

ADEQ

ARKANSAS
Department of Environmental Quality

December 13, 2010

Rene Langston, Executive Director
City of Springdale
P.O. Box 769
Springdale, AR 72765

RE: Sanitary Sewer Overflow Complaint Investigation

Dear Mr. Langston:

On October 11, 2010, I performed a complaint investigation/reconnaissance inspection concerning a leaking 24" main located south of Sanders Avenue Bridge. A follow-up reconnaissance inspection was conducted on October 27, 2010. These investigations were conducted in accordance with the provisions of the Federal Clean Water Act, the Arkansas Water and Air Pollution Control Act, and the regulations promulgated thereunder. The investigation revealed the following violation:

Unpermitted discharge of sewage from your collection system causing pollution to the waters of the State. This is in violation of the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. §8-4-217(a)(1). The investigation revealed that Spring Creek had become impacted with raw sewage from the leaking main. The main runs parallel with Spring Creek and sewage was observed seeping from the east side of the creek bank in at least two locations beginning approximately 500 feet south of Sanders Avenue Bridge.

The above item requires your immediate attention. Please submit a written response to these findings to Cindy Garner, Water Division Enforcement Branch Manager. This response should be mailed to the address listed below. This response should contain documentation describing the course of action planned to address the items noted. This corrective action should be completed as soon as possible, and the written response is due by December 23, 2010.

For additional information you may contact the Enforcement Branch by telephone at 501-682-0639 or by fax at 501-682-0910.

If I can be any assistance, please contact me at 479-267-0811, ext. 12.

Sincerely,



Alison West
District 1 Field Inspector
Water Division

cc: Water Division Enforcement Branch
Water Division Permits Branch



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Washington, D.C. 20460

NPDES Compliance Inspection Report

Form Approved
OMB No. 2040-0003

Section A: National Data System Coding

Transaction Code	NPDES	Yr/Mo/Day	Inspec. Type	Inspector	Fac. Type
1 N 2 5 3 A R 0 0 2 2 0 6 3 11 12 1 0 1 0 1 1 17 18 R 19 S 20 1					
Remarks					
A F I N 7 2 - 0 0 0 0 3					
Inspection Work Days	Facility Evaluation Rating	BI	QA	-----Reserved-----	
67 69	70 N	71 N	72 N	73	74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (<i>For industrial users discharging to POTW, also include POTW name and NPDES permit number</i>) City of Springdale POTW 2910 Silent Grove Rd. Springdale, Arkansas	Entry Time/Date 3:00/10-11-2010	Permit Effective Date April 1, 2004
	Exit Time/Date 4:10/10-11-2010	Permit Expiration Date March 31, 2009
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) Rene Langston/Executive Director/479-751-5751 James Clark, City of Springdale, 479-756-3657	Other Facility Data	
Name, Address of Responsible Official/Title/Phone and Fax Number Rene Langston, Executive Director, 479-751-5751 City of Springdale P.O. Box 769 Springdale, Arkansas 72765	Contacted Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Section C: Areas Evaluated During Inspection

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

S	Permit	N	Flow Measurement	N	Operations & Maintenance	N	Sampling
N	Records/Reports	N	Self-Monitoring Program	N	Sludge Handling/Disposal	N	Pollution Prevention
N	Facility Site Review	N	Compliance Schedules	N	Pretreatment	N	Multimedia
N	Effluent/Receiving Waters	N	Laboratory	N	Storm Water	U	Other: SSO

Section D: Summary of Findings/Comments (Attach additional sheets if necessary)

On October 11, 2010, I met with James Clark, Technical Service Director, to conduct an on-site investigation of Spring Creek that had been impacted by sewage caused by a leaking 24" sanitary sewer main. The main runs parallel with Spring Creek and sewage was observed seeping from the east side of the creek bank in at least two locations beginning approximately 500 feet south of Sanders Avenue bridge. I observed an area where straw bales had been installed across the width of the creek to contain the solids. Mr. Clark, also, updated me as to Springdale Water Utilities plan and timeline to repair the leaking main. During the investigation, I suggested that Mr. Clark notify Mr. Richard Murphree, Northwest Environmental Supervisor for the Arkansas Department of Health, to apprise him of the incident. Two emails from Mr. Clark have been attached to this inspection regarding this SSO event.

Name(s) and Signature(s) of Inspector(s) Alison West/	Agency/Office/Telephone/Fax AR Dept. of Environmental Quality-Fayetteville 479-267-0811, ext. 12; 479-267-0819 (fax)	Date December 2, 2010
Signature of Reviewer	Agency/Office/Phone and Fax Numbers	Date

On October 15, 2010, I received the following email from Mr. James Clark, Technical Services Director for Springdale Water Utilities:

RE: Spring Creek sewer leak, SSO event # 21628

As of 6:00 p.m., Thursday, October 14, 2010, bypass pumping began and sewage leaking into Spring Creek ceased. Repair and remediation efforts are underway at this time. We are hopeful that by the end of the day today repairs will be completed and flow can be returned to the gravity main line. A full copy of the event timeline will be provided to each of you as soon as it is compiled. If anyone has any questions, suggestions, or directions, please contact me on my cell phone at the number listed below.

James Clark
Technical Services Director
Springdale Water Utilities
P.O. Box 769
Springdale, AR 72765
479-927-4180
479-200-1625 cell

On November 22, 2010, I received the following report from James Clark, Springdale Water Utilities:

Sewer Main Leak – Spring Creek – SSO Event # 21628

Stream Information: Spring Creek originates in downtown Springdale, then flows northwesterly into Benton County. After crossing into Benton County, Spring Creek intercepts flow from Puppy Creek and Cross Creek before emptying into Osage Creek just west of Highway 112 and south of Cave Springs. Osage Creek then flows southwesterly to a point four miles west of the Benton County line near Highway 412 where it empties into the Illinois River.

Spring Creek receives flow from several cold water springs inside the corporate limits of Springdale; however, during rainfall events, it serves as the primary drainage channel for downtown Springdale. It is quite common to see the flow in Spring Creek disappear underground and surface again either downstream in the creek or at another cold water spring. This is quite evident during low flow conditions in the summer months where numerous stream segments dry up and remain without any water or stream flow until rainfall events. During the low flow conditions, there are several isolated pockets of water deep enough to support some species of fish and other aquatic life throughout the year.

Thursday, October 7, 2010

Around 3:30 p.m., an employee of Springdale Water Utilities reported evidence of sewage in Spring Creek approximately 500 feet south of Sanders Avenue. Upon further investigation, it was discovered that there were four locations where water was seeping from the east side of the creek bank just above a solid rock layer extending under the stream. It became apparent sewage was leaking from a 24-inch sanitary sewer main that runs parallel with the creek. The appearance of solids and the smell of sewage were noticeable at two seepage locations. The same was true for a

small pool of water downstream of the seepages. Total flow emitting from the four locations was estimated at 30 gallons per minute. It would be difficult to estimate the volume of sewage that leaked from the sewer main and mixed with the spring water or to provide a time frame when the leak(s) began. Based upon visual inspections of the creek, the undetermined amount of time the leakage occurred did not result in any fish kills as minnows and other small fish were found in pools of water immediately downstream. It should also be noted that any form of aquatic life present in downstream pools of water did not seem to be stressed by the unknown volume of leakage from the sewer main. A telephone call was made around 4:30 p.m. to the ADEQ office in Fayetteville, and a message was left for John Fazio to make him aware of the leak discovery.

At approximately 5:00 p.m., the Executive Director of Springdale Water Utilities (SWU), Rene Langston, called a meeting of department heads to develop a course of action. SWU Engineering Director Rick Pulvirenti recommended that bypass pumping be initiated as soon as possible so the sewer main could be televised to pinpoint the location of any leak or leaks. He indicated the sanitary sewer main was flowing at half pipe and estimated the flow to be between 4,000 and 5,000 gallons a minute. He felt the flow would have to be diverted around two line segments (a line segment being from one manhole to another manhole) that were adjacent and immediately upstream of seepage points in the creek. Since the department was already using an Insituform contractor at other locations, he suggested contacting them and seeing if they could assist with bypass pumping. The line segments could not be televised with flow levels in the pipe, and quite possibly, bypass pumping would also be needed if the televised segments revealed the need to replace a section of pipe or to line certain segments with a liner available from Insituform. During the meeting, it was decided that every effort should be made to capture as much of the leaking sewage as possible and pump it to a downstream manhole. By 7:00 p.m. that evening, creek water in the nearest downstream pool was being pumped into a sanitary sewer manhole before it could flow further downstream in the creek. Department personnel were stationed at the site throughout the night to oversee pumping operations.

Friday, October 8, 2010

At approximately 8:00 a.m., Mr. Langston spoke to Cindy Garner with the ADEQ office in Little Rock. He apprised her of the situation and indicated the city was hoping to use bypass pumping as a means to indentify the location of any leak or leaks and also to facilitate whatever repairs were deemed necessary. When Technical Services Director James Clark returned to the site, he found that the pumping of the creek had cut off creek flow to a downstream pool causing it to dry up. As a result of this action, he estimated 600-700 minnows had died. This information was reported to Mr. Langston around 9:30 a.m. Once this discovery was made, another call was placed to John Fazio of ADEQ who suggested contacting a representative of the Arkansas Game & Fish Commission. Langston contacted Ron Moore of AG&FC at approximately 10:00 a.m. and informed him of the situation. Mr. Moore indicated that he would arrive at the site within an hour. At 11:00 a.m., Mr. Moore arrived and conducted an investigation of conditions in the creek. He determined that the city was not causing any harm to the stream by pumping; however, he wanted to see the natural flow of the stream restored as much as possible. He indicated that he would contact Mr. Fazio and express this concern to him. At approximately 2:00 p.m., Mr. James Clark contacted the ADEQ office in Little Rock to officially report the event. Due to the complexity of the circumstances, the report was issued verbally instead of using the online reporting form. At this time, Allen Anderson, ADEQ Enforcement Analyst, issued confirmation number 21628 for this event. At approximately 3:00 p.m., John Fazio contacted Mr. Clark to discuss the issue of pumping or allowing the creek to

flow. Mr. Fazio suggested trying to capture any solids entering the creek while allowing the natural flow to continue. Based upon his recommendation, city crews placed a double row of straw bales across the width of the creek at a point downstream of the leaking sewage. Placing straw bales across the creek seemed to work as it allowed creek water to continue flowing downstream while solids were kept from migrating further downstream.

Throughout the day, Mr. Pulvirenti was in contact with representatives from Insituform Technologies discussing the possibilities of securing bypass pumping equipment and the possibility of lining sections of the sewer line in question. At approximately 6:00 p.m., an emergency agreement was signed by Mr. Langston authorizing Insituform to begin mobilizing equipment. Under this agreement, equipment would be on site Monday, October 11th. During his telephone conversation with Insituform, Mr. Pulvirenti made it very clear that the city was in an emergency situation, and every effort should be made to act with urgency.

Saturday, October 9 – Sunday, October 10, 2010

Spring Creek was inspected periodically to ensure that surface scum and any excessive solids accumulating behind the straw bales were removed. Solids and scum were vacuumed with city equipment and discharged into a downstream manhole.

Monday, October 11, 2010

During the late morning hours, pumping equipment started to arrive from Houston, Texas. Three portable diesel powered pumps, one 12-inch pump, and two 14-inch pumps were delivered on tractor-trailer rigs. The subcontractor responsible for bypass pumping unloaded the pumps and positioned them next to the upstream manhole where the effluent piping from each was connected to a manifold on the force main.

Alison West, one of the local inspectors for ADEQ, arrived around 3:00 p.m. to conduct an inspection of the creek and areas around the leak. She was also responding to a complaint filed by an individual who was working at business located on Sanders Ave. This property owner had also called the city on Friday evening (Oct. 8), inquiring about what was being done to alleviate sewer odor. The dispatcher, who received the call, assured her that all efforts were being made to resolve the issue. Ms. West suggested that the local office of the Arkansas Department of Health be apprised of the incident. Mr. Clark placed a call at 4:30 p.m. to Mr. Richard Murphree, Northwest Environmental Supervisor for the Arkansas Department of Health.

Tuesday, October 12, 2010

Two tractor-trailer loads of 18" polyethylene pipe arrived from Shreveport, Louisiana. Richard Murphree with the Health Department arrived at 9:30 a.m. and was given a tour of the site. Mr. Murphree indicated the ADH would help any way they could, but primary enforcement and inspection would be the responsibility of ADEQ. About mid-morning the bypass pumping contractor began fusing pipe sections together to be used for the temporary force main. Water quality in the creek was tested by lab technicians from the city's wastewater plant. Dissolved oxygen levels in the creek ranged from 7.14 to 9.6 mg/l upstream of the affected area. Below the lowest point of sewage discharge, a range of 5.20 to 6.83 mg/l was measured.

City crews cut and trenched a crossing in Sanders Avenue just west of the Spring Creek bridge to allow the 18-inch temporary force main to cross under the street before it crossed over the bridge and discharged into a downstream manhole on the east side of the creek.

An afternoon meeting was held where Engineering Director Rick Pulvirenti laid out plans for repairs after the bypass pumping had been initiated. Those in attendance included a representative of Insituform Technologies, their subcontractor performing bypass operations, and staff from Springdale Water Utilities. It was decided that point-source repairs would be made if possible since the materials needed to line the pipe had to be fabricated, and it would be another week to ten days before the lining materials could be at the site. City staff was instructed to start checking on the availability of pipe and couplings needed for point-source repairs.

The bypass contractor worked until midnight assembling sections of high density polyethylene pipe using a heat fusion machine.

Wednesday, October 13, 2010

Work continued throughout day and until the midnight hour to assemble and place approximately 1,250 feet of pipe in position for bypass pumping.

Thursday, October 14, 2010

Line work was completed and end caps were installed allowing the force main to be air tested before the temporary line was placed into service. After pressure testing was completed, final fittings were installed on the suction and discharge ends of the pipe, and an inflatable plug was inserted in the upstream manhole allowing it to become temporary wetwell. Bypass pumping started at approximately 6:00 p.m. During the next couple of hours, camera crews inspected sections of the 24-inch gravity sewer main. Three locations were identified as likely source(s) for sewer leaks. The first location was a hole in the invert of a manhole. The second location was a broken section of clay pipe, and the third location was identified as an offset pipe joint just outside a manhole. It was decided to wait until daylight before starting any repair work. Bypass pumping through the force main continued through the night.

Friday, October 15, 2010

Starting at 7:00 a.m., two crews began excavating at separate locations to provide needed repairs, each crew working at one of the locations identified where point-source repairs were needed. At the same time, a manhole rehabilitation contractor started repairing the manhole invert, lining the walls, and replacing the ring and lid to provide complete rehabilitation of the manhole. Due to the depth and size of the clay pipe, it took most of the day to complete repairs on each section of pipe. One section was replaced with PVC pipe, and the other was lifted to the proper alignment in order to correct the offset before the joints were grouted and concrete was placed under the pipe to prevent future settlement. All three repairs were completed by 5:00 p.m. Spring Creek was inspected throughout the day to confirm that the isolated line sections were the only source of sewer leaks. When repairs were completed, tracing dye was poured in the isolated line segment to make certain that repairs were effective and that there were not any other leaks that had not been identified. While repairs were underway, another crew was working on cleanup operations in the creek.

A decision was made late Friday evening to continue bypass pumping through the night in order to provide assurances that one or more repairs had stopped leakage into the creek. It was noted that flows did not diminish at any of the four seepage points into the creek while bypass pumping was underway.

Saturday, October 16, 2010

Mr. Langston and Mr. Pulvirenti met on site to evaluate the condition of the stream and to examine flows from each of the four springs. Water quality appeared to be that typically found in cold water springs along the creek which gave reasonable assurance that repairs were successful. Conditions in the creek had improved, but the bottom needed to be scoured in order to remove remaining solids. Sewage odor was no longer evident.

Sunday, October 17, 2010

At approximately 8:00 a.m., a city crew began pressure washing the creek channel using non-chlorinated water. A vacuum truck was used to collect debris dislodged by high pressure washing. The cleaning procedure was completed around 6:00 p.m.

Monday, October 18, 2010



Bypass contractor was told he could start demobilization. James Clark called the local ADEQ office and a message was left for Inspector John Fazio. Clark also contacted the Little Rock office of ADEQ, and spoke with Allen Anderson, who took the initial report. Mr. Anderson was informed repairs and creek remediation had been completed.

Conclusion:



Upon initial investigation of the leak, there were four seepage locations discharging water from the east side of the creek bank. It was very obvious that two locations contained sewage, while the other two locations were questionable. In the initial contact with ADEQ, an estimated flow totaling 30 gallons per minute was reported for all four locations. After repairs were completed, and cleanup of the stream was finished, there are still two locations where water is flowing from the creek bank. As mentioned earlier in the report, Spring Creek is a losing stream, and just upstream of the affected area, the entire flow of the creek goes underground. Based upon these observations, it appears the flows discharging into the creek at two locations are a result of the creek flow resurfacing through cracks or fissures in the rock. Therefore, the initial estimate of thirty gallons per minute is much higher than the actual amount of the sewage leakage. Currently, there are two locations where the flow remains at approximately 20 gallons per minute. This gives us a more accurate sewage flow of ten gallons per minute. From the time city personnel became aware of the leak, (3:30 p.m., Thursday, October 7) until such time flows in the sewer main were diverted (6:00 p.m., Thursday, October 14), 168 hours had passed. The number of minutes in 168 hours is 10,080. The number of minutes multiplied by the estimated 10 gallons per minute of leaking sewage provides a more accurate estimate of 100,800 gallons of leakage for this event.

James Clark
Technical Service Director
Springdale Water Utilities
October 20, 2010



**Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet**

Location:		SSO Event # 21628-Spring Creek south of Sanders Avenue bridge						
Photographer:		Alison West			Witness:		NA	
Photo #	1	Of	12		Date:	10-11-2010	Time:	3:23 p.m.
Description:		HPIM1268. Upstream of sewage discharging into Spring Creek.						
								
Photographer:		Alison West			Witness:		NA	
Photo #	2	Of	12		Date:	10-11-2010	Time:	3:24 p.m.
Description:		HPIM1269. Looking downstream, clear water mixing with sewage.						
								



**Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet**

Location:		SSO Event # 21628-Spring Creek south of Sanders Avenue bridge						
Photographer:		Alison West			Witness:		NA	
Photo #	3	Of	12		Date:	10-11-2010	Time: 3:24 p.m.	
Description:		HPIM1270. Looking downstream, another angle of clear water mixing with sewage.						
								
Photographer:		Alison West			Witness:		NA	
Photo #	4	Of	12		Date:	10-11-2010	Time: 3:24 p.m.	
Description:		HPIM1271. Raw sewage entering Spring Creek.						
								



**Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet**

Location:		SSO Event # 21628-Spring Creek south of Sanders Avenue bridge					
Photographer:		Alison West			Witness:		NA
Photo #	5	Of	12		Date:	10-11-2010	Time: 3:25 p.m.
Description:		HPIM1272. Raw sewage entering into Spring Creek. Solids observed. Same area as seen in HPIM1271.					
							
Photographer:		Alison West			Witness:		NA
Photo #	6	Of	12		Date:	10-11-2010	Time: 3:25 p.m.
Description:		HPIM1273. Raw sewage entering into Spring Creek. Same area as seen in HPIM1271.					
							



**Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet**

Location:		SSO Event # 21628-Spring Creek south of Sanders Avenue bridge					
Photographer:		Alison West			Witness:		NA
Photo #	7	Of	12		Date:	10-11-2010	Time: 3:25 p.m.
Description:		HPIM1274. Close-up of solids.					
							
Photographer:		Alison West			Witness:		NA
Photo #	8	Of	12		Date:	10-11-2010	Time: 3:26 p.m.
Description:		HPIM1276. Sewage in Spring Creek downstream from HPIM1271.					
							

**Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet**

Location:		SSO Event # 21628-Spring Creek south of Sanders Avenue bridge					
Photographer:		Alison West			Witness:		NA
Photo #	9	Of	12		Date:	10-11-2010	Time: 3:27 p.m.
Description:		HPIM1279. Sewage in Spring Creek.					
							
Photographer:		Alison West			Witness:		NA
Photo #	10	Of	12		Date:	10-11-2010	Time: 3:29 p.m.
Description:		HPIM1283. Straw bales set up the width of the creek to contain solids.					
							

Arkansas Department of Environmental Quality (ADEQ) Official Photograph Sheet

Location:		SSO Event # 21628-Spring Creek south of Sanders Avenue bridge					
Photographer:		Alison West			Witness:		NA
Photo #	11	Of	12		Date:	10-11-2010	Time: 3:33 p.m.
Description:		HPIM1288. It appears there are a few solids downstream from the straw bales.					
							
Photographer:		Alison West			Witness:		NA
Photo #	12	Of	12		Date:	10-11-2010	Time: 3:39 p.m.
Description:		HPIM1291. Spring Creek downstream from Sanders Avenue bridge.					
							

Sewer Main Leak – Spring Creek – SSO Event # 21628

Stream Information: Spring Creek originates in downtown Springdale, then flows northwesterly into Benton County. After crossing into Benton County, Spring Creek intercepts flow from Puppy Creek and Cross Creek before emptying into Osage Creek just west of Highway 112 and south of Cave Springs. Osage Creek then flows southwesterly to a point four miles west of the Benton County line near Highway 412 where it empties into the Illinois River.

Spring Creek receives flow from several cold water springs inside the corporate limits of Springdale; however, during rainfall events, it serves as the primary drainage channel for downtown Springdale. It is quite common to see the flow in Spring Creek disappear underground and surface again either downstream in the creek or at another cold water spring. This is quite evident during low flow conditions in the summer months where numerous stream segments dry up and remain without any water or stream flow until rainfall events. During the low flow conditions, there are several isolated pockets of water deep enough to support some species of fish and other aquatic life throughout the year.

Thursday, October 7, 2010

Around 3:30 p.m., an employee of Springdale Water Utilities reported evidence of sewage in Spring Creek approximately 500 feet south of Sanders Avenue. Upon further investigation, it was discovered that there were four locations where water was seeping from the east side of the creek bank just above a solid rock layer extending under the stream. It became apparent sewage was leaking from a 24-inch sanitary sewer main that runs parallel with the creek. The appearance of solids and the smell of sewage were noticeable at two seepage locations. The same was true for a small pool of water downstream of the seepages. Total flow emitting from the four locations was estimated at 30 gallons per minute. It would be difficult to estimate the volume of sewage that leaked from the sewer main and mixed with the spring water or to provide a time frame when the leak(s) began. Based upon visual inspections of the creek, the undetermined amount of time the leakage occurred did not result in any fish kills as minnows and other small fish were found in pools of water immediately downstream. It should also be noted that any form of aquatic life present in downstream pools of water did not seem to be stressed by the unknown volume of leakage from the sewer main. A telephone call was made around 4:30 p.m. to the ADEQ office in Fayetteville, and a message was left for John Fazio to make him aware of the leak discovery.

At approximately 5:00 p.m., the Executive Director of Springdale Water Utilities (SWU), Rene Langston, called a meeting of department heads to develop a course of action. SWU Engineering Director Rick Pulvirenti recommended that bypass pumping be initiated as soon as possible so the sewer main could be televised to pinpoint the location of any leak or leaks. He indicated the sanitary sewer main was flowing at half pipe and estimated the flow to be between 4,000 and 5,000 gallons a minute. He felt the flow would have to be diverted around two line segments (a line segment being from one manhole to another manhole) that were adjacent and immediately upstream of seepage points in the creek. Since the department was already using an Insituform

contractor at other locations, he suggested contacting them and seeing if they could assist with bypass pumping. The line segments could not be televised with flow levels in the pipe, and quite possibly, bypass pumping would also be needed if the televised segments revealed the need to replace a section of pipe or to line certain segments with a liner available from Insituform. During the meeting, it was decided that every effort should be made to capture as much of the leaking sewage as possible and pump it to a downstream manhole. By 7:00 p.m. that evening, creek water in the nearest downstream pool was being pumped into a sanitary sewer manhole before it could flow further downstream in the creek. Department personnel were stationed at the site throughout the night to oversee pumping operations.

Friday, October 8, 2010

At approximately 8:00 a.m., Mr. Langston spoke to Cindy Garner with the ADEQ office in Little Rock. He apprised her of the situation and indicated the city was hoping to use bypass pumping as a means to identify the location of any leak or leaks and also to facilitate whatever repairs were deemed necessary. When Technical Services Director James Clark returned to the site, he found that the pumping of the creek had cut off creek flow to a downstream pool causing it to dry up. As a result of this action, he estimated 600-700 minnows had died. This information was reported to Mr. Langston around 9:30 a.m. Once this discovery was made, another call was placed to John Fazio of ADEQ who suggested contacting a representative of the Arkansas Game & Fish Commission. Langston contacted Ron Moore of AG&FC at approximately 10:00 a.m. and informed him of the situation. Mr. Moore indicated that he would arrive at the site within an hour. At 11:00 a.m., Mr. Moore arrived and conducted an investigation of conditions in the creek. He determined that the city was not causing any harm to the stream by pumping; however, he wanted to see the natural flow of the stream restored as much as possible. He indicated that he would contact Mr. Fazio and express this concern to him. At approximately 2:00 p.m., Mr. James Clark contacted the ADEQ office in Little Rock to officially report the event. Due to the complexity of the circumstances, the report was issued verbally instead of using the online reporting form. At this time, Allen Anderson, ADEQ Enforcement Analyst, issued confirmation number 21628 for this event. At approximately 3:00 p.m., John Fazio contacted Mr. Clark to discuss the issue of pumping or allowing the creek to flow. Mr. Fazio suggested trying to capture any solids entering the creek while allowing the natural flow to continue. Based upon his recommendation, city crews placed a double row of straw bales across the width of the creek at a point downstream of the leaking sewage. Placing straw bales across the creek seemed to work as it allowed creek water to continue flowing downstream while solids were kept from migrating further downstream.

Throughout the day, Mr. Pulvirenti was in contact with representatives from Insituform Technologies discussing the possibilities of securing bypass pumping equipment and the possibility of lining sections of the sewer line in question. At approximately 6:00 p.m., an emergency agreement was signed by Mr. Langston authorizing Insituform to begin mobilizing equipment. Under this agreement, equipment would be on site Monday, October 11th. During his telephone conversation with Insituform, Mr. Pulvirenti made it very clear that the city was in an emergency situation, and every effort should be made to act with urgency.

Saturday, October 9 – Sunday, October 10, 2010

Spring Creek was inspected periodically to ensure that surface scum and any excessive solids accumulating behind the straw bales were removed. Solids and scum were vacuumed with city equipment and discharged into a downstream manhole.

Monday, October 11, 2010

During the late morning hours, pumping equipment started to arrive from Houston, Texas. Three portable diesel powered pumps, one 12-inch pump, and two 14-inch pumps were delivered on tractor-trailer rigs. The subcontractor responsible for bypass pumping unloaded the pumps and positioned them next to the upstream manhole where the effluent piping from each was connected to a manifold on the force main.

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Tuesday, October 12, 2010

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possible since the materials needed to line the pipe had to be fabricated, and it would be another week to ten days before the lining materials could be at the site. City staff was instructed to start checking on the availability of pipe and couplings needed for point-source repairs.

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Wednesday, October 13, 2010

Work continued throughout day and until the midnight hour to assemble and place approximately 1,250 feet of pipe in position for bypass pumping.

Thursday, October 14, 2010

Line work was completed and end caps were installed allowing the force main to be air tested before the temporary line was placed into service. After pressure testing was completed, final fittings were installed on the suction and discharge ends of the pipe, and an inflatable plug was inserted in the upstream manhole allowing it to become temporary wetwell. Bypass pumping started at approximately 6:00 p.m. During the next couple of hours, camera crews inspected sections of the 24-inch gravity sewer main. Three locations were identified as likely source(s) for sewer leaks. The first location was a hole in the invert of a manhole. The second location was a broken section of clay pipe, and the third location was identified as an offset pipe joint just outside a manhole. It was decided to wait until daylight before starting any repair work. Bypass pumping through the force main continued through the night.

Friday, October 15, 2010

Starting at 7:00 a.m., two crews began excavating at separate locations to provide needed repairs, each crew working at one of the locations identified where point-source repairs were needed. At the same time, a manhole rehabilitation contractor started repairing the manhole invert, lining the walls, and replacing the ring and lid to provide complete rehabilitation of the manhole. Due to the depth and size of the clay pipe, it took most of the day to complete repairs on each section of pipe. One section was replaced with PVC pipe, and the other was lifted to the proper alignment in order to correct the offset before the joints were grouted and concrete was placed under the pipe to prevent future settlement. All three repairs were completed by 5:00 p.m. Spring Creek was inspected throughout the day to confirm that the isolated line sections were the only source of sewer leaks. When repairs were completed, tracing dye was poured in the isolated line segment to make certain that repairs were effective and that there were not any other leaks that had not been identified. While repairs were underway, another crew was working on cleanup operations in the creek.

A decision was made late Friday evening to continue bypass pumping through the night in order to provide assurances that one or more repairs had stopped leakage into the creek. It was noted that flows did not diminish at any of the four seepage points into the creek while bypass pumping was underway.

Saturday, October 16, 2010

Mr. Langston and Mr. Pulvirenti met on site to evaluate the condition of the stream and to examine flows from each of the four springs. Water quality appeared to be that typically found in cold water springs along the creek which gave reasonable assurance that repairs were successful. Conditions in the creek had improved, but the bottom needed to be scoured in order to remove remaining solids. Sewage odor was no longer evident.

Sunday, October 17, 2010

At approximately 8:00 a.m., a city crew began pressure washing the creek channel using non-chlorinated water. A vacuum truck was used to collect debris dislodged by high pressure washing. The cleaning procedure was completed around 6:00 p.m.

Monday, October 18, 2010

Bypass contractor was told he could start demobilization. James Clark called the local ADEQ office and a message was left for Inspector John Fazio. Clark also contacted the Little Rock office of ADEQ, and spoke with Allen Anderson, who took the initial report. Mr. Anderson was informed repairs and creek remediation had been completed.

Conclusion:

Upon initial investigation of the leak, there were four seepage locations discharging water from the east side of the creek bank. It was very obvious that two locations contained sewage, while the other two locations were questionable. In the initial contact with ADEQ, an estimated flow totaling 30 gallons per minute was reported for all four locations. After repairs were completed, and cleanup of the stream was finished, there are still two locations where water is flowing from the creek bank. As mentioned earlier in the report, Spring Creek is a losing stream, and just upstream of the affected area, the entire flow of the creek goes underground. Based upon these observations, it appears the flows discharging into the creek at two locations are a result of the creek flow resurfacing through cracks or fissures in the rock. Therefore, the initial estimate of thirty gallons per minute is much higher than the actual amount of the sewage leakage. Currently, there are two locations where the flow remains at approximately 20 gallons per minute. This gives us a more accurate sewage flow of ten gallons per minute. From the time city personnel became aware of the leak, (3:30 p.m., Thursday, October 7) until such time flows in the sewer main were diverted (6:00 p.m., Thursday, October 14), 168 hours had passed. The number of minutes in 168 hours is 10,080. The number of minutes multiplied by the estimated 10 gallons per minute of leaking sewage provides a more accurate estimate of 100,800 gallons of leakage for this event.

James Clark
Technical Service Director
Springdale Water Utilities
October 20, 2010



Springdale Water Utilities

526 Oak Avenue P.O. Box 769 Springdale, Arkansas 72765-0769 (479) 751-5751

December 21, 2010

Ms. Cindy Garner
Technical Assistance Manager
Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

RE: Sanitary Sewer Event #21628
NPDES Permit #AR0022063

Dear Ms. Garner:

This letter is being written in response to correspondence dated December 13, 2010, from District 1 Field Inspector Alison West requesting that we provide your office a final report of the referenced event. We offer the attached as a detailed report on action taken following our discovery of leakage from a 24-inch sanitary sewer main seeping into the channel of nearby Spring Creek.

In summary, city crews and a contractor provided point source repairs to three locations deemed as possible leakage points allowing wastewater to escape and migrate to the creek in an underground channel. In order to facilitate repairs, it became necessary to hire an out-of-state contractor to perform bypass pumping around two manhole-to-manhole line segments. During the time bypass pumping was underway, the line segments were inspected with a camera, and two potential locations for leakage were identified as well as the need to provide repairs in the bottom of one manhole. Repairs at all three locations were completed the next day, October 15th. Impacted areas in the creek were pressure washed with non-chlorinated water, and any debris scoured from the creek bottom was vacuumed for disposal in a downstream manhole. This work was completed on October 17th.

Fortunately, dry weather allowed quick repairs and our cleaning efforts in the creek to be more effective.

It is hoped this report will provide needed information to bring closure to this event. Should you have a need for additional information, please feel free to contact me at your convenience.

James Clark
Technical Services Director
Springdale Water Utilities

C: Rene Langston
File

Attachment

ADEQ

ARKANSAS
Department of Environmental Quality

January 4, 2011

James Clark
City of Springdale
P.O. Box 769
Springdale, AR 72765

Re: NPDES Permit No: AR0022063
Response to Inspection

Dear Mr. Clark:

The Department has received your response to the October 11, 2010 complaint investigation/reconnaissance inspection concerning a leaking 24" main located south of Sanders Avenue Bridge by our District Field Inspector, Alison West. Your letter appears to adequately address the discrepancies identified during the inspection. The Department assumes the corrective actions taken will be maintained to ensure consistent compliance with the requirements of the permit. Acceptance of this response by the Department does not preclude any future enforcement action deemed necessary at this site or any other site.

The Department will keep the inspection and response on file. If future violations occur that require enforcement action, the Department will consider the inspection and response as required by the Pollution Control and Ecology Commission Regulation No. 7, Civil Penalties. This regulation requires the Department to consider the past history of your site and how expeditiously the violations were addressed in determining any civil penalty that may be necessary for any future violations.

If we need further information concerning this matter, we will contact you. Thank you for your attention to this matter. Should you have any questions, feel free to contact me at 501-682-0635 or you may e-mail me at anderson@adeq.state.ar.us.

Sincerely,



Alan Anderson
Enforcement Analyst
Water Division Enforcement Branch