



**DELDOT AGREEMENT 1351**  
**ENVIRONMENTAL WATER QUALITY MONITORING**  
**OUTFALL INSPECTION & MONITORING**  
**2008 REPORT**



As part of the Delaware Department of Transportation's National Pollutant Discharge Elimination System General Permit Program Regulations Governing Stormwater Discharge, KCI Technologies, Inc. was contracted to conduct dry weather outfall inspection and monitoring of DelDOT owned storm drain outfalls in New Castle County.

**A. CANNOT ACCESS-CANNOT LOCATE (CA-CL) OUTFALLS**

DelDOT requested that KCI make one more attempt to locate or access these outfalls, which were identified on mapping, but not in the field, during a previous contract with Duffield Associates. In 2008, KCI attempted to access or locate 150 CA-CL outfalls in New Castle County; 26 DelDOT outfalls were accessed or located and 4 Non-DelDOT outfalls were accessed or located (**Table 1**).

For outfalls that were found, KCI determined a temporary GPS location. The GPS coordinates were entered into the DelDOT NPDES Database and given a unique temporary symbol. As re-inspection and initial inventory and inspection progresses as part of Agreement 1354, KCI field crews that encounter these outfalls will perform a detailed inventory and inspection. The temporary GPS location and symbol will be replaced with the permanent GPS location and symbol.

**B. PREVIOUS DRY WEATHER FLOW OUTFALLS**

DelDOT requested that KCI re-visit these outfalls, which were determined to have dry weather flow during a previous contract with Duffield Associates. In 2008, 190 outfalls were revisited (**Table 1**). This completed the task started in 2006 of re-visiting the 509 New Castle County outfalls that Duffield encountered with dry weather flow. Field data from these re-visits are currently being added to the DelDOT NPDES Database.

**C. INITIALLY SCREENED OUTFALLS**

In 2008, 361 outfalls were screened (**Table 1**) as part of the re-inspection and initial inventory and inspection tasks in New Castle County under Agreement 1354. Any outfalls encountered with dry weather flow are screened as per the methodologies developed under Agreement 1351.

**TABLE 1  
 OUTFALL SCREENING SUMMARY**

<b>CA / CL OUTFALLS</b>						
<b>Month (2008)</b>	<b>Outfalls Searched</b>	<b>DeIDOT Outfalls Located</b>		<b>Non-DeIDOT Outfalls Located</b>		
January	150	26		4		
<b>TOTAL</b>	<b>150</b>	<b>26</b>		<b>4</b>		
<b>PREVIOUS DRY WEATHER FLOW OUTFALLS</b>						
<b>Month (2008)</b>	<b>Outfalls Completed</b>	<b>Total Non-DeIDOT</b>	<b>Total DeIDOT With Flow</b>	<b>Targeted by Rating</b>	<b>PID</b>	<b>Ground-water</b>
January	0	0	0	0	0	0
February	4	0	2	2	1	1
March	16	2	14	5	0	14
April	46	11	18	15	0	18
May	36	18	12	0	0	12
June	39	7	24	2	2	24
July	14	7	0	0	0	0
August	0	0	0	0	0	0
September	0	0	0	0	0	0
October	25	11	3	0	0	3
November	10	1	3	0	0	3
December	0	0	0	0	0	0
<b>TOTAL</b>	<b>190</b>	<b>57</b>	<b>76</b>	<b>22</b>	<b>3</b>	<b>75</b>
<b>INITIALLY SCREENED OUTFALLS</b>						
<b>Month (2008)</b>	<b>Outfalls Completed</b>	<b>Total Non-DeIDOT</b>	<b>Total DeIDOT With Flow</b>	<b>Targeted by Rating</b>	<b>PID</b>	<b>Ground-water</b>
January	19	0	0	0	0	0
February	21	0	0	0	0	0
March	14	0	0	0	0	0
April	25	0	1	1	0	1
May	40	0	1	1	0	1
June	32	0	0	0	0	0
July	18	0	0	0	0	0
August	12	0	0	0	0	0
September	25	0	0	0	0	0
October	51	0	0	0	0	0
November	73	0	0	0	0	0
December	31	0	0	0	0	0
<b>TOTAL</b>	<b>361</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>

**D. POTENTIAL ILLICIT DISCHARGES**

In 2008, nine Potential Illicit Discharges (PIDs) were investigated, as summarized in **Table 2**. Each of the PIDs listed in **Table 2** is described in more detail below.

The nine PID investigations resulted from the following:

- Three PIDs - Outfalls 318, 2542, 2543 – discovered by KCI field crews performing outfall screening of outfalls with previous dry weather flow.
- Two PIDs: - 4662 Forrest Ave. and 91 Limerick Lare Rd - discovered by Century Engineering (CEI) while completing MS4 inventory and inspections in Kent County.
- Four PIDs - referred to KCI personnel by DelDOT and New Castle County personnel.

**TABLE 2  
 2008 POTENTIAL ILLICIT DISCHARGE INVESTIGATIONS**

<b>Date</b>	<b>County</b>	<b>Address</b>	<b>Type Waste</b>	<b>Determination</b>
02-27-08 *	New Castle	B&O Lane in front Euro-Tech Auto Garage	Discharge tested high for pH/detergents/turbidity; strong petroleum odor and visible oil sheen.	Non-DelDOT (Referred to NCCo)
04-08-08	Kent	91 Limerick Lare Rd	Other(Sludge) dumped into catch basin	Distributed Door Hangers
05-15-08	New Castle	32 Dynasty Dr (Mansion Farms)	Cooking grease in catch basin	Distributed Door Hangers
06-09-08 *	New Castle	Lea Blvd.	Discharge test high for detergents and ammonia; sewage odor and visible toilet paper around outfall	Non-DelDOT (Referred to NCCo)
06-09-08 *	New Castle	Lea Blvd.	Discharge high for detergents; sewage odor and visible toilet paper around outfall	Non-DelDOT Referred to NCCo
08-26-08	New Castle	Summit Pond	Dog Waste/Yard Clippings found in catch basin	No Action/No Signs of dumping
09-15-08	New Castle	Troy Avenue (Woodcrest)	Visible oil running down driveway	Distributed Door Hangers
09-22-08 * 11-11-08	Kent	4662 Forest Avenue	Discharge tested high for ammonia, detergents and phenols	Pipe from washing machine re-routed to septic tank
11-12-08	New Castle	900 Hazeldell Ave	Oil/Antifreeze draining into catch basin	Distributed Door Hanger

\*Additional information regarding the PIDs is provided in **Appendix 1**.

***Outfall 318 (New Castle County):***

On February 27, 2008, KCI field crews discovered an outfall discharge that tested high for pH, detergents and turbidity. In addition, the discharge had a strong petroleum odor and visible oil sheen. The PID was discharging directly into Little Mill Creek. The discharge source could not be directly pinpointed, but it was assumed to be coming from one of multiple commercial automobile garages in the vicinity. It was determined that the outfall and surrounding drainage area located within the limits of the Town of Elsmere, with the border being Little Mill Creek. DelDOT was notified of the PID determination at a Project Status Meeting and passed this information to the Town.

***91 Limerick Lare Road (Irish Hill, Kent County):***

On April 2, 2008 CEI observed a catch basin full of cooking grease or oil while performing MS4 re-inspections in the Irish Hill development of Kent County. CEI compiled an IDDE tracking form and reported the situation to KCI and DelDOT. On April 8, 2008, KCI field personnel investigated the catch basin in front of 91 Limerick Lane Rd. Upon performing the investigation, approximately three inches of cooking grease/oil was observed in the bottom of the catch basin. Door hangers were distributed to the residences to make them aware that it is illegal to dump or dispose of any substance in the storm sewer system. Approximately 20 door hangers were distributed on April 8, 2008. While attempting to deliver the door hanger to the resident closest to the catch basin, she was irate and ripped up the door hanger upon receiving it. The oil/grease could not be removed by KCI field personnel due to the depth of the catch basin.

***32 Dynasty Drive (Mansion Farms, New Castle County):***

In May 2008 DelDOT notified KCI of a possible illicit discharge at 115 Marble House Road in Mansion Farms. DelDOT was informed that the resident dumped cooking grease into a catch basin located at the corner of Marble House and Dynasty Dr. KCI field personnel investigated the possible illicit discharge on May 8, 2008 and determined there was evidence of illegal dumping in the catch basin. KCI field personnel distributed approximately 50 door hangers in Mansion Farms on May 16, 2008.

***Outfall 2542 (New Castle County):***

On June 9, 2008 KCI field crews discovered an outfall discharging directly into Matson Run, that tested high for detergents, and ammonia. Also, the discharge had a sewage like odor and visible signs of toilet paper around the outfall. KCI investigated the surrounding area to determine a possible source and to verify outfall ownership. The discharge source was unable to be traced back to its original source. It was determined that the outfall was within the city of Wilmington in a County park. DelDOT was notified of the PID determination at a Project Status Meeting and forwarded the information to the County.

***Outfall 2543 (New Castle County):***

On June 9, 2008 KCI field crews discovered an outfall discharge that tested average for ammonia and high for, detergents. In addition, the discharge had a sewage like odor and visible signs of toilet paper around the outfall. The PID was discharging directly into Matson Run. The surrounding area was investigated to determine a possible source and to verify outfall ownership. The discharge source was unable to be traced back to its original source. It was determined that the outfall is within the city of Wilmington in a County park. DelDOT was notified of the PID determination at a Project Status Meeting and forwarded the information to the County.

***Summit Pond:***

On August 26, 2008 KCI investigated a PID in Summit Pond that was reported by a resident to DelDOT. The anonymous caller reported that someone dumped grass clippings and dog waste in a neighborhood catch basin, but did not give a specific address. KCI investigated all the catch basins and did not locate any illicit dumping. The majority of the catch basins are located in residential yards, which may lead to grass clippings being inadvertently blown into them during routine mowing. No further action was taken regarding this matter.

***Troy Avenue (Woodcrest, NCCo):***

DelDOT North Maintenance District received a call from a resident stating that a neighbor's vehicle had a visible stream of oil running down the driveway. On September 4, 2008 KCI personnel determined that it was a one-time incident. There was a trail of oil-stained pavement leading down the street and stopping at a nearby school. KCI found no further evidence of oil being dumped into the street or the storm sewer system. KCI field personnel distributed approximately 20 door hangers to the surrounding residences.

***4662 Forest Avenue (Kent County):***

On September 5, 2008 CEI field crews performing MS4 inventory and inspection notified KCI and DelDOT of a possible illicit pipe connection to a catch basin in front of 4662 Forest Avenue. KCI conducted follow up testing of flow from the 2 inch pipe into the catch basin. The tests found high levels of ammonia, detergents and phenols. A certified letter (Notice of Potential Illicit Discharge) on DelDOT letterhead was sent to the property. The property owner contacted KCI and stated he was aware that the washing machine in the home was connected to the catch basin. The property owner indicated this had been the case when he both the property and did not know this was an illicit connection. The property owner promptly re-routed the pipe to the on-site septic system. On November 11, 2008, KCI field personnel verified that the property owner had properly re-routed the pipe to the septic tank on the property.

***900 Hazeldell Avenue (Minquedale East, NCCo):***

On November 12, 2008, DeIDOT notified KCI of a PID at 900 Hazeldell Avenue in Mindquadale East. A neighbor reported that the resident at 900 Hazeldell Avenue dumped automotive oil and antifreeze onto the pavement, which he stated flowed into a catch basin located in front of 903 Camden St. On November 13, 2008, KCI field personnel investigated and found the curb in front of the house was stained with an oil residue which continued down towards the catch basin in front of 903 Camden St. However, there was no actual oil or antifreeze present at the time of inspection. Also, there was no evidence of oil or antifreeze in the catch basin. KCI field personnel distributed approximately 16 door hangers to the surrounding residences.

**E. NEXT STEPS**

DeIDOT asked KCI to develop a methodology for determining drainage areas for major outfalls and BMPs. KCI is currently waiting for 2-foot contour data to become available in New Castle and Kent Counties so that this work may begin.