

SOUTH HAVEN WATER WORKS, INC.

305 W. 700N
VALPARAISO, INDIANA 46383

February 3, 1992

Mr. Gary Pavich, Program Management
Indiana Dept. of Environmental Management
Office of Water Management
105 S. Meridian St.
PO Box 6015
Indianapolis, IN. 46206-6015

Dear Mr. Pavich,

I am writing this letter pursuant to our meeting on Friday, January 31, 1992, whereby you requested a summary of I & I abatement work that has been performed to date. I have presented these tasks in chronological order for your perusal.

March 1986 through April 1989

An inspection of every house and business, approximately 3100, was made in search of illegal connections to the sanitary sewer system. The inspection for illegal connections consisted of gutters and downspouts, footing drains, sump pumps, yard drains and an open system - whereby the resident removed a cleanout cap to allow clear water to drain from his crawlspace. ** Please find the enclosed inspection form for greater details.

November 1989

A meeting, between IDEM personnel consisting of Mr. Mike Kuss and Mr. Skip Brunner and SHWW personnel consisting of Mr. David Saylor, Mr. James Toney and Mr. Don Cochran, was held in Indianapolis to confer about SHWW inflow and infiltration problems. All parties agreed that SHWW should develop an Action Plan to provide an organized effort for the elimination of this problem.

November 1989 through January 1990

During this period of time, Mr. James Toney formulated and wrote a Five Year Action Plan consisting of manhole rehabilitation, line smoking, flow metering and flow isolation and televising sewer lines. This plan was submitted to IDEM in January-February 1990 for IDEM approval. ** Please see the enclosed Infiltration and Inflow Repairs plan for further details.

March 1990 through January 1991

Manhole inspection and rehabilitation work of 682 manholes was completed during this time period. This project consisted of a visual inspection of every manhole to determine any leakage of ground water into the manhole via cracks or joints in the manhole

itself. When these leaks were discovered a rejuvenating/repair chemical grout was pumped through the manhole wall to seal the leaks on the external surface of the manholes. Subsequent inspections of the manholes indicate that this process has worked very well and continues to do so.

April 1991 through May 1991

SHWW received a Notice of Violation and Agreed Order from IDEM dated April 17, 1991. Pursuant to receiving this letter a meeting was held between IDEM officials, Mr. Paul Cluxton and Mr. Cody Fleece and SHWW representatives, Mr. David Saylor, Mr. Steve Fickle and Mr. James Weiser, attorney. It was at this meeting that SHWW was notified that the original Five Year I & I elimination plan was not approved and that SHWW would be forced into an Agreed Order that would eliminate all plant bypassing by November 30, 1992. SHWW was to prepare and submit a new Remedial Action Plan to IDEM. This new plan was to address I & I, facility bypassing, schedule of operational changes and schedule of maintenance changes.

May 1991 through September 1991

SHWW entered into the smoke testing phase of the I & I elimination project in May 1991. This phase included smoke testing of all sanitary sewer lines and the repair of lines that were found to be leaking. In all, 107 different points of leakage were discovered during the smoke testing procedure and to date all but 22 leak locations have been repaired. The remaining smoke testing leaks not yet repaired, due to rainy weather which began in October 1991, will be incorporated into new leaks to be discovered by line televising in 1992.

Leaks discovered during smoke testing included uncapped yard cleanouts, cracked and separated customer service pipes, cracked main sewer pipes, separated main sewer pipes and main sewer line collapses caused by storm sewer deterioration. We also discovered, during June 1991, that a Girl Scout Camp located on our system had allowed their sewer service piping to deteriorate to the point of discharging in excess of 100,000 gallons per day of ground water into the SHWW collection system during periods of dry weather and much higher flows during wet weather. This discovery now sheds some light into the disappearance of a lake that was once part of the scout camp.

Those sanitary sewer main collapses caused by the storm sewer deterioration are also believed to be a major contributor to the overall clear water inflow problem, as we discovered a direct path or hole eroded away between the two separated sewers. We believe that the four collapses discovered to date are only the "tip of the iceberg" and we expect to find many problems of this type during the sewer televising phase of this project. Those discovered thus far are in areas with large flooding problems.

November 1991 to Present

A re-inspection of customer service pipes in an area, where crawlspace drains were not installed by the developer, approximately 700 homes, began in early November 1991. This inspection includes the same criteria as the March 1986 through April

1989 inspections. To date approximately 130 homes have been inspected and approximately twenty violations have been discovered. Most of these 20 violations are repeats of violations discovered during the initial inspection period between March 1986 through April 1989. At the present time SHWW has no basis of fining the repeat offenders, however, plans are to approach the Indiana Utility Regulatory Commission, at some future date, to establish a fine system.

Plans for 1992:

February 1992

- 1.) Begin televising of sanitary sewer mains in mid February. First areas to be televised are points where the the storm sewers and sanitary sewers cross or run parallel with one another.
- 2.) Further testing of the Girl Scout Camp sewer problem.
- 3.) Continue with house inspections of customer sewer piping.
- 4.) Develop a computer aided mapping and flow monitoring system.

March 1992

- 1.) Continue televising of sanitary sewer mains.
- 2.) Purchase and install sewer flow meters.
- 3.) Continue with house inspections of customer sewer piping.
- 4.) Girl Scouts to supply SHWW with an action plan to eliminate ground water inflow into SHWW sewer collection system.

April 1992

- 1.) Continue televising of sanitary sewer mains.
- 2.) Continue with sewer flow metering.
- 3.) Begin repairs of sewer problems discovered by televising.
- 4.) Smoke test sewer mains north of U.S. Hwy. 6.

May 1992

- 1.) Continue televising of sanitary sewer mains.
- 2.) Continue with sewer flow metering.
- 3.) Continue with repairs discovered during televising.
- 4.) Begin construction of sludge belt press building.

June 1992

- 1.) Continue televising of sanitary sewer mains.

- 2.) Continue with sewer flow metering.
- 3.) Continue with sewer repairs.
- 4.) Continue with belt press building.
- 5.) Evaluate and meet with IDEM officials concerning all progress to date of remedial action for NPDES violations.

June 1992 Evaluation

- 1.) Determine by use of flowmeters the areas of greatest inflow.
- 2.) Shift televising efforts to areas determined by flow metering, as having the greatest amount of inflow problems.
- 3.) Determine repair schedule for correcting pipe collapses and separations, found during televising. A conservative estimate would indicate that we will locate at least the same number of repairs by televising as we found during smoke testing, which was equal to 107 infiltration/inflow locations. It is likely that repair work will lag well behind televising efforts.
- 4.) Quantify in gallons the bypass flows during wet weather.
- 5.) Resolve Girl Scout Camp inflow problem.
- 6.) Determine if project budgeting for I & I abatement and sludge belt press building are within projected guidelines. A determination of which project receives priority status may have to be made at this point to prevent the return of financial hardship suffered by SHWW during 1991 and early 1992. I & I abatement and the sludge press project go hand in hand for the elimination of NPDES violations.
- 7.) Determine work progression through the end of September 1992 as related to the I & I and sludge press projects.

I will be in Indianapolis February 18 - 20, 1992 and would like very much to meet again with you, Cody Fleece and Paul Cluxton to discuss the contents of this letter in relation to the Wineland Estates situation and the overall I & I and sludge press building projects as related to our NPDES violations. If a meeting during this time period is possible, please call me so that we can make the arrangements.

Respectfully,



Steven D. Fickle
General Manager
South Haven Water Works

cc: Mr. Cody Fleece
Mr. Paul Cluxton ✓
Mr. Todd Leeth
Mr. David Saylor

SOUTH HAVEN WATER WORKS, INC.

305W 700N

VALPARAISO, IN 46383

PHONE 759-3215

CUSTOMER NAME _____ ACCT. _____ LOT _____

ADDRESS OF PROPERTY _____

PHONE _____ DATE REQUESTED _____

SEWER INSPECTION REPORT

ITEM	PASS	REJECT	COMMENTS
1 DOWN SPOUTS			
2 FOOTING DRAINS AND TILES			
3 SUMP PUMP(S) LOCATION			
4 CLEANOUT / YARD DRAINS			
5 OPEN SYSTEM			
6 OTHER (DESCRIBE)			

REINSPECTION REQD. ☐ YES ☐ NO WHY: _____

COMMENTS: _____

WATER INSPECTION REPORT

ILLEGAL PIPING BEFORE METER ☐ YES ☐ NO

WATER SOFTENER ☐ YES ☐ NO AIR GAP ☐ YES ☐ NO VERT. DIST. _____

CROSS - CONNECTION ☐ YES ☐ NO IDENTIFY _____

TYPE OF PROTECTION NEEDED: ☐ MECHANICAL DEVICE ☐ AIR GAP VERT. DIST. _____

METER SEALED BEFORE INSPECTION ☐ YES ☐ NO AFTER: ☐ YES ☐ NO

B. F. P. SEALED BEFORE INSPECTION ☐ YES ☐ NO AFTER: ☐ YES ☐ NO

REINSPECTION REQD. ☐ YES ☐ NO WHY: _____

COMMENTS: _____

CUSTOMER SIGNATURE _____

DATE OF INSPECTION _____ INSPECTOR _____ REG. NO. _____

INFILTRATION AND INFLOW REPAIRS

Plan to rehabilitate wastewater collection system will be addressed in six phases. If at the end of any phase the desired result is accomplished; that being the cure to most of the inflow and infiltration to the degree that no bypassing shall occur under most weather conditions, then the subsequent phases shall be abandoned, or reassessed to determine if further efforts are cost-effective.

PHASE I

March 15, 1989

MANHOLE INSPECTION AND REHAB

All 682 manholes and clean outs (lampholes) will be inspected and rejuvenated as needed using the Cherne/3M method. A conservative estimate is two manholes per day in a nine month working season. Optimum cures will be produced during extended periods of wet weather. The estimate of two manholes per day includes re-inspection of worked manholes and re-working, if needed. Optimum time to begin actual work on Phase I should be in March 1990 or earlier if thawing season permits. At the completion of Phase I, an evaluation period of one month should follow to provide evidence pointing to a percent of cure. Assuming manhole rehab does not provide the desired cure, Phase II shall be implemented.

PHASE II

LINE SMOKING

All gravity lines have been assigned zones; there being 67 in

in all. Zones have been assigned by flow patterns and manageable branching. The shortest zone consists of 600 feet and the longest is two miles or 10,560'. Total footage is 194,848 feet or approximately 36.9 miles. Optimum smoking conditions are under the driest possible conditions since smoke cannot pass through water. A conservative estimate is that our forces can smoke and document 3,000 feet per day. This includes parcelling out zoning, moving equipment, blocking downstream receivers, time lapse to saturate lines and video documentation of leakage and illegal hookups. I.U.R.C. engineering has advised that upon finding improper customer hook-ups, they should be immediately sent disconnect notices that allow a grace period for corrective action and then prove integrity of their service to avoid disconnection. It is perceived that since manhole rehab will precede smoking, there can be some time overlap, i.e., once the manholes have been put in an acceptable condition, in a given zone, smoking can begin in that zone, while manhole rehab continues further downstream. Conflicts may occur due to adverse weather conditions. As previously noted, optimum conditions exist in wet weather for manhole rehab and dry for smoking, although it would seem possible to smoke all the system in 65 days. Secretarial and paper support of this discipline will add another 45 days (est.) to the completion of this task. Acquisition of equipment and training in this phase should take less than a week. Openings that are discovered other than business and residential customers will be cured as they are found; the most flagrant having priority. The time to accomplish this is totally unknown, however a conservative guess-timate could be as much as 3 months.

PHASES III & IV

FLOW METERING & FLOW ISOLATION

The¹⁵ stage requires a minimum of three sewerage metering devices, and depending on what is discovered in Phases I & II, metering shall begin at the completion of PHASE II if it's evaluation indicates its necessity. Meters will be placed in suspect segments of here-to-for described zones. Utilization should span both wet and dry conditions to isolate inflow or massive infiltration. After some lengthy discussion with representatives of the Pitometer Corp. it appears there can be no finite time commitments to this effort. This suggests that we should purchase metering equipment and monitor collection system performance on an ongoing basis making it a part and parcel of routine maintenance.

PHASE V

TELEVISION OF LINE

This phase again is totally dependant on the discovery of unacceptable performance by flow isolation. Past experience with televising of lines is that local contractor can video-cam 1000 feet per day. This does not include prior jet cleaning to prepare said lines. My belief is that we will find only a few points of major aggravation, but of course that is only my speculation.

PHASE VI

I.D.E.M.

Phase VI consists of timely periodic notification to the I.D.E.M. of the progress of each phase and its effectiveness. I recommend that we solicit their input on this and plug it into our schedule.

All phases of this endeavor in their specific time frames will be supported by office and other logistics. They are as follows:

1.) CUSTOMER NOTIFICATION

Customer notification includes letters to those residents and businesses that may be affected, including what we are doing and why. A news release to newspapers of general circulation in our service area. It is assumed Phase II will generate much excitement, so that we must implement a "knock on door" notification policy immediately prior to line smoking, local police and fire departments will also have to be appraised of the exact areas and times those areas are to be charged with smoke.

2.) ACQUISITION OF EQUIPMENT

All equipment has been ordered for manhole rehab. Other types of equipment shall either be purchased or leased depending upon the longevity of the program or the cost effective need to an ongoing program and the ability of our own labor to utilize same.

3.) CREW TRAINING

Crew training will include "hands-on" simulation under supervision, care and maintenance of equipment, review of supporting technical data and techniques provided by manufacturer. Actual repair under supervisory critique.

4.) SAFETY PRACTICES

Includes review of inherent dangers working in manholes, gas detection equipment and its function. Use of separate air supply and those safety practices peculiar to its use. The technique and application of blower ventillation, and proper clothing etc.

5.) EVALUATION MONITORING

Evaluation monitoring shall be implemented in two ways, and will be continuing throughout the entire project. The first part will be the logging of finished manholes or finished lines or repairs, including those not in need of repair, as a percentage against those not yet addressed and that relation to the flow into the plant.

The second continuing part will be a monitoring of completion estimates.

All phases shall be recorded on a critical path chart as an aid to avoid conflicts of efforts, timing of equipment acquisition, training and monitoring schedule goals.