Water and Waste Department
Wastewater Services Division

Guideline to Create Safety Management Documents

- **Safe Work Procedure (SWP);**
- **Standard Operating Procedure (SOP); and**
- **Lockout Tagout Procedure (LOTO)**

Document Number: OSB-SA-GUI-0001

Revision History

Revision	Date	Revision Made	Revised By
(2)	2020-01-20	Version Update	Operational Systems Branch

Water and Waste Department
Wastewater Services Division

WWS Safety Information Guideline

1 INTRODUCTION

Safety information are set of procedures that document routine or repetitive operational activities; describe a step by step approach to carrying out an operational task and; control hazardous energy. The development and use of safety documentation are an integral part of a successful safety management system as it provides individuals with the information to perform a job properly, and facilitates consistency in the quality and integrity of running the City of Winnipeg Wastewater Services operation. The City of Winnipeg Wastewater Services safety documentation consist of: Risk Assessment, Safe Work Procedure (SWP), Standard Operating Procedure (SOP) and Lockout Tagout Procedure (LOTO).

The purpose of this guideline is to create a set of instructions to ensure project consultants and contractors provide all safety information regarding the assets and/or the processes to be acquired after any project. Other benefits of obtaining standardized safety documentation are:

- It provides quality information to address safety concerns
- Minimizing the opportunities for miscommunication during operational task.
- Reducing work effort, along with improved comparability, credibility, and legal defensibility.
- It provides quality information valuable for reconstructing project activities when no other references are available.

1.1 Risk Assessment

a) Task risk assessment tool to collect information that will determine if SWP, SOP or LOTO should be created for repair and maintenance processes.
b) Lockout hazard identification and risk assessment worksheet to ensure all hazards of a piece of equipment or machinery with high task risk score are identified.

1.2 Safe Work Procedure (SWP)

"**Safe Work Procedure**" or "**SWP**" means a written, specific step by step description of how to complete a task safely from start to finish.

1.3 Standard Operating Procedure (SOP)

"Standard Operation Procedure" or "SOP" means a written set of a set of step-by-step instructions to complete a task in accordance with design and facility requirements. The SOPs

provide standardized documented guidance to plant staff for undertaking key operational procedures.

1.4 Lock Out- Tag Out (LOTO)

"**Lock Out – Tag Out Procedure**" means a written, specific step by step description of how to physically lock equipment or a process in a de-energized position including the accompanying labelling process for indicating the equipment or process is locked-out.

2 DOCUMENTATION EXPECTATION

This guideline should be used to document safety information based on industry best practices. Consultants or contractors are expected to provide the following safety information: SWP, SOP and LOTO procedures to the City representative by using the embedded templates

3 DOCUMENTATION METHODOLOGY

To ensure consultants or contractors use the guideline successfully, it is important to explain that there are three parts to this guide and these include:

- Part A: It provides instructions on how to perform Job Hazard Analysis to determine the tasks/job that require SWP, SOP or LOTO procedures.
- Part B: It provides instructions to create SWPs and SOPs.
- Part C: It provides instructions to create LOTO.

3.1 Part A: Risk Assessment

Step 1: Job/Operational Tasks Inventory

Consultants or contractors shall identify the tasks/job inventory that are required to repair or maintain an asset/equipment/process using:

- Industry experience and familiarization with the tasks/job inventory of Wastewater Treatment Plant.
- The operations manual

Consultants or contractors shall determine the job/operational tasks risk scores by using the embedded excel template (Task Risk Assessment). Below is a picture of what the embedded template looks like. Also embedded is a risk assessment sheet that provides a score value for each of the parameters in the Task Inventory Risk Assessment spreadsheet. For each operational task, identify the risk score value for:

- The frequency of Exposure (A);
- The probability of occurrence (B) and:
- The severity of consequence (C)

Operational Task/Job	Frequency of Exposure (A)		Probability of Occurrence (B)		Severity of Consequence (C)		Risk Score (A x B x C)	SWP Required (Yes / No/Existing)
	Description	Score	Description	Score	Description	Score		

The total risk score value determines if SWP, SOP and/or LOTO will be created for the operational task. From the risk assessment sheet determine if the total risk score is high, medium or low.

Step 2: Identify operational task that requires SWP, SOP or LOTO

Develop SWP for jobs/operational tasks that have a risk score of three or higher and SOP for Jobs/operational tasks that have a risk score of two or one. Nothing is required for a score of 0. If a similar SWP or SOP exists for an identified operational task, the rule will not be applicable. LOTO should be developed for assets/equipment that are involved in operational tasks/jobs.

3.2 Part B: Development of SWPs and SOPs

Use the embedded job hazard analysis (JHA) template provided to identify job steps and hazards. The template is a development tool that will assist with the creation of potential SWP identified in step 2 above. Information gathered in this step will be used to develop the final SWP. Complete the following steps in order to document each job hazard analysis (JHA):

- From step 2 above, identify the operational task that requires SWPs based on completed risk assessment.
- Indicate the job name on the JHA template for each of the operational task/job
- Complete the Training, Personal Protective Equipment (PPE) and Tools/Supplies fields needed to get the work done.
- Identify the job steps, hazards and corrective actions.

Step 3: Review the list of existing SWP(s) for the facility in question to avoid duplicates. If SWP exists then you are not required to develop another, but identify the existing SWP on the list provided by the City.

Step 4: Use the SWP template provided to develop SWP(s) based on the output of the risk assessment and the job hazard analysis in steps 1&3 above. The following should be considered when developing SWP:

- Provide a title for the SWP and populate the **Procedure title.**
- Populate the **Created Date** and **Created By** fields
- Input **Document number:** SAF-SE-SWP-0000 for SEWPCC, SAF-NE-SWP-0000 for NEWPCC and SAF-WE-SWP-0000 for all WEWPCC respectively. The red colour coded digits will prompt the need for a number as soon as the City receives the SWP documents during the first review.
- Leave the **Crew** field blank
- Use the tables in the appendix to indicate the facility location/area (building description) where the SWP will be used. Request additional codes from the City Representative or project manager if working on new buildings or existing facility location/area is not included
- Complete the Hazards, Training, Personal Protective Equipment (PPE), Tools/Supplies, and Safe Approach.
- **SWP format** – Each SWP detail should be organized in sequential order in which the task is performed and the gray row which are numbered 1, 2 ,3….. will help to achieve this sequential order until the process is finished.
- **"If statement"**- This is a guidance statement that would direct workers on what to do if the situation changes.
- **"Never statement"** – This is a cautionary statement that would prevent accidents.
- **Reference to the act and regulation –** All hazards listed in the procedures are to be referenced in Workplace Safety & Health Act W210 Manitoba Regulation at the extreme right of the bottom of the template.
- **Pictures** – Pictures are only necessary (but not required) if they contribute to the understanding of the procedure.

Step 5: Use the embedded SOP template to develop SOP(s) with sufficient details to allow the document to stand alone and not depend on other operational instruction documents, with the exception of SWPs which may be referenced in an SOP.

Note that instruction is provided in the embedded SOP template to develop detailed SOP.

Part C: Development of LOTO Procedure

Step 6: Use the embedded hazard analysis to identify hazards and develop the LOTO procedure using the embedded LOTO template based on industry's best practices.

APPENDIX

1. BUILDING SEGMENT

NEWPCC BUILDING SEGMENTS

CODE TABLE 25	BUILDING DESCRIPTION
NEWPCC ADMIN	NEWPCC MAIN ADMINISTRATION
NEWPCC BLDG LEACHATE	NEWPCC LEACHATE BUILGING
NEWPCC BLDG LHW #1	NEWPCC LIQUID HAULED WASTEWATER BUILDING #1
NEWPCC BLDG LHW #2	NEWPCC LIQUID HAULED WASTEWATER BUILDING #2
NEWPCC BOILER	NEWPCC BOILER
NEWPCC DEWATERING	NEWPCC DEWATERNG
NEWPCC DIGESTER	NEWPCC DIGESTER
NEWPCC DRYING BEDS	NEWPCC DRYING BEDS BLDG #3
NEWPCC GARAGE	NEWPCC MAIN GARAGE
NEWPCC GAS BURNER	NEWPCC GAS BURNER
NEWPCC GAS SPHERE	NEWPCC GAS SPHERE
NEWPCC GRIT	NEWPCC GRIT
NEWPCC HAULED WASTE	NEWPCC HAULED WASTEWATER
NEWPCC LAB	NEWPCC MAIN LAB
NEWPCC LEACHATE	NEWPCC LEACHATE
NEWPCC MAIN	NEWPCC MAIN PUMPING
NEWPCC N-REMOVAL	NEWPCC NITROGEN REMOVAL
NEWPCC P-REMOVAL	NEWPCC PHOSPHORUS REMOVAL
NEWPCC PRIMARY	NEWPCC PRIMARY
NEWPCC REACTOR	NEWPCC REACTOR
NEWPCC SECONDARY	NEWPCC SECONDARY
NEWPCC UV	NEWPCC ULTRA VIOLET / TERTIARY

Table 1: NEWPCC Building Segment

SEWPCC BUILDING SEGMENTS

Code Table 25	Building Description
SEWPCC ADMIN	SEWPCC ADMINISTRATION

SEWPCC GENERATOR	SEWPCC GENERATOR
SEWPCC GRIT	SEWPCC GRIT
SEWPCC MAINT	SEWPCC MAINTENANCE
SEWPCC OIL STORAGE	SEWPCC OIL STORAGE
SEWPCC OUTFALL	SEWPCC OUTFALL
SEWPCC PRIMARY	SEWPCC PRIMARY
SEWPCC REACTOR	SEWPCC REACTOR
SEWPCC SECONDARY	SEWPCC SECONDARY
SEWPCC SEPTAGE	SEWPCC SEPTAGE
SEWPCC UV	SEWPCC ULTRA VIOLET / TERTIARY

Table 2: SEWPCC Building Segment

WEWPCC BUILDING SEGMENTS

Code Table 25	Building Description
WEWPCC ADMIN	WEWPCC ADMINISTRATION
WEWPCC DAF	WEWPCC DAF & CHEMICAL FEED
WEWPCC FERMENTER	WEWPCC FERMENTER
WEWPCC HEADWORKS	WEWPCC HEADWORKS
WEWPCC MONITORING	WEWPCC EFFLUENT MONITORING STATION
WEWPCC OUTFALL	WEWPCC OUTFALL
WEWPCC PRIMARY	WEWPCC PRIMARY
WEWPCC PRPS	WEWPCC PERIMETER ROAD PUMP STAION
WEWPCC SECONDARY	WEWPCC SECONDARY
WEWPCC UTILITY	WEWPCC UTILITY

Table 3: WEWPCC Building Segment

2. SWPs and SOPs FOR TREATMENT PLANT

Note:

- The documents may not be numbered sequentially and the reason is when a Standard Operating Procedure or a Safe Work Procedure is archived, the document number it has is also archived

NEWPCC SOPs - Current

#	DOCUMENT NUMBER	STANDARD OPERATING PROCEDURES	PROCESS AREAS

Water and Waste Department
Wastewater Services Division

WWS Safety Information Guideline

		Operations	
1	TRE-NE-SOP-0001	Discharge Chamber Conduit Flushing	Main Building
2	TRE-NE-SOP-0002	Grit Tank Shutdown	Grit
3	TRE-NE-SOP-0003	Inspection of Primary Clarifier Center Outer Ring	Primary
4	TRE-NE-SOP-0004	Isolate UV Channels	UV
5	TRE-NE-SOP-0005	Air Bumping	SBR
6	TRE-NE-SOP-0006	Fill SBR for Idle	SBR
7	TRE-NE-SOP-0007	Isolate and Drain Reactor Train 1	Reactor
8	TRE-NE-SOP-0008	Isolate and Drain Reactor Train 2	Reactor
9	TRE-NE-SOP-0009	Isolate and Drain Reactor Train 3	Reactor
10	TRE-NE-SOP-0010	Isolate and Drain SBR 1	SBR
11	TRE-NE-SOP-0011	Isolate and Drain SBR 2	SBR
12	TRE-NE-SOP-0012	N-Removal MLSS	SBR
13	TRE-NE-SOP-0013	Return SBR 1 to Service	SBR
14	TRE-NE-SOP-0014	Return SBR 2 to Service	SBR
15	TRE-NE-SOP-0015	Secondary MLSS	Secondary
16	TRE-NE-SOP-0016	Startup Reactor 1A and 1B	Reactor
17	TRE-NE-SOP-0017	Startup Reactor 2A and 2B	Reactor
18	TRE-NE-SOP-0018	WAS Tanker Filling	Primary
19	TRE-NE-SOP-0079	Flood Prevention	All
20	TRE-NE-SOP-0082	Measure Secondary Turbidity	Secondary
21	TRE-NE-SOP-0019	Centrifuge Shutdown	Dewatering
22	TRE-NE-SOP-0020	Centrifuge Start	Dewatering
23	TRE-NE-SOP-0021	Hauled Liquid Waste Buildings 1 and 2	Hauled Liquid Waste
24	TRE-NE-SOP-0022	Lechate Sampling Building	Leachate
25	TRE-NE-SOP-0023	Nitrogen System Isolation	Boiler
26	TRE-NE-SOP-0024	Septage LEL Alarm Response	Hauled Liquid Waste
27	TRE-NE-SOP-0084	SBR Purge	SBR
28	TRE-NE-SOP-0085	SBR 2 Operation During Interrupted feeding	SBR
29	TRE-NE-SOP-0086	Non-Routine Sampling Protocol	SBR
		Electrical Instrumentation	
30	TRE-NE-SOP-0080	NEWPCC Power Recovery Dry Side	All
31	TRE-NE-SOP-0081	NEWPCC Power Recovery Wet Side	All
32	TRE-NE-SOP-0083	Procedures for Unexpected Power Outage at the NEWPCC Facility EI	All
33	TRE-NE-SOP-0029	52-L1 Switching Procedure	All
34	TRE-NE-SOP-0030	52-L2 Switching Procedure	All
35	TRE-NE-SOP-0031	LBT1 Switching Procedure	All

36	TRE-NE-SOP-0032	LBT2 Switching Procedure	All
37	TRE-NE-SOP-0033	52-F2 Switching Procedure	All
38	TRE-NE-SOP-0034	52-F3 Switching Procedure	All
39	TRE-NE-SOP-0035	52-F4 Switching Procedure	All
40	TRE-NE-SOP-0036	52-F5 Switching Procedure	All
41	TRE-NE-SOP-0037	MCC-1A Switching Procedure	All
42	TRE-NE-SOP-0038	MCC-2A Switching Procedure	All
43	TRE-NE-SOP-0039	MCC-3A Switching Procedure	All
44	TRE-NE-SOP-0040	52-F1 Switching Procedure	All
45	TRE-NE-SOP-0041	52-F6 Switching Procedure	All
46	TRE-NE-SOP-0042	52-U1 Switching Procedure	All
47	TRE-NE-SOP-0043	52-F7 Switching Procedure	All
		Mechanical Maintenance	
48	TRE-NE-SOP-0044	Replace Bar Screen Scraper Edge	Grit
49	TRE-NE-SOP-0045	Replace Boiler Belts	Boiler
50	TRE-NE-SOP-0046	Replace Clarifier Sweep Cables and Wear Blocks	Primary
51	TRE-NE-SOP-0047	Replace Dewatering Centrifuge Dams	Dewatering
52	TRE-NE-SOP-0048	Replace Grit Cables	Grit
53	TRE-NE-SOP-0049	Replace Heat Pump Filter	Boiler
54	TRE-NE-SOP-0050	Replace HVAC AF9 and AF10 Belts	Secondary
55	TRE-NE-SOP-0051	Replace Pans on Serpentix Conveyor	Grit
56	TRE-NE-SOP-0052	Replace and Service Components of Primary Clarifier 4 or 5	Primary
57	TRE-NE-SOP-0053	Replace Primary Raw Sludge Pump Casing and Gasket	Primary
58	TRE-NE-SOP-0054	Replace SBR Blower Belts	SBR
59	TRE-NE-SOP-0055	Replace Seal Packing on Recirculating Pumps CP-1 (W357) and CP-2 (W368)	Digester
60	TRE-NE-SOP-0056	Replace UV Bank Coolant Pump	UV
61	TRE-NE-SOP-0057	Replace W631 HVAC Pulleys	Dewatering
62	TRE-NE-SOP-0058	Service Dewatering Centrifuge	Dewatering
63	TRE-NE-SOP-0059	Service MP-2 and 4 Slip Regulator Slip Regulator	Main Building
64	TRE-NE-SOP-0060	Change Oil and Inspect C730-P or C760-P Methanol Pump	SBR
65	TRE-NE-SOP-0061	Inspect Primary Clarifier 1, 2 or 3 Sweep	Primary
66	TRE-NE-SOP-0062	Inspect runout of gearbox for centrifuge	Dewatering
67	TRE-NE-SOP-0063	Install Digester Holding Tank Mixing Pumps	Digester
68	TRE-NE-SOP-0064	Install Drainage Pump	Secondary
69	TRE-NE-SOP-0065	Install Electric Drive Bridge Motor for Clarifier 4 or 5	Primary

70	TRE-NE-SOP-0066	Install Electric Motor for Dewatering Centrifuge	Dewatering
71	TRE-NE-SOP-0067	Isolate and Drain 1DF-3 Fan Coil	Digester
72	TRE-NE-SOP-0068	Remove and Install Dewatering Centrifuge	Dewatering
73	TRE-NE-SOP-0069	Remove and Replace Fan Motor on Boiler 4	Boiler
74	TRE-NE-SOP-0070	Remove and Replace Lobe Pump for Dewatering Centrifuge	Dewatering
75	TRE-NE-SOP-0071	Remove and Replace Polymer Blower	Dewatering
76	TRE-NE-SOP-0072	Remove Main Building Raw Sewage Pump	Main Building
77	TRE-NE-SOP-0073	Remove Primary Clarifier 4 or 5 Bridge Wheel	Primary
78	TRE-NE-SOP-0074	Remove RAS 11-26 Pumps	Secondary
79	TRE-NE-SOP-0075	Remove SBR C1-C2 Sump Pumps	SBR
80	TRE-NE-SOP-0076	Remove SBR Mixers	SBR
81	TRE-NE-SOP-0077	Remove Sludge Cake Agitator Motor	Dewatering
82	TRE-NE-SOP-0078	Remove UV Heat Exchanger	UV

NEWPCC SOPs - Archived

Following SOPs have been archived from NEWPCC list as the contents are covered in current SWPs:

S.No.	SOP Title
1	N-SOP-UV001.doc
2	N-SOP-UV002.doc
3	N-SOP-UV003.doc
4	N-SOP-UV004.doc
5	N-SOP-UV005.doc
6	N-SOP-UV006.doc
7	Main Building Raw Sewage Pumps Shutdown for Maintenance or Inspection

NEWPCC SWPs - Current

#	DOCUMENT NUMBER	SAFE WORK PROCEDURES	PROCESS AREAS
		Operations	
1	SAF-NE-SWP-0019	Corrshield Addition	Boiler
2	SAF-NE-SWP-0043	Isolate Boiler Circuit	Boiler
3	SAF-NE-SWP-0044	Isolate Boiler	Boiler
4	SAF-NE-SWP-0094	Replace Nitrogen Cylinder	Boiler
5	SAF-NE-SWP-0119	Warm Up Boiler	Boiler
6	SAF-NE-SWP-0010	Clean Cake Agitator Blades	Dewatering

7	SAF-NE-SWP-0024	Grease Dewatering Centrifuge Bearings	Dewatering
8	SAF-NE-SWP-0026	Inspect Ferric Chloride Rail Car	Dewatering
9	SAF-NE-SWP-0034	Install Vent Manifold and Hoses for Ferric Chloride Rail Car	Dewatering
10	SAF-NE-SWP-0053	Load Polymer with Hopper	Dewatering
11	SAF-NE-SWP-0054	Lockout Dewatering Centrifuge for Service	Dewatering
12	SAF-NE-SWP-0116	Unload Ferric Chloride Rail Car	Dewatering
13	SAF-NE-SWP-0007	Clean and Flush Digester 13 and 14 Heat Exchanger	Digester
14	SAF-NE-SWP-0008	Clean and Test Flygt Balls	Digester
15	SAF-NE-SWP-0011	Clean Digester 9, 10 and 12	Digester
16	SAF-NE-SWP-0012	Clean Digester 9-12 Heat Exchanger	Digester
17	SAF-NE-SWP-0013	Clean Out Digester 13 and 14	Digester
18	SAF-NE-SWP-0023	Flush and Drain DP-13 Pump	Digester
19	SAF-NE-SWP-0038	Isolate and Drain Digester 6 and 8 Holding Tanks	Digester
20	SAF-NE-SWP-0040	Isolate and Drain Digester 9-12 Sludge Recirculating Pump	Digester
21	SAF-NE-SWP-0045	Isolate DR-10 Gas Compressor	Digester
22	SAF-NE-SWP-0050	Isolate Sludge Transfer Pump W350-DSP or W360-DSP	Digester
23	SAF-NE-SWP-0052	Load and Unload Drums	Digester
24	SAF-NE-SWP-0061	Put Digester 13 and 14 Back into Service	Digester
25	SAF-NE-SWP-0062	Put Digester 9, 10 and 12 Back into Service	Digester
26	SAF-NE-SWP-0071	Remove Digester 13 and 14 from Service	Digester
27	SAF-NE-SWP-0072	Remove Digester 9, 10 and 12 from Service	Digester
28	SAF-NE-SWP-0106	Sample Digested Sludge	Digester
29	SAF-NE-SWP-0112	Siphon Digester 13 and 14	Digester
30	SAF-NE-SWP-0117	Unload SCBA Gear	Digester
31	SAF-NE-SWP-0120	Wash Out Digester Tank	Digester
32	SAF-NE-SWP-0009	Clean Bar Screens	Grit
33	SAF-NE-SWP-0046	Isolate Grit Pass	Grit
34	SAF-NE-SWP-0055	Lubricate Bar Screen at NE	Grit
35	SAF-NE-SWP-0058	Operate Grit Bucket	Grit
36	SAF-NE-SWP-0121	Wash Out Grit Tank	Grit
37	SAF-NE-SWP-0047	Isolate Main Building Raw Sewage Pumps	Main Building
38	SAF-NE-SWP-0025	Inspect and Clean Air Purifier Station	Primary
39	SAF-NE-SWP-0036	Isolate 2PP4 Pump	Primary
40	SAF-NE-SWP-0039	Isolate and Drain Primary Clarifier 4 or 5 Tank	Primary
41	SAF-NE-SWP-0093	Replace HVAC PF-23 and 24 Filters	Primary
42	SAF-NE-SWP-0113	Siphon Primary Clarifier 1, 2 or 3 Tank	Primary
43	SAF-NE-SWP-0122	Wash Out Primary Clarifier 1, 2 or 3 Tank	Primary
44	SAF-NE-SWP-0123	Wash Out Primary Clarifier 4 or 5 Tank	Primary

45	SAF-NE-SWP-0014	Clean SBR	SBR
46	SAF-NE-SWP-0118	Unload Tractor Trailer of Methanol	SBR
47	SAF-NE-SWP-0124	Acid Clean	SBR
48	SAF-NE-SWP-0006	Check Secondary Blanket	Secondary
49	SAF-NE-SWP-0041	Isolate and Drain Secondary Clarifier 1-10	Secondary
50	SAF-NE-SWP-0048	Isolate RAS 11-26 Pumps	Secondary
51	SAF-NE-SWP-0049	Isolate Secondary Bridge and Tank	Secondary
52	SAF-NE-SWP-0060	Perform PM Grease and Secondary Bridges	Secondary
53	SAF-NE-SWP-0114	Start RAS 11-26 Pumps	Secondary
54	SAF-NE-SWP-0015	Clean Soda Ash Silo Pressure Valve	Soda Ash
55	SAF-NE-SWP-0016	Clean UV Heat Exchanger	UV
56	SAF-NE-SWP-0017	Clean UV Modules Wipers and Sleeves	UV
57	SAF-NE-SWP-0042	Isolate and Service UV Module	UV
58	SAF-NE-SWP-0063	Raise UV Modules for Flood Preparation	UV
59	SAF-NE-SWP-0125	Installing UV lamps	UV
		Mechanical Maintenance	
60	SAF-NE-SWP-0100	Replace Schwing Pump Pistons and Sleeves	Dewatering
61	SAF-NE-SWP-0035	Service 1000Hr SBR Blower	SBR
62	SAF-NE-SWP-0083	Repair Soda Ash Silo Dry Feed Auger	Soda Ash
63	SAF-NE-SWP-0082	Repair Secondary Clarifier 1-10 Sweep	Secondary
64	SAF-NE-SWP-0107	Service AC 1-2 Air Compressors	Secondary

NEWPCC SWPs - Archived

S.No.	SWP Title
1	EC-800 L Addition
2	Operate Lifttruck
3	Calibrate LEL Sensor
4	Calibrate Main Building Raw Sewage Pump Flow Meter
5	Calibrate Surge Well LEL Sensor
6	Check HVAC AF31 Belts and Pulleys
7	Coat Impellers and Volute Parts
8	Disassemble Main Building Raw Sewage Pumps
9	Disassemble RAS Pump
10	Install Main Building Raw Sewage Pump
11	Install Sludge Transfer Pump W350-DSP or W360-DSP
12	Lift Dewatering Centrifuge out of Building
13	Move Sludge Transfer Pump into Digesters

14	Operate 100Ton Hydraulic Puller at NE
15	Reinstall Heat Exchanger
16	Remove Cake Hopper Gear Box
17	Remove Mechanical Shop Floor Cover
18	Repair Rooftop HVAC Units (contracted out)
19	Replace Dewatering Centrifuge Hydraulic Oil
20	Replace Gas Compressor Drive Dowels
21	Replace Victaulic Clamp Seal on Heat Exchanger Piping
22	Replace Wear Rings on Main Building Raw Sewage Pumps
23	Service Elevator Gear Box
24	Switchgear Operation
25	Weld Broken Bars on Bar Screen

SEWPCC SOPs - Current

#	DOCUMENT NUMBER	STANDARD OPERATING PROCEDURES	PROCESS AREAS
		Operations	
1	TRE-SE-SOP-0002	Flushing Water Shutdown in Primary Branch	Primary
2	TRE-SE-SOP-0003	Flushing Water Shutdown in Secondary Branch	Secondary
3	TRE-SE-SOP-0004	Foul Air Plenum Entry	All
4	TRE-SE-SOP-0005	Identification Control of Filamentous Bacteria	Reactors
5	TRE-SE-SOP-0006	Instruction for Unusual Wastewater Sample Collection and Notification	All
6	TRE-SE-SOP-0009	Plant Entry After Power Failure	All
7	TRE-SE-SOP-0010	Primary Clarifier 1	Primary
8	TRE-SE-SOP-0011	Primary Clarifier 2	Primary
9	TRE-SE-SOP-0012	Primary Clarifier 3	Primary
10	TRE-SE-SOP-0013	Secondary Clarifier 1	Secondary
11	TRE-SE-SOP-0014	Secondary Clarifier 2	Secondary
12	TRE-SE-SOP-0015	Secondary Clarifier 3	Secondary
13	TRE-SE-SOP-0017	Thermal Oxidizer	Thermal oxidizer
14	TRE-SE-SOP-0018	Check Primary Clarifier Blanket	Primary
15	TRE-SE-SOP-0019	Exercise, Inspect and Lubricate Outfall Pit Sluice Gate	Outfall
16	TRE-SE-SOP-0020	Flush Fire Hydrants	Grounds
17	TRE-SE-SOP-0021	Inspect, Remove and Replace HVAC Filters	All
18	TRE-SE-SOP-0022	Isolate Bar screen	Headworks
19	TRE-SE-SOP-0023	Lubricate Bar screen	Headworks

20	TRE-SE-SOP-0024	Replace Flushing Water System Filters	All
21	TRE-SE-SOP-0025	Transport Stop Logs	Outfall
		Electrical Instrumentation	
22	TRE-SE-SOP-0007	Main Breakers	All
23	TRE-SE-SOP-0008	Outfall Entry Exit	Outfall
24	TRE-SE-SOP-0016	Standby Generator Power Test	All
25	TRE-SE-SOP-0001	Emergency Power Test	All
		Mechanical Maintenance	
26	TRE-SE-SOP-0026	Grease Air Compressors	Reactors
27	TRE-SE-SOP-0027	Grease and Oil Flushing Water Pumps	Secondary
28	TRE-SE-SOP-0028	Grease Pump and Driveline on Raw Sewage Pumps	Headworks
29	TRE-SE-SOP-0029	Inspect Backflow Preventers	All
30	TRE-SE-SOP-0030	Lube and Grease HVAC Motor, Fan, and Damper Linkage	All
31	TRE-SE-SOP-0031	Lubricate Heat Pumps on Boilers	Service
32	TRE-SE-SOP-0032	Lubricate Pumps and HVAC Components	All
33	TRE-SE-SOP-0033	Lubrication and Operational Check of HVAC	All
34	TRE-SE-SOP-0034	Replace S649-FN Cooling Tower Fan Belts and Grease	Secondary

SEWPCC SOPs – Archived

S.No.	SOP Title
1	Maintenance of Bridge Cables in Primary Clarifiers

SEWPCC SWPs - Current

#	DOCUMENT NUMBER	SAFE WORK PROCEDURES	PROCESS AREAS
		Operations	
1	SAF-SE-SWP-0017	Clean and Inspect HVAC AHU Condenser Coils	All
2	SAF-SE-SWP-0020	Cleanup Liquid Oxygen Spill	Reactor
3	SAF-SE-SWP-0024	Flush and Brush Heat Exchangers	All
4	SAF-SE-SWP-0041	Install Support Bracket	All
5	SAF-SE-SWP-0043	Isolate UV Bank and Module	UV
6	SAF-SE-SWP-0052	Perform DCS Electrical Power Supply Checks	All
7	SAF-SE-SWP-0053	Perform Standby Generator Electrical Checks	All
8	SAF-SE-SWP-0055	Receive, Store and Use of Sodium Hypochlorite	Secondary
9	SAF-SE-SWP-0058	Remove and Replace Sampler Pump	All

10	SAF-SE-SWP-0071	Run Waukesha Genset	Service
11	SAF-SE-SWP-0074	Shut Down Main Raw Sewage Pump	Headworks
12	SAF-SE-SWP-0075	Shut Down Thermal Oxidizer	Secondary
13	SAF-SE-SWP-0076	Start Waukesha Genset	Service
		Mechanical Maintenance	
14	SAF-SE-SWP-0006	Change Desiccant in Instrument Air Dryer	Secondary
15	SAF-SE-SWP-0011	Check and Clean Lenses on CCTV Cameras	All
16	SAF-SE-SWP-0013	Check Operation of Reactor PSA Skid Valves	Reactor
17	SAF-SE-SWP-0031	Inspect and Maintain Overhead Crane	Service
18	SAF-SE-SWP-0039	Install Bridge Drive Motor	Primary
19	SAF-SE-SWP-0040	Install and Remove Stop Logs	Outfall
20	SAF-SE-SWP-0050	Maintenance on Bar Screen Brake Mechanism	Headworks
21	SAF-SE-SWP-0059	Remove Raw Sewage Pump	Headworks
22	SAF-SE-SWP-0078	Take End Caps Off Chiller Condenser	Service
23	SAF-SE-SWP-0079	Take End Caps Off Heat Exchangers	All
		Electrical Instrumentation	
24	SAF-SE-SWP-0002	Calibrate Conductivity Analyzer	Service
25	SAF-SE-SWP-0004	Calibrate Pressure Switches	All
26	SAF-SE-SWP-0005	Calibrate Truck Bay H2S Sensor	Secondary
27	SAF-SE-SWP-0012	Check High Level Flygt Balls and Controls	Primary
28	SAF-SE-SWP-0015	Check Sump Level Controls and Alarms in Foul Air Duct	All
29	SAF-SE-SWP-0016	Check Sump Level Controls and Alarms	All
30	SAF-SE-SWP-0019	Clean and Inspect VSD Cabinet	Headworks
31	SAF-SE-SWP-0021	Dry Docking Primary Clarifier 1, 2, and 3 Bridge	Primary
32	SAF-SE-SWP-0054	Pinch Valve and LEL Check at Septage Facility	Septage
33	SAF-SE-SWP-0063	Replace Bulbs in Street Lights	Grounds
34	SAF-SE-SWP-0064	Replace Float Switch	Septage
35	SAF-SE-SWP-0066	Replace Primary Clarifier 1 and 2 Bridge Wheels	Primary
36	SAF-SE-SWP-0068	Replace UV Ballast	UV
37	SAF-SE-SWP-0069	Replace UV Bulbs	UV
38	SAF-SE-SWP-0077	Startup Thermal Oxidizer	Secondary
39	SAF-SE-SWP-0080	Test VSD Performance of Drive	Headworks
40	SAF-SE-SWP-0082	Troubleshoot and Test Live Electrical Equipment at SE	All

SEWPCC SWPs – Archived

Water and Waste Department
Wastewater Services Division

WWS Safety Information Guideline

S.No.	SWP Title
1	Brush and Flush Chiller Condenser
2	Calibrate Personal Gas Monitors
3	Change Oil and Oil Filters on Standby Generator
4	Change Oil on Air Compressors
5	Change Oil on Main Raw Sewage Motors
6	Check and Change HVAC Belts
7	Clean and Inspect HVAC R688-AHU Condenser Coils
8	Exercise and Inspect Onan Genset
9	Inspect and Change HVAC Belts
10	Inspect and Maintain Primary Clarifier
11	Inspect and Maintain Secondary Clarifier
12	Inspect Rooftop ACU Conditioning Units
13	Inspection of Septage Security Gate
14	Operate Overhead Crane
15	Remove and Replace Filters on Air Compressors
16	Replace Automatic Greasers on Barscreen
17	Replace Bar Screen Rakes
18	Rigging and Lifting Raw Sewage Pump
19	Service and Inspect Pumps
20	Apply weed killer to Grounds
21	Maintenance on Inlet Chamber Sluice Gate
22	Painting from Scaffolding

WEWPCC SOPs - Current

#	DOCUMENT NUMBER	STANDARD OPERATING PROCEDURES	PROCESS AREAS
		Operations	
1	TRE-WE-SOP-0001	Dissolved Air Floatation	DAF
2	TRE-WE-SOP-0002	Drain and Fill Bioreactor 1	Bioreactor
3	TRE-WE-SOP-0003	Drain and Fill Bioreactor 2	Bioreactor
4	TRE-WE-SOP-0004	Drain Grit Channel 1	Grit
5	TRE-WE-SOP-0005	Drain Grit Channel 2	Grit
6	TRE-WE-SOP-0006	Drain Primary Clarifier 1 for Annual Service	Primary
7	TRE-WE-SOP-0007	Drain Primary Clarifier 2 for Annual Service	Primary
8	TRE-WE-SOP-0008	Fill Secondary Clarifier 1	Secondary
9	TRE-WE-SOP-0009	Fill Secondary Clarifier 2	Secondary
10	TRE-WE-SOP-0010	Fill Secondary Clarifier 3	Secondary

11	TRE-WE-SOP-0011	Isolate and Drain Fermenter F550-FM System	Fermenter
12	TRE-WE-SOP-0012	Isolate and Drain Fermenter F560-FM System	Fermenter
13	TRE-WE-SOP-0013	Isolate and Drain Secondary Clarifier 1	Secondary
14	TRE-WE-SOP-0014	Isolate and Drain Secondary Clarifier 2	Secondary
15	TRE-WE-SOP-0015	Isolate and Drain Secondary Clarifier 3	Secondary
16	TRE-WE-SOP-0016	Perform Volumetric Test	Primary
		Mechanical Maintenance	
17	TRE-WE-SOP-0017	Remove and Replace Belts	All

WEWPCC SOPs – Archived

S.No.	SWP Title
1	M400 Emergency Shutdown and Reset
2	Bioreactor Seeding
3	Bioreactors
4	CEPT Polymer System
5	Determination of groundwater levels
6	Dissolved Air Floatation
7	Drain Flushing Water System and Pump Isolation
8	Emergency Power Test
9	Fermenter Draining
10	Ferric Chloride Delivery
11	Ferric Chloride System
12	Grit Pumps Backflush Sequence
13	Heating, Ventilation and Air Conditioning for BNR
14	Hydrogen Sulfide
15	Lagoon Season Changeover
16	M400 Hand Operation
17	M400-PP Pump Operation Modes
18	Main Breakers and Tie Breaker Operation
19	Primary Clarifier 1 Isolation and Pump Down
20	Primary Clarifier 2 Isolation and Pump Down
21	Primary Sludge Fermenters
22	PRPS Flowmeter Volumetric Test
24	Raw Sewage Pump 1 Isolation
25	Secondary Clarifier 2 Isolation and Pump Down
26	Secondary Clarifiers
27	Sludge Holding Tank Valves and Pump Isolation
28	Drain Bioreactor 1
29	Drain Bioreactor 2

Water and Waste Department
Wastewater Services Division

WWS Safety Information Guideline

30	Sump Pump Priming

WEWPCC SWPs - Current

#	DOCUMENT NUMBER	SAFE WORK PROCEDURES	PROCESS AREAS
		All (Operations, Maintenance & EI)	
1	SAF-WE-SWP-0053	Isolate, Remove and Reinstall M300-P and Impeller	PRPS
2	SAF-WE-SWP-0062	Remove or Install DAF Tank Covers	Secondary
		Operations	
3	SAF-WE-SWP-0004	Change Bearings on H110 or H120 Bar Screens	Headworks
4	SAF-WE-SWP-0012	Check T113-DAF Re-cycle Pump Impeller	DAF
5	SAF-WE-SWP-0013	Check T123-DAF Re-cycle Pump Impeller	DAF
6	SAF-WE-SWP-0015	Clean and Test Fermenter Sludge Pump F551-SLP	Fermenter
7	SAF-WE-SWP-0016	Clean and Test Fermenter Sludge Pump F552-SLP	Fermenter
8	SAF-WE-SWP-0023	Enter and Washout Secondary Clarifier Tank	Secondary
9	SAF-WE-SWP-0024	Enter Bioreactor 1 and 2	Secondary
10	SAF-WE-SWP-0025	Enter Fermenter F550-FM	Fermenter
11	SAF-WE-SWP-0026	Enter Fermenter F560-FM	Fermenter
12	SAF-WE-SWP-0027	Enter Grit Channel	Headworks
13	SAF-WE-SWP-0036	Hoist and Remove Pump M100-PP Motor from Base	PRPS
14	SAF-WE-SWP-0047	Isolate and Lockout Pump M100-PP	PRPS
15	SAF-WE-SWP-0049	Isolate H410-STP or H420 Sludge Transfer Pump	Headworks
16	SAF-WE-SWP-0050	Isolate Pump M200-PP	PRPS
17	SAF-WE-SWP-0052	Isolate RAS Pump	Secondary
18	SAF-WE-SWP-0059	Remove and Install Recycle Pump Mixer from Bioreactor	Grounds
19	SAF-WE-SWP-0064	Remove Pump M200-PP Assembly from Volute	PRPS
20	SAF-WE-SWP-0066	Remove Secondary Mixer from Bioreactor	PRPS
21	SAF-WE-SWP-0067	Replace Air Dryer Desiccant	Secondary
22	SAF-WE-SWP-0069	Replace Diaphragm Pump	Administration
23	SAF-WE-SWP-0070	Replace Flushing Water System Filters at WE	Secondary
24	SAF-WE-SWP-0073	Scrape Bar Screen	Headworks
		Mechanical Maintenance	
25	SAF-WE-SWP-0001	Access Wet Well from Outside	PRPS
26	SAF-WE-SWP-0006	Change Hanger Bearing on M100 Pump Shaft	PRPS
27	SAF-WE-SWP-0014	Clean and Adjust Sludge Transfer Pump	Headworks

28	SAF-WE-SWP-0033	Grease M100 Pump	PRPS
29	SAF-WE-SWP-0034	Grease M400 Pump	PRPS
30	SAF-WE-SWP-0035	Grease Pump M200-PP Driveline and Motor Components	PRPS
31	SAF-WE-SWP-0039	Inspect or Change Friction Disks on DAF Skimmer Drives	DAF
32	SAF-WE-SWP-0040	Install Mixers to Bioreactor	Secondary
33	SAF-WE-SWP-0051	Isolate Pump M400-PP	PRPS
34	SAF-WE-SWP-0063	Remove Pump M100-PP Motor with Crane	DAF
35	SAF-WE-SWP-0074	Service and Inspect H110 or H120 Bar Screen	Headworks
36	SAF-WE-SWP-0078	Enter and Washout Primary Clarifier Tank	Primary

WEWPCC SWPs - Archived

S.No.	SWP Title
1	Change Bearings and Belt on Overhead Doors
2	Change Flexible Sleeve Coupling on Pumps
3	Change Oil on Primary Clarifier Sweep Drive and Gearbox
4	Change Pump M400-PP Service Engine Angle Drive Oil
5	Change Pump M400-PP Service Engine Oil
6	Change Recirculating Pump Input Valves on DAF 1 or 2
7	Change Recirculating Pump Output Valves on DAF 1 or 2
8	Inspect and Change Primary Clarifiers Drive Chain
9	Inspect Hose on Metering Pumps
10	Install New Volute for Pump M200-PP
11	Isolate Diaphragm Pump
12	Lubricate and Inspect Upper Sweep Drive
13	Lubricate Bar Screen Conveyor
14	Remove Pump M200-PP Volute
15	Replace Boiler Pump Seal
16	Replace Motor Bearings on RAS Pump Unit
17	Replace RAS Pump
18	Service DAF T121 and T122 AC Compressors
19	Remove Mixers for Service and Repair
20	Service RAS Pump

SAFE WORK PROCEDURE	Procedure Title:
Created date:	Document No.
Created by:	Location/Area:
Last Revised:	Crews:

Winnipeg
Wastewater Services Division
Water and Waste Department

Supervisor and Reviewer Approval	
Name of Supervisor:	**Name of Reviewer:**
Signature of Supervisor:	**Signature of Reviewer:**

Safety Committee Approval	
Name of Management Co-chair:	**Name of Worker Co-chair:**
Signature of Management Co-chair:	**Signature of Worker Co-chair:**

Emergency	Notes
1. Call 911. 2.	• Employers must ensure that workers are trained on, and follow this safe work procedure. • Hold tailgate meeting before starting task. Complete Job Plan where required. • Report any hazards related to this task or recommendations regarding this document to your supervisor. • Common signs/symptoms of MSI may include pain, burning, stiffness, numbness/tingling, and/or loss of movement or strength in a body part. Report any symptoms to your supervisor.

Hazards	Steps								
	1	2	3	4	5	6	7	8	9
•									
•									
•									
•									
•									

Training	Personal Protective Equipment (PPE)	Tools/Supplies
	•	•

Safe Approach	
1.	
• ***If:*** ***NEVER:*** ⊗	
2.	
• ***If:*** •	

NEVER: ⊗	
3.	
• ***If:*** • ***NEVER:*** ⊗	
4.	
• ***If:*** • ***NEVER:*** ⊗	
5.	
• ***If:*** • ***NEVER:*** ⊗	
6.	
• ***If:*** • ***NEVER:*** ⊗	
7.	
• ***If:*** • ***NEVER:*** ⊗	
8.	
• ***If:*** • ***NEVER:*** ⊗	
9.	
• ***If:*** • ***NEVER:*** ⊗	
10.	
• ***If:*** • ***NEVER:*** ⊗	
END	

Reference	Disclaimer
Workplace Safety & Health Act W210 Manitoba Regulation 217/2006 •	• This document is uncontrolled when printed; refer to The Reservoir for the most current version. • Government regulations take precedence; all workers should be familiar with these regulations. • This procedure must be reviewed any time the task, equipment or materials change and at a minimum every three years.

STANDARD OPERATING PROCEDURE	
Document no.: *Leave blank (for OSB only)*	**Title:**
Revision no.:	**Location:**
Prepared date:	Prepared by:
Reviewed date:	Reviewed by:
Approved date:	Approved by:

Wastewater Services Division
Water and Waste Department

1 Purpose

1.1 Provide a brief description on this Standard Operating Procedure.

2 Scope

3 Prerequisites

3.1 Prerequisites

4 Responsibilities

4.1 Personal Qualifications

4.2 Safety

4.3 Equipment and Supplies

5 Definitions and Abbreviations

5.1 Abbreviations

5.2 Definitions

6 Procedure

6.1 Step 1

6.2 Step 2

7 Related Documents

7.1 List any internal and external related documents.

8 Revision History

Revision No.	Date	Description of Changes	Completed by

Lock-Out Tag-Out Procedure (LOTO)

DOCUMENT CONTROL (FOR DOCUMENT MANAGEMENT USE ONLY)	
Document Number:	**Document Title:**
Date Created:	**Procedure Created By:**
Date Last Revised:	**Procedure Revised By:**
Facility Supervisor Signature for Document Approval:	

OPERATIONAL INFORMATION		
Date:	**Person Completing Form (print):**	
Equipment Name:		**Tag ID:**
Drawing / P&ID Number:		**WO Number:**
Equipment Location:		
Personnel to be informed?	**Personnel required to turn off the equipment?**	**Is the person required also to lock out equipment?**

Use the following codes to identify the energy source: FW - Flushing Water; **PW** – Potable Water; **EL** – Electrical; **HW** – Hot Water; **PN** – Pneumatic; **HD** – Hydraulic; **HC** – Hazardous Chemical; **BH** – Bio-Hazardous; **NG –** Natural Gas; **BG** – Bio-Gas

Use the following codes to identify the crew: NEODA – Operations; **NEMM** – Maintenance; **NEEI** – Electrical Instrumentation;

Energy Source	**Electrical Hazard/Risk Category**	**Name, Isolation Point (TAG) and Location**	**Description of how to turn off equipment and remove residual energy**	**Crew**	**Initials**
		Name: Asset ID: Tag ID: Location:			

		Name: Asset ID: Tag ID: Location:			
		Name: Asset ID: Tag ID: Location:			
		Name: Asset ID: Tag ID: Location:			
		Name: Asset ID: Tag ID: Location:			
		Name: Asset ID: Tag ID: Location:			
Additional Comments:					
Describe test to confirm equipment will not start:					
Feedback Comments:					

Signature of Authorized Employee: _____