox"/> Urban Residential	<input type="checkbox"/> Commercial	<input type="checkbox"/> Other:
Receiving Stream:		
Access Instructions:		

Section 2: Outfall/Conveyance

Outfall/Conveyance		
Type	Material	Shape
<input type="checkbox"/> Closed Pipe <input type="checkbox"/> Box Culvert Dimensions:	<input type="checkbox"/> Concrete <input type="checkbox"/> Poly <input type="checkbox"/> Steel <input type="checkbox"/> Other	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple
<input type="checkbox"/> Open Channel Width: Top _____ Bottom _____	<input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Concrete	<input type="checkbox"/> Rectangle <input type="checkbox"/> Parabolic <input type="checkbox"/> Trapezoid
<input type="checkbox"/> Manhole <input type="checkbox"/> Catch Basin <input type="checkbox"/> Natural Flowage/ Creek <input type="checkbox"/> Other:		

Section 3: Flow Estimation

Flow Estimation	
Flow Present: <input type="checkbox"/> Yes <input type="checkbox"/> No Standing Water Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Amount: <input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial	Estimated Flow:
Width At Water Surface:	Depth Of Water:
Approximate Flow Velocity:	Calculated Flow Rate:

Section 4: Environmental Conditions

Environmental Conditions

Cloud Cover (%):

Air Temp. (°C):

Wind:

Last Rain Event: <48 Hours 48 to 72 Hours >72 Hours

Amount:

Section 5: Analytical Results

Analytical Results			
Samples Collected From: <input type="checkbox"/> Flow <input type="checkbox"/> Pool		Date:	Time:
		Initials:	
Parameter	Results	Parameter	Results
Water Temperature	°C	Color	Color Units
pH	s.u.	Copper	mg/l
Conductivity	µmhos/cm	Detergents	mg/l
Dissolved Oxygen	mg/l	Fluoride	mg/l
Dissolved Oxygen	% Sat.	Hardness	mg/l
Ammonia	mg/l	Phenols	mg/l
Chlorine	mg/l	Turbidity	NTU
Were Samples Collected For The Laboratory: <input type="checkbox"/> Yes <input type="checkbox"/> No			

Section 6: Outfall Physical Indicators

Outfall Physical Indicators (F=Flow, P=Pool)				
Indicator	Description	Relative Severity		
Odor	<input type="checkbox"/> None <input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Oil/Gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Chlorine <input type="checkbox"/> Solvents <input type="checkbox"/> Other	<input type="checkbox"/> Faint	<input type="checkbox"/> Easily Detected	<input type="checkbox"/> Noticeable from a distance
Color	<input type="checkbox"/> Clear <input type="checkbox"/> Gray <input type="checkbox"/> Green <input type="checkbox"/> Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> Orange <input type="checkbox"/> Other	<input type="checkbox"/> Faint Color In Sample Bottle	<input type="checkbox"/> Clearly Visible In Sample Bottle	<input type="checkbox"/> Clearly Visible In Outfall Flow
Particles	<input type="checkbox"/> None <input type="checkbox"/> Fine <input type="checkbox"/> Medium <input type="checkbox"/> Large	<input type="checkbox"/> Slight	<input type="checkbox"/> Moderate	<input type="checkbox"/> Heavy
Floatables	<input type="checkbox"/> None <input type="checkbox"/> Sewage <input type="checkbox"/> Oil <input type="checkbox"/> Foam <input type="checkbox"/> Litter <input type="checkbox"/> Other:	<input type="checkbox"/> Slight	<input type="checkbox"/> Moderate	<input type="checkbox"/> Heavy
Algae & Bacteria	<input type="checkbox"/> None <input type="checkbox"/> Green <input type="checkbox"/> Brown <input type="checkbox"/> Orange	<input type="checkbox"/> Slight	<input type="checkbox"/> Moderate	<input type="checkbox"/> Excessive
Biology	<input type="checkbox"/> None <input type="checkbox"/> Insects <input type="checkbox"/> Mollusks <input type="checkbox"/> Amphibians <input type="checkbox"/> Reptiles <input type="checkbox"/> Fish <input type="checkbox"/> Mosquito Larvae Comments:			
Outfall Damage	<input type="checkbox"/> Normal <input type="checkbox"/> Apparent Damage	Describe:		

Section 7: Illicit Discharge Concerns

Illicit Discharge Concerns (Non-Stormwater Flow Indicators)

- No Obvious Illicit Discharge**
- Possible Illicit Discharge**
- Obvious Illicit Discharge**

Comments:

Illicit Discharge Hotline Incident Tracking Sheet

Illicit Discharge Hotline Incident Tracking Sheet			
Incident ID:			
Responder Information			
Call Taken By:		Call Date:	
Call Time:	Precipitation (inches) in past 24-48 Hours:		
Reporter Information			
Incident Time:		Incident Date:	
Caller Contact Information <i>(Optional)</i> :			
Incident Location <i>(Complete One or More Below)</i>			
Latitude and Longitude:			
Stream Location or Outfall #:			
Closest Street Address:			
Nearby Landmark:			
Location Description			
<input type="checkbox"/> Stream Corridor (In or adjacent to stream)	<input type="checkbox"/> Outfall	<input type="checkbox"/> In-stream Flow	<input type="checkbox"/> Along Banks
<input type="checkbox"/> Upland Area (Land not adjacent to stream)	<input type="checkbox"/> Near Storm Drain		<input type="checkbox"/> Near Other Water Source (Pond, wetland, etc.)
Narrative Description of Location:			

Modified From: Illicit Discharge Detection and Elimination: A Guidance Manual (Center for Watershed Protection & Robert Pitt, University of Alabama)

Illicit Discharge Hotline Incident Tracking Sheet

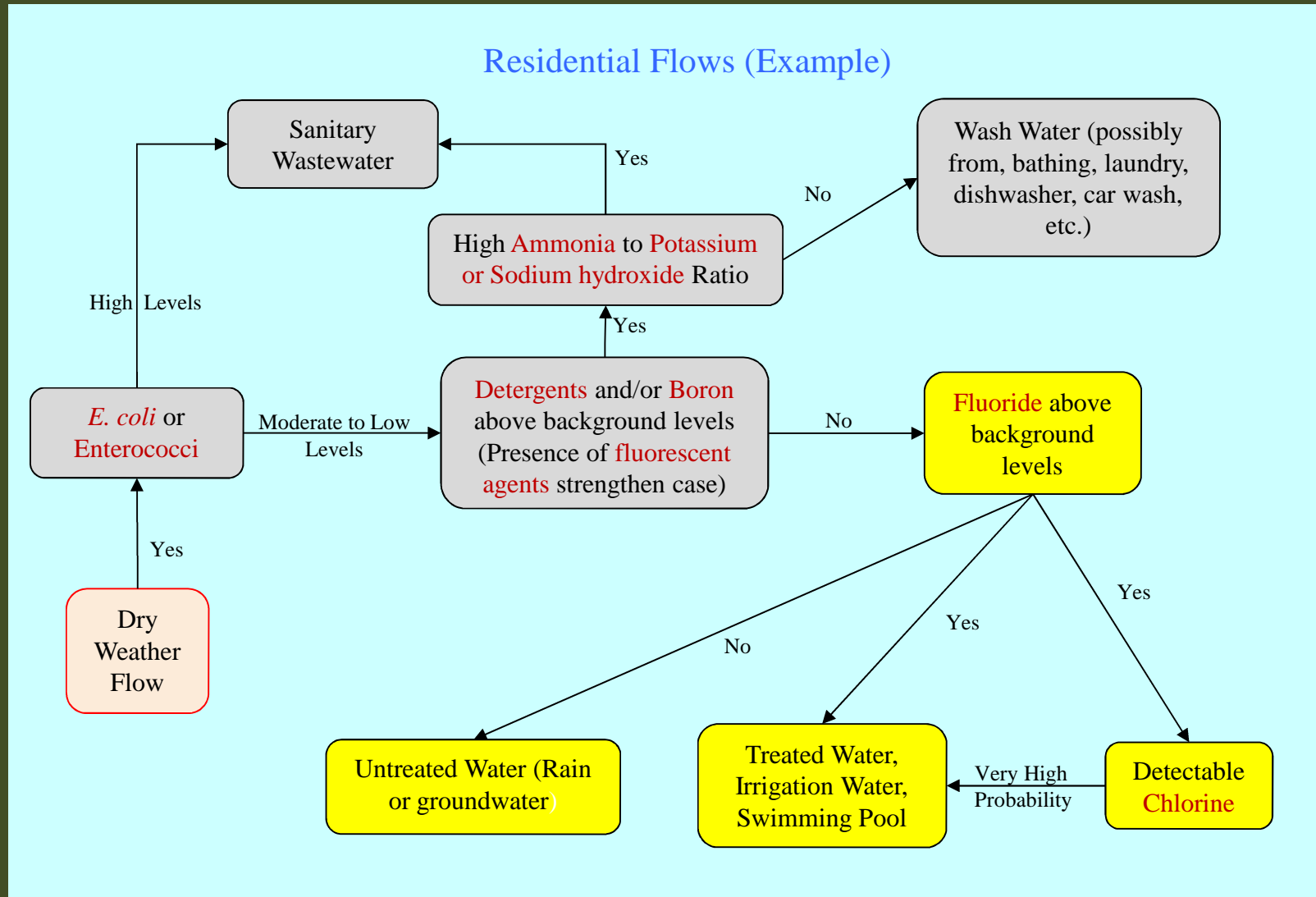
Upland Problem Description				
<input type="checkbox"/> Dumping		<input type="checkbox"/> Oil/Solvents/Chemicals		<input type="checkbox"/> Sewage
<input type="checkbox"/> Wash Water, Suds, etc.		<input type="checkbox"/> Other:		
Stream Corridor Problem Description				
Odor	<input type="checkbox"/> None	<input type="checkbox"/> Sewage	<input type="checkbox"/> Rancid/Sour	<input type="checkbox"/> Petroleum (gas)
	<input type="checkbox"/> Sulfide (rotten eggs); Natural Gas		<input type="checkbox"/> Other: Describe in “Narrative Section”	
Appearance	<input type="checkbox"/> Normal		<input type="checkbox"/> Oil Sheen	<input type="checkbox"/> Cloudy
	<input type="checkbox"/> Other: Describe in “Narrative” Section			
Floatables	<input type="checkbox"/> None	<input type="checkbox"/> Sewage (toilet paper, etc.)	<input type="checkbox"/> Algae	<input type="checkbox"/> Dead Fish
	<input type="checkbox"/> Other: Describe in “Narrative” Section			
Narrative Description of Problem Indicators:				
Suspected Violator (name, personal or vehicle description, license plate #, etc.):				

Illicit Discharge Hotline Incident Tracking Sheet

Investigation Notes	
Initial Investigation Date:	Investigators:
<input type="checkbox"/> No Investigation Made	Reason:
<input type="checkbox"/> Referred to Different Department/Agency	Department/Agency:
<input type="checkbox"/> Investigated: No Action Necessary	
<input type="checkbox"/> Investigated: Requires Action	Description of Actions:
Hours Between Call and Investigation:	Hours to Close Incident:
Date Case Closed:	
Notes:	

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Residential Source Tracking Example



Deposits, Stains and Vegetation

Deposits, stains and vegetation may indicate previous discharges or intermittent flows.



Dry Weather Flow

This outfall was flowing during a dry weather time and when walked back, was runoff from a splash pad.



Dry Weather Flow

This is a permitted discharge discovered during a dry weather field screening event.



Concrete Stain

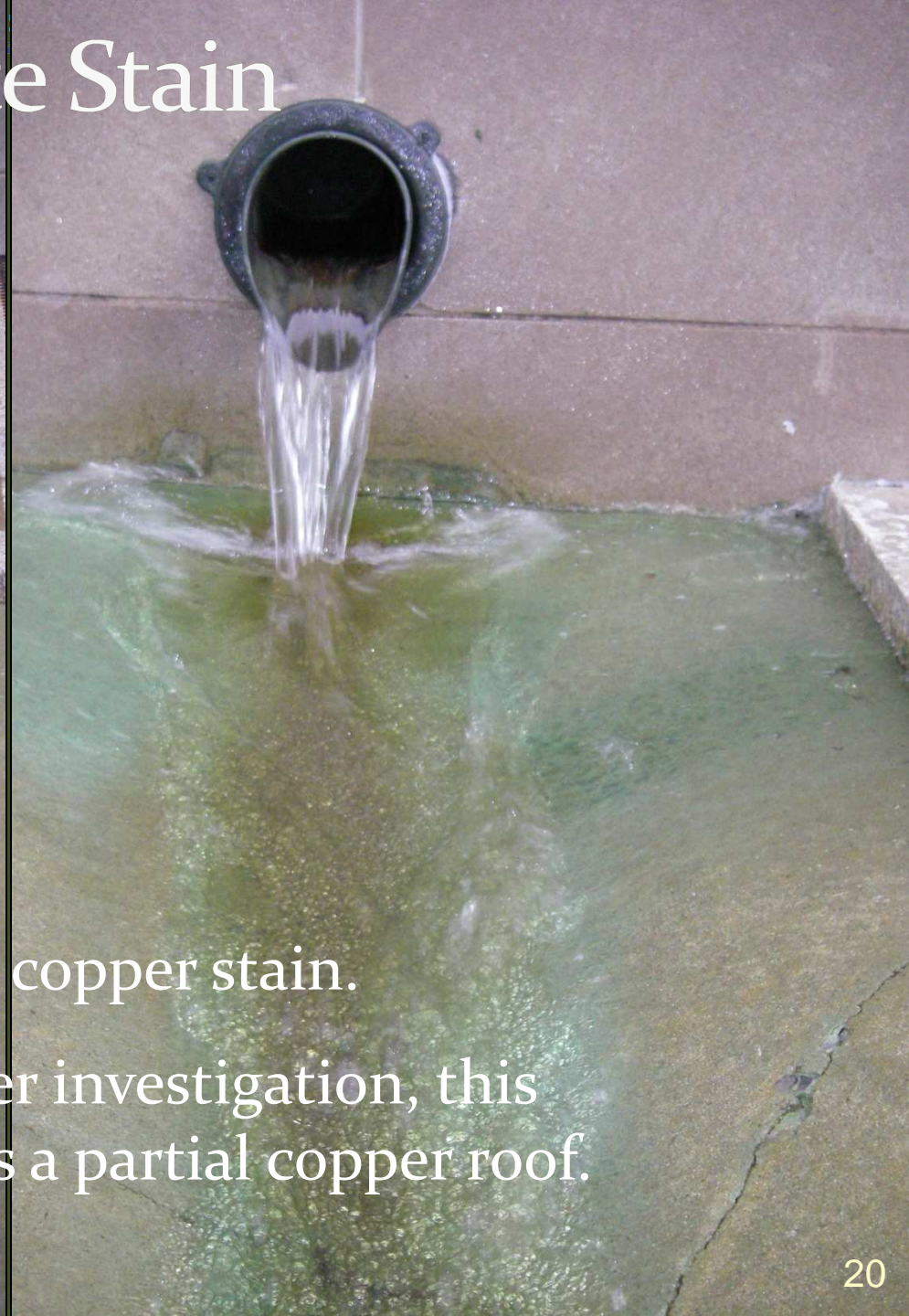
This stain is on a sidewalk.
Hmm?

Concrete Stain

And the stain
led back to
this outlet.



Concrete Stain



Looks like a copper stain.

Upon further investigation, this building has a partial copper roof.

Deposits and Stains

Is there anything recognizable in the deposit or can it be scraped off for analysis?




Deposits and Stains

We have deposits and staining, but what is causing it?



Questions?

A photograph of a brown and white speckled dog, possibly a Weimaraner, standing in a vast field of tall, golden grass. The dog is facing left and has a green collar with a gold bell. The background shows a line of trees under a clear sky.

Until man duplicates a blade of grass, nature can laugh at his so-called scientific knowledge.
Thomas Edison