

# Summary of DeKalb County's Discovery, Investigation, and Correction of Sanitary Sewer Overflows Reporting Concerns

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### **Acronyms**

CERP Contingency and Emergency Response Plan

DWM Department of Watershed Management

EPA U.S. Environmental Protection Agency

EPD Georgia Environmental Protection Division

GIS Geographical Information System

QA/QC Quality Assurance/Quality Control

SSO Sanitary Sewer Overflow

WCTS Wastewater Collection and Transmission System

### Summary of DeKalb County's Discovery, Investigation, and Correction of Sanitary Sewer Overflows Reporting Concerns

### Introduction

DeKalb County (the "County") Department of Watershed Management ("DWM") has prepared this report to summarize the County's discovery, investigation and correction of sanitary sewer overflows ("SSOs") reporting concerns. The report is divided into five sections, describing the circumstances that led to the discovery of the misclassification of certain SSO events, the immediate actions the County took to prevent further misclassification, the investigation into the extent of the misclassification (including the results of each phase of such investigation), additional program improvements being implemented as a result of this review, and the overall conclusion of this investigation into past DWM SSO-related practices.

As the report shows, the County took immediate action to avoid additional misclassification and underreporting of SSOs, informed the U.S. Environmental Protection Agency ("EPA") and the Georgia Environmental Protection Division ("EPD") of the problem, undertook an extensive investigation to fully assess the problem, and instituted numerous corrective actions and other improvements to ensure the problem would not be repeated. It is the County's hope that EPA and EPD will agree that the County's efforts to address the concerns were comprehensive, and demonstrated an appropriate level of responsiveness to correct deficiencies as they are discovered.

### **Section 1. What Happened (Discovery)**

In early 2016, the County became aware of inconsistencies between the frequency and classification of actual SSO events versus what was being reported to EPA and EPD. These inconsistencies first came to light primarily in relation to a residence located in Decatur, Georgia. The County received inquiries from both the residents and EPA regarding what the residents reported to be repeat SSOs at that location beginning in November, 2015. At the time these inquiries were received, the County had reported a total of two SSOs at that location in November and December, 2015.

In light of the inconsistencies regarding the SSO events (i.e., how many and what type of SSOs) at the Decatur residence during this period, the County began investigating its own internal procedures and renewed a dialog with the residents to ensure that the County had a firm understanding of the events that occurred at the residence and to further ensure that all requirements relating to the reporting of SSOs had been followed. Scott Towler, the current DWM Director, began his tenure with the County in October 2015 and had already initiated a review of internal methods and procedures with the assistance of his deputies Margaret Tanner and Reginald Wells. Ms. Tanner and Mr. Wells both began working for the County in December, 2015.

As DWM's new management team began looking into the inconsistencies between the reports from the residents at the Decatur address and the events reported to EPA and EPD, internal records confirmed that DWM crews had visited the Decatur residence eight times in November and December, 2015, but SSOs had only been reported as having occurred on two of those eight dates. When DWM crew reports from those additional dates were reviewed and the responding crews interviewed, it became apparent that while DWM crews were accurately recording what they saw when responding to each of these events, an incorrect standard was being applied when classifying these events and determining if such events were reportable SSOs pursuant to the Consent Decree.

Further investigation into internal DWM practices revealed that DWM crews had been improperly trained not to classify an event as a SSO if they did not themselves witness an "active" event. In other words, DWM crews had been instructed only to classify an event as a SSO when they themselves witnessed wastewater leaving the County's Wastewater Collection and Transmission System ("WCTS"). As a result, DWM crews were not classifying events as SSOs even when they saw evidence that a SSO had occurred unless they themselves witnessed the effluent leaving the WCTS.

Upon discovery that DWM crews had been improperly trained to distinguish between "active" and "inactive" events, the County had two immediate concerns. The first immediate concern was to ensure that all potential SSOs that occurred from that point forward were properly investigated, classified, and reported. The second immediate concern was discovering the extent of the previous misclassification to ensure compliance with the reporting requirements under the Consent Decree.

### **Section 2. Immediate Actions**

To ensure that all potential SSOs that occurred moving forward were properly investigated, classified and reported, the County initiated an in-depth review of its SSO response and reporting process from the time a call is received by Dispatch until the time a particular issue is deemed to have been addressed. The County also notified EPA and EPD that it had become aware of the potential reporting issues and that County was reviewing the matter.

The review identified or confirmed several significant concerns. First, the review revealed that the checks and balances in the SSO classification and reporting process may not have been adequate. Specifically, the decision as to which potential SSOs should or should not be reported appears to have been made by one individual with no oversight, review, or quality control mechanism in place. Second, the review confirmed that DWM crews had been trained that an event was not to be classified as a SSO if the crew did not see wastewater actively leaving the system. When the County determined that this improper standard originated with the former Interim DWM Director/Deputy Director of Operations, appropriate personnel action was immediately initiated. Finally, this review showed that, in many instances, the failure to properly classify an event as a SSO meant that the work plans for longer term repairs had not been developed in accord with Consent Decree requirements.

Once the County determined that this artificial delineation between "active" and "inactive" SSO events was the primary cause of the potential underreporting of SSOs, retraining of response crews began immediately. Each member of a first response crew was retrained to clarify that any evidence of wastewater having left the WCTS is sufficient to classify that particular event as a reportable SSO. First response crews were also retrained on the distinction between spills, overflows, and building backups and that any evidence that discharge from the WCTS entered waters of the State is reportable as a spill. In addition to the immediate training of all first response crews, the reporting process was redesigned to include additional decision makers to ensure proper and consistent classification of SSO events. These training enhancements were incorporated into the new employee training program to ensure consistency moving forward.

In addition to training aimed directly at first response crew members, the majority of DWM employees, including first response crew members, were retrained on the requirements of the Contingency Emergency Response Program ("CERP"). This training focused on definitions and reporting requirements, emphasizing SSO identification and root cause analysis. To assist the crews in identifying a potential SSO and properly classifying same in accord with the Consent Decree, a one page reference sheet (Appendix A) including examples of spills, overflows, and building back-ups, was developed for use in the field. As is the case for first responder training, these training enhancements have also been incorporated into the new employee training to ensure consistency moving forward.

Once the immediate actions outlined above were instituted to ensure that all subsequent potential SSOs were properly classified, the County turned its attention to an effort to determine the extent of the misclassification of potential SSOs and efforts to ensure compliance with all Consent Decree Reporting requirements.

### **Section 3. Investigative Review Process**

To ensure compliance with the reporting requirements under the Consent Decree and to correct any deficiencies in SSO data collection, classification, and reporting, the County conducted an extensive three-phased investigative review of SSO-related records. The County performed this investigative review over a five-month period. To facilitate this process, the County engaged third party firms to provide oversight, evaluations, and quality control/quality assurance ("QA/QC"). Over the course of the review, the County, with the support of the third party firms, reviewed thousands of documents, conducted numerous interviews of DWM staff, and reviewed relevant information from external sources. The purpose, description, and results of each phase of the investigative review process are summarized in Table 1. Specific details regarding each phase of the investigative review process are provided below in sub-sections 3.a, 3.b, and 3.c, with an overall summary of the results of the investigation presented in Section 3.d.

**Table 1.** Summary of the Phased Investigative Review Process

Phase	Purpose of Review	Description of Review	Number of Documents Evaluated	Number of Additional / Reclassified SSOs
I	To use information in DWM's Service Request tracking system to verify the accuracy of how SSOs were previously classified and reported	Review 2012-2015 and Q1 2016 Service Requests corresponding to sewer repair codes specified in the CERP and one additional code (M16) <sup>2</sup>	14,222	761
II	To investigate external sources of information potentially impacting the reporting and classification of SSOs	Review of 2012-2016 emails to and from the former Interim DWM Director/Deputy Director of Operations and the DWM Superintendent in charge of Sewer Operations	205,564	7
IIIA	To expand the "M" codes review to verify whether additional relevant Service Requests may have been assigned "M" codes not listed in the CERP, but closely related to those in the CERP	Review of 2012-2016 Service Requests with sewer codes M19- Customer Check Sewer, M33- Manhole Inspect, M36-Service Call Sewer, M40-Odor Complaint, and M50-Creek Crossing Repair	7,556	22
IIIB	To further expand the "M" codes reviewed	Review of 10% of 2012-2015 Service Requests with "M" and "C" codes that were not reviewed in Phases I or IIIA	2,498	1
IIIC	To verify whether relevant Service Requests may have been assigned water- related codes	Review of 2012-2015 Service Requests with water code W52 Main/Service Leak, Check	28,281	0

### 1. Phase I (CERP Service Request Review)

To assess the full scope of the inconsistencies in classifying SSO events and its impact on SSO reporting, the County engaged an independent third party engineering team with personnel from CH2M and Joe Tanner and Associates (Review Team) to assist the County in performing a review of Service Requests tied to the CERP<sup>3</sup> dating to the beginning of the Consent Decree period. The Service Requests are the

<sup>&</sup>lt;sup>1</sup> During the investigative review phases, the County retrieved information which, when evaluated, resulted in the reclassification of some SSOs that may have been previously reported. For example, a previous report of an overflow may have been reclassified as a spill post-investigation.

<sup>&</sup>lt;sup>2</sup> Code descriptions are provided in subsequent sections.

<sup>&</sup>lt;sup>3</sup> The CERP lists 19 "M" codes that were developed to catalogue public and private SSOs and various response actions undertaken by DWM to resolve the causes of the SSOs.

means by which the County documents its response to reports of sewer emergencies, repair requirements, and maintenance needs.

By way of background, DeKalb County maintains a database of its Service Requests. DWM personnel are required to complete Service Requests in accordance with the CERP, which specifies certain codes for use in completing Service Requests documentation to facilitate tracking. The CERP requires all responses or activities related to SSOs be assigned certain "M" codes. As an example, a surcharging manhole is documented and tracked in the database as M87. Activities related to the water system are assigned a "W" code, while Consent Decree-related projects are assigned a "C" code. All Service Requests completed during the course of the Consent Decree period have been added to the database, which contains over a million Service Requests.

Given that the original purpose of the investigation was to verify whether SSOs were being properly classified, the County determined that the relevant universe of Service Requests on which to focus would be those tied to the CERP with specific "M" codes, as those Service Requests would provide the best available historical records of the identification of potential SSOs and the County's responses to them. Accordingly, the County retrieved those Service Requests whose "M" codes are listed in the CERP. Even though it is not listed in the CERP, the County also included the "M16 Back-up, Check" code because this code is typically used to classify incidents in a lateral or building where the County determined a building backup had not occurred. As such, the codes used to pull Service Requests during the Phase I review to assess the classifications of SSOs included:

- 1. M16 Back-up, Check;
- 2. M80 Sewer Spill, Private Business, School, Other;
- 3. M82 Sewer Spill, Private Residential;
- 4. M83 Sewer Spill, Private Multi-Family;
- 5. M84 Health Department Notification of Spill Related Item;
- 6. M86 Sewer Spill, Building Back-up;
- 7. M87 Manhole Surcharge;
- 8. M88 Constructed Overflow Repair;
- 9. M89 Sewer Spill, Main Line Blockage;
- 10. M90 Sewer Spill;
- 11. M91 Sewer Spill, Manhole Overflow;
- 12. M92 Sewer Spill, Cleanout Overflow;
- 13. M93 Sewer Spill, Creek Crossing Leaking;
- 14. M94 Sewer Spill, Sewer Main Leak;
- 15. M95 Sewer Spill, Lift Station;
- 16. M96 Sewer Spill, Force Main;
- 17. M97 Sewer Spill, Grease Trap Overflow;
- 18. M98 Sewer Spill, Surface; and
- 19. M99 Sewer Spill, Septic.

Out of a total of the 206,003 Service Requests generated from 2012-2015, the County's Information Technology personnel retrieved 13,383 Service Requests over the same period related to the nineteen "M" codes specified above. Similarly, the County also retrieved 839 Service Requests tagged with the nineteen "M" codes corresponding to the first couple of months in 2016 to verify the accuracy of the 2016 First Quarterly Report. The Review Team evaluated the retrieved Service Requests and classified those Service Requests based on the following categories:

Likelihood SSO occurred: Yes/Likely or No/Unlikely

• Type of SSO: Spill, Overflow or Building Backup

• Private Issue: Yes or No

Cause of SSO Occurred in a Lateral: Yes or No

To enable the Review Team to make the above determinations, particularly whether the cause of the SSO occurred in a lateral or whether it was private, the Review Team relied on the County's CERP Guide to Private Laterals Building Backups and Private Manhole SSOs depicted in Appendix A.

Relying on Service Requests that are now up to four years old, the County used an overwhelmingly conservative approach during this phase of the evaluation. For instance, even though a Service Request may not have provided enough information for the evaluator to definitely conclude that a SSO occurred, the County placed significant emphasis on the likelihood that an event took place. Hence the Review Team determined that a Service Request with the following classification was indeed a SSO:

- Likelihood=Yes/Likely
- Private Issue=No
- Cause of SSO Occurred in a Lateral=No

The Review Team proceeded to compare the resulting list of Service Requests detailing what they now classified as SSOs with the list of SSOs previously reported to EPA/EPD to determine the subset of SSOs that had not been previously reported. Additional personnel on the Review Team conducted a 25% QA/QC review of Service Requests for each year as well as 100% QA/QC review of the Service Requests detailing SSOs now tagged as not being previously reported.

After completion of the review by the Review Team, the Service Request classifications were submitted to DWM for review, which included 5% QA/QC review of Service Requests and 100% QA/QC review of previously unreported SSOs. During the QA/QC process, DWM personnel retrieved claims data relating to individuals impacted by building backups to cross check those claims with information gleaned from the Service Requests, evaluated information from the response crews regarding specific incidents outlined in the Service Requests, and considered information in the County's Geographical Information System ("GIS") system related to spatial consideration of manhole/pipe locations. Again, during this evaluation, if DWM personnel could not retrieve additional information to clarify whether a Service Request should be classified as a SSO, the County made the determination to include that Service Request as a report of a SSO.

Upon completion of DWM's review, the reportable SSOs were finalized and submitted to EPA/EPD on August 1, 2016 as a supplement to the previously submitted quarterly reports. A summary of the results

of this Phase I investigation is provided in Figure 1 that compares the number of SSOs by type and year as reported previously to those discovered at the conclusion of the Phase I review. The results indicate an unusually large spike in overflows and building backups, which the County believes is attributable to the County's conservative approach to the investigation. While the County recognized an uptick in building backups in the third quarter of 2016, a closer look at those numbers revealed the primary cause of those building backups is directly related to a contractor cleaning in the lines where the building backups are occurring.

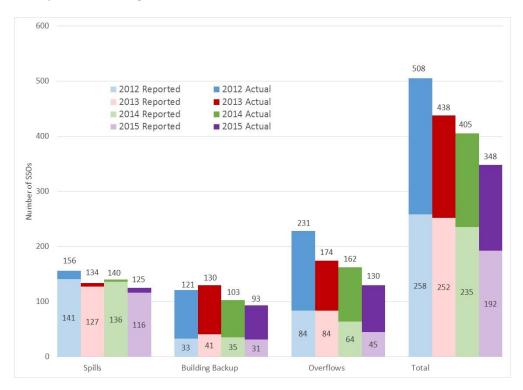


Figure 1. Results of the Phase I Investigation (2012-2015)

### 2. Phase II (Email Review)

The focus at the onset of the Phase I investigation, detailed above, was on the SSO classification that resulted from the SSO information documented in the Service Requests, with the assumption that any SSO information that came into the County ultimately came through the dispatch center and was converted to a DWM Service Request. At the conclusion of the Phase I review, and after discussing the results with EPA/EPD, the County initialized Phase II to confirm whether information from external sources, such as emails, may have identified previously unreported SSOs that did not make it into the Service Request process or that could provide additional insight into the proper classification of previously identified SSOs.

As noted earlier, the County generates Service Requests in response to reports of sewer emergencies, repair requirements, and maintenance needs. These Service Requests are most often generated by the Dispatch Center typically in response to emergency phone calls (via the reporting line at 770-270-6243) or a report submitted through a link on DWM's website. Service Requests can also be generated by

information received during the regular course of business via other County touch points, such as when a water crew observes an issue in the sewer system. Recognizing that many individuals and organizations resort to emails to convey information, and after being made aware of certain emails that were sent to the County regarding SSOs, the DWM Director decided to expand the investigation to include email communications to determine whether incidents of SSOs brought to the County's attention via email were being excluded from the Service Request process.

The County narrowed the email investigation to focus on emails to and from the former Interim DWM Director/Deputy Director of Operations and the DWM Superintendent in charge of Sewer Operations. Both of those DWM positions are the primary contacts for the management of emergency response actions. Additionally, these two positions would be the most logical targets through which reports of SSO incidents would be funneled. Accordingly, DeKalb County Information Technology personnel retrieved 205,564 emails and attachments from the two email accounts over the 2012-2016<sup>4</sup> timeframe and made the emails and attachments available for third party review. That review was conducted by the electronic discovery unit of Troutman Sanders LLP (eMerge).

The eMerge team set up an electronic search consisting of twenty-one unique terms, many of which corresponded to past locations of major SSO events. Appendix B includes the search terms and their respective frequency of occurrence in emails and attachments. This initial search identified 30,733 documents containing relevant search terms. The eMerge discovery team then divided the 30,733 documents into two categories - internal communications (made up of email addresses with a DeKalb County governmental domain) and external communications (made up of the remaining documents). These two categories (internal and external communications) were reviewed via two distinct processes.

The eMerge team lead the external email communications review. This began by eliminating clearly irrelevant emails (e.g., emails and attachments about water meter locations that just happen to include one of the search terms or repetitive emails originating from the same parent message chain). This effort limited the external emails that needed closer review to 4,229 documents. The team manually reviewed this batch of documents to identify any potential report of a SSO by classifying a document as (1) Report of SSO; (2) Likely Report of SSO; (3) Not likely report of SSO; or (4) Not report of SSO. The results were subject to QA/QC. In the end, 107 documents were identified as potentially new reports of SSO events and 39 documents as previously reported SSO events. The eMerge team passed on the potential reports of SSOs to the technical support group within DWM for confirmation of the actual occurrence of a SSO.

A team of internal DeKalb County lawyers and support staff conducted the internal email communications review. DeKalb County selected one year, 2014, as a test case to manually review the internal communications to and from the former Interim DWM Director/Deputy Director of Operations. The County reasoned that communications internal to DeKalb County are typically a response action detailing strategies and direction as to how to address a known issue, and would not likely reveal any previously unreported SSOs. This reasoning was justified because the ultimate result of the 2014 review

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<sup>&</sup>lt;sup>4</sup> The County installed a new Deputy Director of Operations in late 2015; therefore, the timeframe of the evaluation was limited to the tenure of the previous Deputy Director with some overlap extending into early 2016.

of internal communications, which started with 3,576 documents, yielded no new additional reports of SSOs and did not provide additional information which would have changed the classification of a SSO that was previously reported. Therefore, the County concluded that the continued extensive use resources to review additional years of internal emails would not be prudent due to the likelihood that those reviews would yield similar results.

The technical support group (comprising the Consent Decree Administrator and DWM operations personnel) conducted the final SSO determinations. The technical support group manually analyzed the resulting documents from the external email communications review and the 2014 internal email communications review where reports of potentially new SSOs were flagged. Upon completion of the initial manual analysis, the County instituted a quality control process where other DWM personnel reviewed the emails and confirmed the classification. The results of this entire investigation by the technical support groups are summarized as follows:

- Incidents described in email were already properly reported as a SSO: 24 emails
- Incidents described in email were private in nature: 39 emails
- Incidents described in email were not a SSO related issue: 9 emails
- Incidents described in email were repeated in another email: 20 emails
- Incidents described in email required further follow up for SSO classification: 6 emails

Hence, the results of this Phase II investigation detailed in Table 2 below did not significantly change the overall outcome of the number of SSOs.

Table 2. Results of the Phase II Investigative Review

Date	Address	SSO Type Previously Reported	Type of Additional / Reclassified SSO
8/21/2013	Green Street	Not reported	Spill
12/22/2013	Green Street	Not reported	Spill
1/11/2014	Green Street	Overflow	Spill
8/8/2014	Green Street	Overflow	Spill
11/7/2015	Green Street	Not reported	Spill
12/29/2015	Green Street	Not reported	Not a SSO
11/2/2015	Hood Circle	Overflow	Spill
3/21/2014	Hood Circle	Overflow	Spill

### 3. Phase III (Additional Service Request Coding Review)

To further ensure a thorough investigation and review process, DWM conducted a series of three additional Service Request reviews in Phase III to verify whether the proper coding had taken place in the documentation of sewer incidents. First, DWM expanded the review of Service Requests to include five additional sewer repair codes that are not outlined in the CERP, but are codes that could be related to a report of a SSO. Second, DWM sampled a percentage of Service Request comprising the remaining sewer "M" codes as well as "C" codes related to Consent Decree projects. The County reasoned that if miscoding occurred, the likelihood of the occurrence would be focused on sewer codes ("M" codes) or Consent Decree codes ("C" codes) and not in the additional DWM codes used for firefighting services, road repairs, dispatch, or customer service activities. Third, DWM reviewed the Service Requests corresponding to the water code W52 (Main/Service Leak, Check). The County decided to confirm in this final review whether leaks in the sewer system were inadvertently categorized as leaks in the water system.

#### a. Phase IIIA (Review of Five Additional "M" Codes)

DWM selected five additional sewer repair codes for review which included:

- M19 Customer, Check Sewer;
- M33 Manhole, Inspect;
- M36 Service Call, Sewer;
- M40 Odor Complaint, Check; and
- M50 Creek Crossing, Repair.

The County's Information Technology personnel again performed a query of the master Service Request database with focus on the years 2012-2016. The total number of Service Requests retrieved using the additional five repair codes was 9,474 (2012-2015) and the first and second quarters of 2016 includes an additional 1,170 Service Requests for a total of 10,644. The Review Team then reviewed data using the same procedures described in Section 3.a. above where new reports of SSOs from the Service Request review were classified as a spill, overflow, or building backup as detailed in Table 3. The results yielded 22 additional SSOs to be reported or less than 0.3% of the total number of Service Requests analyzed.

Table 3. Results of the Phase IIIA Investigative Review

Year	Service Requests Retrieved (Phase IIIA)	Service Requests After Removing Duplicates Reviewed in Phase I	Total Spills Post Review	Total Overflows Post Review	Total Building Backups Post Review	Total SSOs Post Review
Q1/Q2 2016	1170	782	0	3	0	3
2015	2415	1799	0	5	0	5
2014	1974	1526	0	4	0	4
2013	2151	1362	3	3	0	6
2012	2934	2087	3	1	0	4
TOTAL	10644	7556	6	16	0	22

#### b. Phase IIIB (Review of "M" and "C" codes)

The County once again queried the Service Request database and retrieved Service Requests with repair codes of "M" signifying a sewer repair or "C" signifying a consent decree-related activity. The Review Team then selected 10% of the retrieved Service Requests and removed the previously evaluated Service Requests. The Review Team followed a similar process of evaluation and QA/QC as with the Phase I evaluation. The review of these Service Requests yielded only one unreported overflow (or less than half a percent of the total Service Requests reviewed) as shown in Table 4. In light of such low yields, the County decided that utilizing extensive resources would be inappropriate with such diminishing returns.

**Table 4.** Results of the Phase IIIB Investigative Review

Year	Service Requests Retrieved (Phase IIIB)	Service Request Reviewed (10% of Total)	Service Requests After Removing Duplicates Reviewed in Phase I and IIIA	Total Spills Post Review	Total Overflows Post Review	Total Building Backups Post Review
2015	6990	699	524	0	0	0
2014	8160	816	591	0	1	0
2013	9800	980	750	0	0	0
2012	9006	901	633	0	0	0
TOTAL	33956	3396	2498	0	1	0

#### c. Phase IIIC (Review of Water Codes)

The County identified over 89,000 water ("W") coded Service Requests created from 2012-2015. The code W52 Main/Service Leak, Check was the most used "W" code and the code most likely to be mistaken for a report of a possible SSO narrowing the universe of Service Requests to be reviewed to 28,281. Those W52 Service Requests were reviewed by searching for terms in the close out comments

for "sewer", "sewerage", "lateral", "overflow", "spill", "stub", "manhole", "sewage", "backup" and "back up". If the search term was present in the close out comments, the Service Request was reviewed and flagged if it described a sewer issue instead of a water issue. In addition to the key word search, 1000 Service Request records were read for content in the comments to determine if the record indicated a sewer issue and not a water issue.

This Phase IIIC investigation resulted in:

- 28,281 Service Request records were identified with the W52 problem code;
- 600 Service Request were tagged as having search terms present and thus were slated for manual review;
- 1000 random Service Request records were selected for manual review;
- Of the 1600 Service Request records reviewed, 192 (1.1% of sample) records were flagged for further investigation;
- The 192 records indicated that the work performed was indeed related to the sanitary sewer system or was referred to a sanitary sewer crew to perform work; and
- 0 new SSOs were uncovered.

#### 4. Overall Results

Overall results regarding all reviews showed that the most findings of additional SSOs were revealed during the Phase I investigation, whereas the Phase II and Phase III investigations yielded no significant additional finds. Out of the total of 258,121 Service Requests and email documents reviewed, the results showed 791 additional SSOs that were not previously reported where identified during all phases of the review.

### Summary of DeKalb County's Discovery, Investigation, and Correction of SSO Reporting Concerns

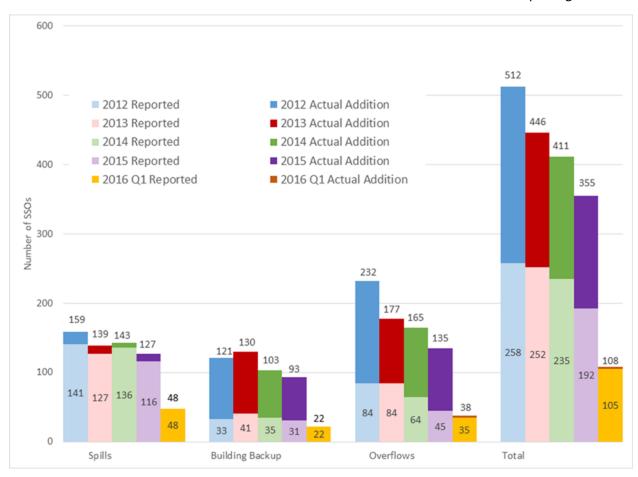


Figure 2. Summary of SSOs Initially Reported and SSOs Added/Reclassified Post Investigative Review Process

Table 5. Summary of SSOs from 2012-2015

	Number of Spills Prior to Reviews	Number of Spills (Phase I Review)	Number of Spills (Phase II Review)	Number of Spills (Phase IIIA Review)	Number of Spills (Phase IIIB Review)	Number of Spills (Phase IIIC Review)	Total Number of Spills
2012	141	15	0	3	0	0	159
2013	127	7	2	3	0	0	139
2014	136	4	3	0	0	0	143
2015	116	9	2	0	0	0	127
Q1 2016	48	0	0	0	0	0	48
TOTAL	568	35	7	6	0	0	616
	Number of Overflows Prior to Reviews	Number of Overflows (Phase I Review)	Number of Overflows (Phase II Review)	Number of Overflows (Phase IIIA Review)	Number of Overflows (Phase IIIB Review)	Number of Overflows (Phase IIIC Review)	Total Number of Overflows
2012	84	147	0	1	0	0	232
2013	84	90	0	3	0	0	177
2014	63	97	0	4	1	0	165
2015	45	85	0	5	0	0	135
Q1 2016	35	0	0	3	0	0	38
TOTAL	311	419	0	16	1	0	747
	Number of Building Backups Prior to Reviews	Number of Building Backups (Phase I Review)	Number of Building Backups (Phase II Review)	Number of Building Backups (Phase IIIA Review)	Number of Building Backups (Phase IIIB Review)	Number of Building Backups (Phase IIIC Review)	Total Number of Building Backups
2012	33	88	0	0	0	0	121
2013	41	89	0	0	0	0	130
2014	35	68	0	0	0	0	103
2015	31	62	0	0	0	0	93
Q1 2016	22	0	0	0	0	0	22
TOTAL	162	307	0	0	0	0	469
	Number of SSOs Prior to Reviews	Number of SSOs (Phase I Review)	Number of SSOs (Phase II Review)	Number of SSOs (Phase IIIA Review)	Number of SSOs (Phase IIIB Review)	Number of SSOs (Phase IIIC Review)	Total Number of SSOs
2012	258	250	0	4	0	0	512
2013	252	186	2	6	0	0	446
2014	234	169	3	4	1	0	411
2015	192	156	2	5	0	0	355
Q1 2016	105	0	0	3	0	0	108
TOTAL	1041	761	7	22	1	0	1832

### **Section 4. Lessons Learned and Corrective Process**

As a result of its review of its SSO-related processes, Service Requests, and other relevant information, the County identified a number of areas that needed improvement or correction. Some of those improvements were promptly instituted, others are ongoing. A summary of DWM's findings and corresponding corrective actions are detailed in Tables 6 and 7.

**Table 6.** Summary of Findings and Immediate Corrective Actions

Finding	Immediate Corrective Actions
Improper SSO identification due to incorrect training definitions	<ul> <li>Re-trained first responder crews regarding the identification of SSOs and the root cause of the SSO to ensure proper and consistent classification of SSO event</li> <li>Conducted additional CERP training for DWM personnel and contractors</li> <li>Created the "CERP Guide to Private Laterals, Building Backups, and Private Manhole SSOs" (Appendix A) for use by the first responder crews to aid in evaluating emergency events</li> </ul>
Inadequate organizational structure to provide compliance oversight	<ul> <li>Undertook appropriate personnel action to address the improper standard originating from the former Interim DWM Director/Deputy Director of Operations</li> <li>Instituted a QA/QC review of potential SSOs by personnel external to Operations as well as additional review within Operations regarding the classification of SSO</li> </ul>
Insufficient communication with the community affected by SSOs	Communicated with community members and regulatory agencies regarding specific SSOs

Table 7. Summary of Findings and QA/QC Program Implementation and Ongoing Compliance Activities

Finding	QA/QC Program Implementation and Ongoing Compliance Activities
Improper SSO identification due to incorrect training definitions	<ul> <li>Instituted ongoing CERP training for DWM personnel and during new employee orientation</li> <li>Instituted a training tracking system where monthly "exception reports" are sent to supervisors to determine "missed" or "overdue" training by DWM personnel</li> <li>Required contractor CERP training for sewer contractors (cleaning, manhole raising, stream crossing assessment, etc.)</li> </ul>
Improper routing of SSO related complaints	<ul> <li>Communicated with other County departments regarding the routing of external communications (not received via the dispatch emergency telephone reporting line nor the website reporting link) to a unified DWM email address <a href="mailto:DeKalbWaterOps@dekalbcountyga.gov">DeKalbWaterOps@dekalbcountyga.gov</a></li> <li>Emphasize to DWM personnel that all SSO related complaints should be recorded through the dispatch process</li> </ul>
Lack of consistency in SSO classification	Instituted a monthly review of specific emergency response Service     Requests by the Consent Decree Administrator to independently identify
330 classification	Requests by the consent becree Administrator to independently identity

Finding	QA/QC Program Implementation and Ongoing Compliance Activities
	<ul> <li>SSO events</li> <li>Instituted a daily review of all SSO related Service Requests by the Assistant CMOM Coordinator and the Inspector/Sewer Specialist to confirm the classification of SSOs</li> </ul>
Potential for the improper coding of Service Requests	<ul> <li>Instituted a daily review of the Foreman's Report corresponding to emergency response Service Requests by the General Foremen and Assistant Superintendent to identifying possible misclassified SSOs</li> <li>Instituted a daily review of all Service Requests with SSO problem codes by the Dispatch Supervisor</li> <li>Commenced the replacement of the current Service Request management system with the CityWorks software whereby the current codes (e.g., "M" codes or "C" codes) used in the current Service Requests will be replaced by descriptors based on the type of issue or work to be performed (e.g., leak, overflow, odor check, backup)</li> </ul>
Inadequate organizational structure to provide compliance oversight	<ul> <li>Reorganized the DWM response reporting structure to include two         Assistant Superintendents positions to oversee operations and emergency         response activities during the week and during the weekend</li> <li>Added an Assistant CMOM Coordinator position</li> <li>Planned the addition of a General Foreman position to manage SSOs         response and resolution (including coordinating follow up assessments)</li> <li>Established a Regulatory Compliance Division to QA/QC SSO report         submittals to regulatory agencies, oversee activities undertaken by the lab         in the sampling, monitoring, and reporting of spills, and assists with         targeted reviews and review of follow up actions for SSOs</li> </ul>
Lack of precision in the information received during the response action	<ul> <li>Implemented a revised SSO Evaluation Report (Appendix C) to collect more detailed information from response activities and to standardize the types of information gathered</li> <li>Expanded the information collection process regarding issues in laterals and building backups</li> <li>Required the crews to provide information on the Service Request regarding the condition of the sewer main to aid in properly differentiating public versus private events</li> <li>Commenced the implementation of CityWorks that provides the solution to the lack of precision in the information received during SSO investigations by requiring a response to specific questions as a mandatory part of completing a work order</li> </ul>
Inadequate QA/QC regarding the resolution of the issues identified in SSO related Service Requests	<ul> <li>Instituted a weekly review of the "M" and "C" coded Service Requests by the Dispatch Supervisor to identify Service Request with outstanding activities in need of resolution</li> <li>Instituted a system where by additional investigations are performed by the General Foremen to resolve incomplete Service Requests</li> <li>Commenced the installation of CityWorks that allows full integration with the County's GIS to support planning and tracking of work associated with specific assets and ultimately allows for a better QA/QC of each SSO response activity</li> </ul>
Insufficient	Implemented a process where the Customer Support Administrator and an

Finding	QA/QC Program Implementation and Ongoing Compliance Activities
communication with	office assistant would update the community member, who notified DWM
the community	of the occurrence of a SSOs, of the resulting response action
affected by SSOs	<ul> <li>Implementing a process where updated work plans could be shared with community members and regulatory agency</li> </ul>
	<ul> <li>Planned an expansion of public education via social media, reverse calling, and literature distribution</li> </ul>
Limited advanced	Began the development of an automated call system to provide alerts
measures regarding storm related SSOs	<ul> <li>Outlined the process for the future installation of flow monitors as an early alert system for storm related SSOs</li> </ul>

### Section 5. Conclusion of the Records Review

As the County endeavors to move beyond the SSO classification and reporting issues addressed in this report, the County's commitment to excellence in the execution of the Consent Decree remains paramount. The County hopes that all of its efforts to review and address the issues, including the prompt disclosure to EPA/EPD, the immediate corrective actions, the depth of the investigative process, and the long-term process improvements instituted to prevent the reoccurrence of these issues provide adequate justification for no additional penalties or enforcement actions.

The County believes it undertook and concluded a meticulous three-phased investigation into its records and processes to get to the bottom of and correct the misclassified and under-reported SSOs. This review process culminated in detailed report revisions submitted to EPA/EPD. Below is a short summary of the report revisions submitted, a recap of the comprehensive nature of the review, a summary of the resources invested in this review, and a request that no additional enforcement action be taken.

### 1. Summary of the Report Revisions

The submittal of this narrative is also accompanied by the submittal of several revised reports including a compilation of all revised Quarterly Reports for 2012-2015, the revised 2016 First Quarter Report, and the 2015 Annual Report (including the Trends Analysis). As described in Section 3 of this narrative, the investigative review yielded additional SSOs that were documented in the 2012-2015 Quarterly Reports and are depicted in Table 8. Similarly, the summary of revisions to the 2016 First Quarterly Report is depicted in Table 9.

Table 8. Summary	of the Revisions	to the 2012-2015	Quarterly Reports
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Year	Number of spills		Number of	overflows	Number o	of backups
	Pre- Investigation	Post- Investigation	Pre- Investigation	Post- Investigation	Pre- Investigation	Post- Investigation
2012	141	159	84	232	33	121
2013	127	139	84	177	41	130
2014	136	143	63	165	35	103
2015	116	127	45	135	31	93
Total	520	568	276	709	140	447

Table 9. Summary of the Revisions to the 2016 First Quarter Report

	Number of spills		Number of overflows		Number of backups	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
	Investigation	Investigation	Investigation	Investigation	Investigation	Investigation
Q1 2016	48	48	35	38	22	22

In addition to the Quarterly Reports, the County is required to submit an Annual Report. The County, while in the midst of the discovery and initial response process described in Section I and II above, initially submitted the 2015 Annual Report without a Trends Analysis on March 1, 2016. After the Phase I review, the County submitted a complete 2015 Annual Report which included a Trends Analysis incorporating the updated data for 2012-2015. The County has again revised that report to include the additional twenty seven SSOs (13 spills and 14 overflows) discovered during the Phase II and III investigative reviews. The results of the Phase II and III reviews did not have a great impact on the Trends Analysis because (1) the additional 27 SSOs represented only 1.6% of the total SSOs reporting during the 2012-2015 period; (2) seven of the additional SSOs were located at a known problem area that already has an extensive work plan in place for conducting repairs over a 2 -3 year period; and (3) the additional SSOs were evenly spread over the four year reporting period essentially minimizing the impact to the annual trends.

### 2. Summary of the Comprehensive Nature of the Investigative Review

As discussed in the this report, after the discovery of misclassified SSOs and the corresponding under reporting, the County undertook a comprehensive review of over 258,121 relevant documents to understand and rectify the reporting gaps. That review encompassed data from 2012-2015 and for specific instances, even included data from the first part of 2016 to confirm and update the 2016 First Quarter Report. The investigative review consisted of three phases.

This Phase I investigation yielded by far the bulk of all additional or reclassified SSO – 761 in total. While the initial Phase I investigative review was not as extensive as it could have been, the County promptly readjusted and dedicated several full time equivalent personnel, resources, and external

professional firms to administer the Phase II and III investigation to ensure a comprehensive investigation. During Phase II, the County determined whether SSO-related information could be located in emails that were never connected to DWM's Service Request tracking system. Out of that Phase II investigation, which begun with 205,564 emails and attachments, the County discovered only seven additional or reclassified SSOs. The County initialized Phase III of the investigation to confirm whether the proper coding had taken place in the documentation of sewer incidents. The Phase III investigation yielded only 23 SSOs or approximately only 1% of the final SSOs reported from 2012 through the first few months of 2016.

In the final analysis, the Phase I investigation encompassed the majority of the newly reported SSOs; however, the County fully considered other avenues of SSO reporting in the Phase II and III reviews to ensure a complete and comprehensive investigation.

### 3. Summary of the Resources and Costs Expended

Over a period of eight months, the County assigned personnel from multiple divisions to participate in the discovery, initial response, investigative review, and corrective action processes described in Sections 1-4 above. DWM's leadership and staff expended approximately 1,400 hours towards this effort. As noted, the County engaged third party professionals and outside counsel to advise and execute portions of the initial response, investigative review, and corrective processes. This resulted in the commitment of an additional approximately 1,900 hours. Moreover, the County dedicated various technology-related physical resources to assist throughout the processes and is in the process of standing up the CityWorks platform which would allow an additional level of QA/QC to the SSO tracking and reporting processes. The total cost associated with this undertaking is approximately \$400,000.

### 4. County's Commitment to Excellence in Execution and Avoidance of Repeat Reporting Mistakes

Throughout this entire process, from the discovery of the SSO classification and reporting issue to the multiphase investigative review and implementation of corrective actions, the newly installed DWM leadership team has focused on establishing an environment of excellence within DWM. This SSO identification and disclosure process presented a unique opportunity for the leadership to look at the nuts and bolts of the functioning of the department, employee performance, and the level of quality controls instituted. DWM has not only filled in gaps relating to its SSO reporting and response; but also incorporated new processes for maintaining compliance and executing long term system repairs. Overall, the lessons learned by DWM and the County during this entire process created opportunities for significant process, substantive, and organizational improvements.

#### 5. Additional Enforcement Not Warranted

The County requests that no additional enforcement be taken given the County's discovery of the issues and its response to them, including self-reporting, immediate actions, records review, corrective actions/remedial measures, cooperation with EPA/EPD, and the costs/expenditure of resources by the

### Summary of DeKalb County's Discovery, Investigation, and Correction of SSO Reporting Concerns

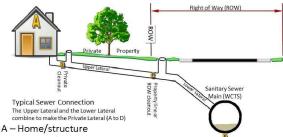
County. Specifically, given the extensive response from the County once the problem was discovered and given the level of effort of the investigation, the multiple fixes instituted, the processes and subgroups within DWM created and implemented to ensure this does not happen again, the costs in hiring multiple external independent advisors and investigators, additional agency enforcement action is not necessary. Moreover, the management of the organization within DWM and its overall focus has significantly improved. This review effort has resulted in a more engaged staff and better run department. While we recognize this situation could have been avoided, we believe that County's forthright approach to self-correcting provides adequate justification for EPA and EPD not to pursue additional enforcement.

### **APPENDICES**

### APPENDIX A – CERP Guide to Private Laterals Building Backups and Private Manhole SSOs

### DeKalb County Dept. of Watershed Management Contingency Emergency Response Plan (CERP) guide to Private Laterals, Building Backups, and Private Manhole Sanitary Sewer Overflows (SSOs)

#### **Typical Sewer Lateral**



- B Private Cleanout
- b Frivate Cleariout
- C Right-of-way Cleanout
- D Sewer System Main (WCTS)

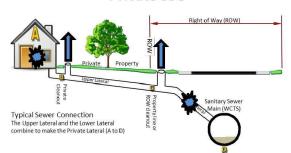
#### \*Definitions

\*Waters of the State – any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells, wetlands, and all other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of the state which are not entirely confined and retained completely upon the property of a single individual, partnership or corporation

\*Storm Drain – an inlet connected to the surface constructed to drain stormwater

\*Storm Drain – an inlet connected to the surface constructed to drain stormwater runoff to Waters of the State. If sewage enters a storm drain and can be contained and completely cleaned prior to reaching Waters of the State, then this may be considered an overflow (contained on land)

#### **Private SSO**



SSO from Point A, Point B, or Point C caused by debris coming from structure (diaper, wipes, grease, kitty litter, etc.)

- If sewage or sewage debris reach Waters of the State\* or a storm drain\* – Private SPILL – Contact homeowner/resident, provide instructions on cleaning and restoration, if owner/resident is not available, STOP the spill, clean and sanitize the area. Leave notification, provide documentation (reports & photos) to charge owner/resident.
- 2. If sewage or sewage debris are contained on land (do not reach a creek or a storm drain) Private OVERFLOW Contact homeowner/resident, provide instructions on cleaning and restoration, if owner/resident is not available, STOP the overflow, cordon off the area. Leave notification, provide documentation (reports & photos) to charge owner/resident.
- If sewage or sewage debris are contained within a structure (does not leave a building or enter Waters of the State/storm drain) – Private BUILDING BACKUP – Provide instructions on cleaning and restoration. Document (reports & photos).

#### Public SSO



SSO from Point A, Point B, or Point C caused by a problem in the WCTS

- If sewage or sewage debris reach Waters of the State\* or a storm drain\* – Public SPILL – Report immediately but no longer than 24 hours, clean, sanitize and restore the entire site (public and private areas). Leave notification, provide documentation (reports & photos).
- If sewage or sewage debris are contained on land (do not reach a creek or a storm drain) – Public OVERFLOW – report within 24 hours, clean, sanitize and restore the entire site (public and private areas). Leave notification, provide documentation (reports & photos).
- If sewage or sewage debris are contained within a structure (does not leave a building or enter Waters of the State/storm drain) – Public BUILDING BACKUP – report within 24 hours, clean, sanitize and restore the building areas affected. Provide documentation (reports & photos).

#### **Public SSO**



SSO from Point A, Point B, or Point C caused by maintenance problem (roots, debris from main, collapse, etc.) in the WCTS

- If sewage or sewage debris reach Waters of the State\* or a storm drain\* – Public SPILL – Report immediately but no longer than 24 hours, clean, sanitize and restore the entire site (public and private areas). Leave notification, provide documentation (reports & photos).
- If sewage or sewage debris are contained on land (do not reach a creek or a storm drain) – Public OVERFLOW – report within 24 hours, clean, sanitize and restore the entire site (public and private areas). Leave notification, provide documentation (reports & photos).
- If sewage or sewage debris are contained within a structure (does not leave a building or enter Waters of the State/storm drain) – Public BUILDING BACKUP – report within 24 hours, clean, sanitize and restore the building areas affected. Provide documentation (reports & photos).

### DeKalb County Dept. of Watershed Management Contingency Emergency Response Plan (CERP) guide to Private Laterals, Building Backups, and Private Manhole SSOs – Page 2



SSO from Point A or Point B caused by maintenance issues or debris coming from the structure (collapsed line, roots, diapers, wipes, grease, kitty litter, etc.)

- If sewage or sewage debris reach Waters of the State\* or a storm drain\* – Private SPILL – Contact homeowner/resident, provide instructions on cleaning and restoration, if owner/resident is not available, STOP the spill, clean and sanitize the area. Leave notifications, provide documentation (reports & photos) to charge owner/resident.
- If sewage or sewage debris are contained on land (do not reach a creek or a storm drain) Private OVERFLOW Contact homeowner/resident, provide instructions on cleaning and restoration, if owner/resident is not available, STOP the overflow, cordon off the area. Leave notification, provide documentation (reports & photos) to charge owner/resident.
- If sewage or sewage debris are contained within a structure (does not leave a building or enter Waters of the State/storm drain) – Private BUILDING BACKUP – Provide instructions on cleaning and restoration. Document (reports & photos).

#### Reporting

Spills: Reported to EPD through the Dispatch Center (770) 270-6243. Spills <u>MUST</u> be reported <u>IMMEDIATELY</u> to dispatch but no longer than 24 hours using the Spill Report Form.

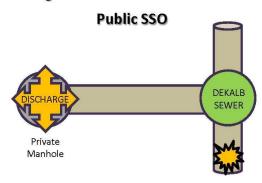
**Overflow/Building Backup**: Reported to CMOM Coordinator using the appropriate form (overflow/building backup). Reported quarterly to EPD.

**Private Spills, Overflows, Building Backups**: Reported to CMOM Coordinator using the appropriate form and correctly coded on the service request.

**Photographs:** Always photograph the site at arrival, once contained, and after cleanup.

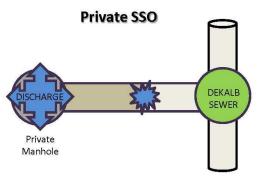
**Reports:** Complete reports thoroughly. Check for potential for water to enter a storm drain or Waters of the State.





SSO from a private manhole caused by a problem in the WCTS

- If sewage or sewage debris reach Waters of the State\* or a storm drain\* – Public SPILL – Report immediately but no longer than 24 hours, clean, sanitize and restore the entire site (public and private areas). Leave notifications, provide documentation (reports & photos).
- If sewage or sewage debris are contained on land (do not reach a creek or a storm drain) – Public OVERFLOW – report within 24 hours, clean, sanitize and restore the entire site (public and private areas). Leave notifications, provide documentation (reports & photos).



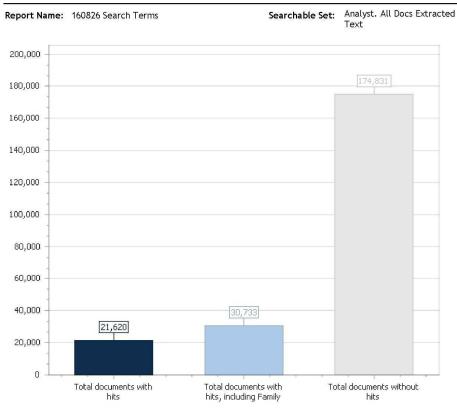
SSO from a private manhole caused by a problem in the private manhole or private discharge pipe

- If sewage or sewage debris reach Waters of the State\* or a storm
  drain\* Private SPILL Contact owner/management agency
  provide instructions on cleaning and restoration, if
  owner/management agency is not available, STOP the spill, clean
  and sanitize the area. Leave notification, provide documentation
  (reports & photos) to charge owner/ management agency.
- If sewage or sewage debris are contained on land (do not reach a creek or a storm drain) Private OVERFLOW Contact owner/management agency provide instructions on cleaning and restoration, if owner/management agency is not available, STOP the overflow, cordon off the area. Leave notification, provide documentation (reports & photos) to charge owner/management agency.

Updated: 5/24/2016

### APPENDIX B – Phase II Search Terms and Their Respective Frequency of Occurrence in Emails and Attachments



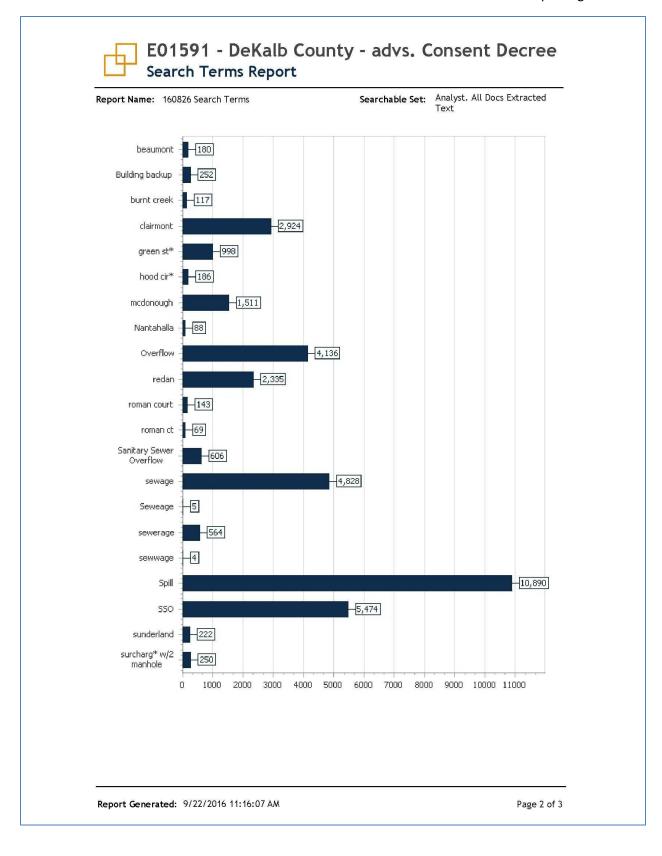


### **Results Summary**

Documents in searchable set	Total documents with hits	Total documents with hits, including Family	Total documents without hits
205,564	21,620	30,733	174,831

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Page 1 of 3



### E01591 - DeKalb County - advs. Consent Decree Search Terms Report

Report Name: 160826 Search Terms
Searchable Set: Analyst. All Docs Extracted Text

### **Terms Summary**

Term	Documents with hits	Documents with hits, including Family	Unique hits
beaumont	180	321	39
Building backup	252	741	41
burnt creek	117	258	5
clairmont	2,924	4,577	1,565
green st*	998	1,678	261
hood cir*	186	301	12
mcdonough	1,511	2,886	694
Nantahalla	88	158	43
Overflow	4,136	8,673	468
redan	2,335	3,934	918
roman court	143	386	30
roman ct	69	130	21
Sanitary Sewer Overflow	606	1,579	0
sewage	4,828	8,605	2,554
Seweage	5	6	0
sewerage	564	1,286	247
sewwage	4	9	0
Spill	10,890	14,790	5,522
SSO	5,474	9,147	1,634
sunderland	222	435	52
surcharg* w/2 manhole	250	743	21

**Report Generated:** 9/22/2016 11:16:07 AM Page 3 of 3

### APPENDIX C - SSO Evaluation Report

## DeKalb County Department of Watershed Management

	Spi	ill 🔲 Overflow 🗖	Building Backup 🗖	Private? Yes 🔲 No 🗖
Weather condition	s:	District: 1	2 3 Section: A B C D E	FGHI
Who reported SSO	:			
Address of Caller re	eporting SSO:		City:	Zip:
Date and Time SSC	reported:	<del></del>		
Address of SSO:			City:	Zip:
Date and Time SSC	was stopped:	Esti	mated amount of sewage di	scharged in gallons:
Reporting Foreman	າ:		_ Service Request or Work C	Order #:
SSO Origin: Pipe	] Manhole □ Cleanou	t □ Size? Lift	Station 🗆 Name:	
Did SSO Enter: Wa	aterway 🗆 Storm Drain	☐ Building ☐		
Name of waterway	tributary that spill enter	red:	Tributary:	
	and the second s	18 No. 10		ails, boat ramps, recreation areas _ (Minimum of 4 for Minor and 6 fo
		Cause of Sanitary	Sewer Overflow	
Grease □ Root	s □ Broken Main □	(Check all ti Storm Event / I&I □ N	A 8 1845	
			it blockage at: Feet	
Debris □ Type of	Debris:	-		
Backwater valve in	stalled? Yes □ No □	Disaster Cleaning Ser	vice Called? Yes □ No □	Sewer Line Size: inches
SSO Cause Explana	tion:			
=				
Action taken to co	rect problem:			
2				
Date & Time Infras	tructure Defect was repai	ired:	<u> </u>	
	ı#:		and Highlighted map	attached? Yes □ No □
Spilling Manhole(s)				
INITIA			<b>DISPATCH) IF ANY OF TI</b> Gallons □ Observed? Yes	
INITIAT Fish Kill □ or Wate				□ No□

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