SANITARY SEWER SYSTEM ASSESSMENT

GENERAL INFORMATION

CHECKLIST COMPLETED BY: CITY STAFF CONTRACTOR/VENDOR

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name Date

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Contact Information

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| **UTILITY CONTACT INFORMATION** |
| Utility Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   |  |  | | --- | --- | | **MAILING ADDRESS**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Street Address  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Street Address (continued)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  City State Zip | **CONTACT INFORMATION**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Name  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Title  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Email  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Phone Fax | |

GENERAL INFORMATION

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| **PERMITTED TREATMENT & COLLECTION FACILITIES** |
| |  |  |  | | --- | --- | --- | | NPDES or STATE PERMIT # | PERMITTEE/  CO-PERMITTEE/JURISDICTIONS | CHECK WHICH UTILITIES HAVE PERMIT COVERAGE  WWTP Collection Wet-Weather  Effluent System Facility |  |  |  |  | | --- | --- | --- | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  | | --- | --- | --- | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  | | --- | --- | --- | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  | | --- | --- | --- | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | |

GENERAL INFORMATION

**A B C D**

What class is the system or facility?

Does appropriate person(s) on city staff have proper wastewater operating **YES NO**

license(s) as required by the Minnesota Pollution Control Agency? (*See below)*

Which type of certificate(s) does the operator(s) on city staff hold? **A B C D**

(*Check all that apply*)

**SA SB SC SD**

**Class A Certificate:** Operator must have been certified as a Class B operator for at least two years, and have a high school diploma or equivalent with at least eight years experience in the operation of a Class A or B system or facility; or a bachelor's degree in an appropriate branch of engineering or in a physical or biological science, and satisfactory evidence of at least four years of responsible experience in the operation, including at least two years as a part of the management of a Class A or B system.   
  
**Class B Certificate:** Operator must have been certified as a Class C operator for at least one year; and have a high school diploma or equivalent with at least six years experience in the operation of a Class A, B, or C system or facility; or a bachelor's degree in an appropriate branch of engineering or in a physical or biological science, and satisfactory evidence of at least two years of responsible experience in the operation of a Class A, B, or C system.   
  
**Class C Certificate:** Operator must have a high school diploma or equivalent with at least three years experience in the operation of a Class A, B, C, or D system or facility; or a bachelor's degree in an appropriate branch of engineering or in a physical or biological science, and satisfactory evidence of at least one year of responsible experience in the operation of a Class A, B, C, or D system.   
  
**Class D Certificate:** Operator must have a high school diploma or equivalent, and have at least one year experience in the operation of a Class A, B, C, or D system; or satisfactorily completed a postsecondary program of courses in water or wastewater technology.   
  
**Type S Certificate:** Operator must possess the same education and experience required for a regular wastewater certificate in the same class, except experience must have been gained in a facility or type S facility and an applicant for an S-A type certificate must have been certified as an S-B or B facility operator for at least two years; or an applicant for a type S-B certificate must have been certified as an S-C or C facility operator for at least one year.

COLLECTION SYSTEM DESCRIPTION

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| **SYSTEM INVENTORY (ONLY COMPLETE IF MUNICIPAL FACILITY)** |
| **YES NO**  Does the utility have a treatment facility?  If no, where does the waste go? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_MGD  \_\_\_\_\_\_  MGD  \_\_\_\_\_\_\_  MGD  \_\_\_\_\_\_\_\_\_  MGD  \_\_\_\_\_\_\_\_  Number  **COLLECTION FACILITIES**    Average daily Peak  flow flow    Average dry  weather flow    **TREATMENT FACILITIES**    Treatment Facilities  WWTP design capacity  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **ACCESS & MAINTENANCE CONVEYANCE & PUMPING**  Gravity Force Pump  \_\_\_\_\_\_\_\_  Number  Manholes Sewers Mains Stations  **Pipes & pumps**  \_\_\_\_\_\_\_  Number  \_\_\_\_\_\_\_  Feet  \_\_\_\_\_\_\_\_  Feet  Length/quantity    \_\_\_\_\_\_\_\_  Number  Air vacuum **Age of system**  \_\_\_\_\_\_\_  Number  \_\_\_\_\_\_\_  Feet  \_\_\_\_\_\_\_  Feet  relief valves 0-25 years old    26-50 years old  \_\_\_\_\_\_\_  Number  \_\_\_\_\_\_\_  Feet  \_\_\_\_\_\_\_  Feet  51-75 years old  \_\_\_\_\_\_\_  Number  \_\_\_\_\_\_\_  Feet  \_\_\_\_\_\_\_  Feet    >76 years old  \_\_\_\_\_\_\_  Number  \_\_\_\_\_\_\_  Feet  \_\_\_\_\_\_\_  Feet        Number of inverted siphons \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

COLLECTION SYSTEM DESCRIPTION

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| **SERVICE AREA CHARACTERISTICS** |
| \_\_\_\_\_\_\_\_  Sq Miles  Service area **Number of Service Connections**    Residential Non-Residential TOTAL  \_\_\_\_\_\_\_\_  People  Service population  \_\_\_\_\_\_\_\_  Number  \_\_\_\_\_\_\_\_  Number  \_\_\_\_\_\_\_\_  Number  + =    \_\_\_\_\_\_\_\_  Inches  Annual precipitation  At what point in the system is the utility responsible for maintenance and repair related to service laterals? (*check one*) *Definition*: The service lateral is constructed by a private owner for sewer service to a private property. The service lateral is the extension that connects a private sewer to the city sewer.  At main line connection only At the building  At the property line or easement Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Combined Sewer Systems YES NO**  Is any part of the system served by combined sewers (i.e., sanitary sewage  and storm water in the same pipe)? |

COLLECTION SYSTEM DESCRIPTION

Note the number of feet of the following kinds of pipe in the city’s sanitary sewer system:

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| --- | --- | --- | --- |
| **PIPE DIAMETER** | | | |
| **GRAVITY SEWERS** | | **FORCE MAINS** | |
| 8 inches or less | \_\_\_\_\_\_\_\_\_\_ Feet | 2 inches or less | \_\_\_\_\_\_\_\_\_\_ Feet |
| >8 – 12 inches | \_\_\_\_\_\_\_\_\_\_ Feet | >2 – 4 inches | \_\_\_\_\_\_\_\_\_\_ Feet |
| >12 – 20 inches | \_\_\_\_\_\_\_\_\_\_ Feet | >4 – 6 inches | \_\_\_\_\_\_\_\_\_\_ Feet |
| >20 inches | \_\_\_\_\_\_\_\_\_\_ Feet | >6 – 8 inches | \_\_\_\_\_\_\_\_\_\_ Feet |
|  |  | Other | \_\_\_\_\_\_\_\_\_\_ Feet |

|  |  |  |  |
| --- | --- | --- | --- |
| **PIPE MATERIAL** | | | |
| **GRAVITY SEWERS** | | **FORCE MAINS** | |
| Vitrified clay pipe  (VCP) | \_\_\_\_\_\_\_\_\_\_ Feet | Ductile Iron Pipe  (DIP) | \_\_\_\_\_\_\_\_\_\_ Feet |
| Polyvinyl Chloride  (PVC) | \_\_\_\_\_\_\_\_\_\_ Feet | Polyvinyl Chloride  (PVC) | \_\_\_\_\_\_\_\_\_\_ Feet |
| High density polyethylene  (HDPE) | \_\_\_\_\_\_\_\_\_\_ Feet | High density polyethylene  (HDPE) | \_\_\_\_\_\_\_\_\_\_ Feet |
| Reinforced concrete pipe  (RCP) | \_\_\_\_\_\_\_\_\_\_ Feet | Other (*Explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ Feet |
| Pre-stressed concrete cylinder pipe  (PCCP) | \_\_\_\_\_\_\_\_\_\_ Feet |  |  |
| Other (*Explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ Feet |  |  |

LIFT STATIONS (LS)

**YES NO**

LS-01 Are Standard Operating Procedures (SOPs) and Standard Maintenance Procedures (SMPs)

used for each pump station?

Components of SOPs and SMPs include:

* Easy availability of original manuals that contain the manufacturers recommended maintenance schedules for all lift station equipment
* Operating procedures for manipulating pump operations (manually or automatically)

during wet weather to increase in-line storage of wet weather flows

* Setting wet well operating levels to limit pump start/stops
* Cleaning wet well
* Calibrating flow meters or conducting draw down tests
* Regular rotation of lead, lag, and backup pumps
* Maintenance of operation logs and general records for all lift station activities, including inspections

1. Clean force mains
2. Identify problem areas/components

LS-02 Does the utility record the number of lift stations, their location, date of installation,

and capacity of each pump station?

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| **ALARM SYSTEMS** |
| |  | | --- | | \_\_\_\_\_\_\_\_  Number  Number of lift stations |   LS-03 What type of alarm system(s) does the lift station(s) have? Telemetered ■ How many? \_\_\_\_\_\_    Audiovisual only ■ How many? \_\_\_\_\_\_    **YES NO**  LS-04 Is the alarm system monitored 24 hours per day?  LS-05 Is there a 24 hour notification of alarms?  LS-06 Does the utility know who manufactured the alarm?   |  | | --- | | LS-07 Which of the following methods does the utility use when loss of power occurs? (*Check all that apply*)  On-site electrical generators Portable electric generators Alternate power source  Vacuum trucks to bypass pump Portable bypass pump Other  stations | |

LIFT STATIONS (LS)

The following assessment can be used to identify the utility’s lift stations and how often the alarm systems are monitored. This checklist recognizes that some communities might have a large number of grinder pumps. If this is the case, you could group the number of grinder pumps together and list their monitoring frequency as a whole (e.g. grinder pumps 1-37 are monitored quarterly).

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| **ALARM SYSTEMS (*continued*)** | |
| **Lift Station** | **MONITORING FREQUENCY** |
| Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Location \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Daily Weekly Other (*explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Location \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Daily Weekly Other (*explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Location \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Daily Weekly Other (*explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Location \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Daily Weekly Other (*explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Location \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Daily Weekly Other (*explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Location \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Daily Weekly Other (*explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Location \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Daily Weekly Other (*explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Location \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Daily Weekly Other (*explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Location \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Daily Weekly Other (*explain*) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

SEWER CLEANING (CLN)

**YES NO**

CLN-01 Does the utility have a written schedule in place for routine inspecting/cleaning

of the system?

CLN-02 Does the utility have a documented inspection and cleaning program of problem areas?

CLN-03 Does the utility have a documented root control program?

CLN-04 Does the utility have a documented fats, oils, and grease (FOG) program? (FOG usually

comes from food service or production industries, but may stem from residential homes

and/or other businesses.)

CLN-05 Are stoppages plotted on maps and correlated with other data such as pipe size and

material or location?

CLN-06 Does the city televise private lines?

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| CLN-07 When does the city televise city lines? *(Check all that apply.)*    Before cleaning After a claim has been made When pipe is identified as having a backup,  having a history of backups, or other  After cleaning During weather event possible problem identified during routine  maintenance  On a regular schedule After weather event |

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| CLN-08 Which of the following information is included in the sewer cleaning records? (*Check all that apply*.)  Manhole inspection Method of cleaning Public line  Date and time Location of stoppage or routine Private line  cleaning activity  Cause of stoppage Further actions necessary/initiated  Materials removed from the  Identity of cleaning crew line (rags, grease, etc.) |

**YES NO**

CLN-09 Does the city contract (vendor, contractor, other city) for sewer cleaning?

If you answered YES to CLN-09, please complete the following:

CLN-10 What services are contracted? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CLN-11 Has the current contract between the city and the contractor been reviewed by

the League of Minnesota Cities Insurance Trust?

CLN-12 Does the contractor televise the lines before and after cleaning?

CLN-13 Does the city receive a copy of the video and a written report summarizing findings and

observations before and after lines are cleaned?

RECORD KEEPING (RK)

For purposes of this checklist, the term “backup” is defined as an overflow or accumulation in the system due to a stoppage, malfunction, etc. The term “bypass” is defined as the removal of sanitary sewage or storm water within the system for purposes of placing elsewhere.

**YES NO**

RK-01 Does the utility have a record keeping system in place for tracking maintenance

activities? (*Either electronic or good paper files*.)

RK-02 Are records maintained for a minimum of at least six years? (*Claims brought more*

*than six years after the date of accident or injury are likely to be barred by the statute*

*of limitations set forth in Minn. Stat. 541.05, Subd.1*.)

RK-03 Does the utility keep track of all backup events?

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| RK-04 Which of the following have a program management or tracking system in place? (*Check all that apply*.)  Work orders Scheduled inspections Equipment/tools tracking  Public Education Safety incidents Parts inventory  Scheduled maintenance Scheduled monitoring/sampling Public backups  Standard operating Compliance/overflow tracking Private backups  procedures |

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| RK-05 How often are your records updated? (*Check one*.)  Immediately (within one business day) Within one week of the “incident”  Monthly As time permits |

NEW SYSTEM CONSTRUCTION (NSC)

**YES NO**

NSC-01 Are construction sites inspected by qualified personnel to ensure construction is

taking place in accordance with plans and specs?

NSC-02 Are new lines televised prior to being hooked into city system?

NSC-03 Are the televised records retained for a minimum of at least 12 years? (*Claims brought*

*more than 12 years after the date a system was constructed or modified are likely to be*

*barred by the “improvement to real property” statute of limitations as set forth in*

*Minn. Stat. 541.051, Subd.1.*)

OVERFLOW EMERGENCY RESPONSE PLAN (OERP)

**YES NO**

OERP-01 Does the utility have a documented OERP available for utility staff to use?





Components of an OERP include:

* A detailed description of specific responsibilities for personnel who respond to

emergencies

* Ongoing training and drills for staff who respond to emergency situations
* Prompt access for work crews to tools and equipment during emergencies
* Standard procedures for notifying state agencies, duty officers, local health

departments, the NPDES authority, the public, and drinking water authorities of

overflow events

* A public notification plan
* Procedures to limit public access to and contact with areas affected with SSOs

(*Procedures can be delegated to another authority.)*

* Containment techniques to protect the storm drainage systems



OERP-02 Is the OERP reviewed and updated at least once a year?



OERP-03 Does the utility keep track of the names, titles, phone numbers, and responsibilities





of all personnel involved in emergency situations?

OERP-04 Are hazardous material or petroleum spills reported to the Minnesota Duty





Officer at 800-422-0798 in a timely manner (i.e. within 24 hours)?

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| OERP-06 What information is included in the city’s overflow records? (*Check all that apply.)*        Date and time Location Any corrective efforts/actions  Cause(s) How it was stopped Estimated flow/volume discharged    Name(s) of affected Name(s) of employee(s) Duration of overflow        receiving water(s) responding  Overflow treatment provided      Weather/rainfall |

SAFETY (SAF)

**YES NO**

SAF-01 Does the utility/city have an active safety program (i.e. safety committee, regular

safety meetings, safety training program, records of employee safety training)?

SAF-02 Does the utility have a written safety policy that is reviewed and/or revised

at least once a year?

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| SAF-03 Does the utility have written safety procedures for the following? *(Check all that apply)*  **YES NO N/A YES NO N/A**  Lockout/tagout Biological hazards in wastewater  Material safety data sheets (MSDS) Traffic control and work site    Chemical handling Electrical and mechanical systems    Confined space entry Pneumatic and hydraulic systems    Trenching and excavations |

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| SAF-04 Are the following equipment items available and in adequate supply?  **YES NO N/A YES NO N/A**  Confined space ventilation Portable crane/hoist  equipment  Fire extinguishers  Respirators and/or self contained  breathing apparatus Traffic/public access  control equipment  5-minute escape breathing devices  Protective clothing (PPE)  Atmospheric testing equipment  and gas detectors Fiberglass or aluminum  ladders  Full body harness  Antibacterial soap and  Tripods or non-entry rescue first aid kit  equipment |

SYSTEM MAPPING (MAP)

**YES NO**

MAP-01 Are “as built” plans (record drawings) or maps available for use in the office and

in the field?

MAP-02 Is there a procedure to record changes or inaccuracies in the maps and update the

mapping system?

MAP-03 Do the maps show the date the map was drafted and the date of the last revision?

MAP-04 Is there a numbering and identification method established to identify manholes,

sewer lines, and other items (pump stations, etc.)?

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| MAP-05 Do you require new “as built” plans to include the following? This recognizes that older as-built plans may not have all the following components. (*Check all that apply*.)  Scale Street names Slope  North arrow Flow monitor location Pipe diameter  Date the map was drafted Force mains Installation date  Date of last revision Pump stations Age of manhole  Service area boundaries Lined sewers Manhole depth  Property lines Main, trunk, and interceptor Manhole coordinates  sewers  Other landmarks (roads, Manhole inverts/drops  water bodies, etc.) Easement lines and  dimensions Distance between manholes  Location of building laterals  Separate/combined sewer Manhole and other access  Pipe material points  Condition of pipe  Manhole material |