



**MUNICIPAL STREAMLINED
MERCURY VARIANCE (SMV) APPLICATION**
State Form 52112 (5-05)
Approved by State Board of Accounts, 2005
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Indiana Department of Environmental Management
Office of Water Quality – Mail Code 65-42
NPDES Permits Branch
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

PART ONE: General Information

Name of Facility City of Goshen Wastewater Treatment Plant		
Facility Address 1000 W. Wilden Avenue		
City or Town Goshen		
State IN	ZIP Code 46528	County Elkhart
National Pollutant Discharge Elimination System (NPDES) Permit No.: IN0025755		
Owner or Person in Responsible Charge (i.e., Town Board President/Mayor) Mayor, Jeremy Stutsman		
Title Mayor		
Address 202 S. 5th Street		
City or Town Goshen		
State IN	ZIP Code 46528	
Name of Primary Contact Person Jim Kerezman		
Address 1000 W. Wilden Avenue		
City or Town Goshen		
State IN	ZIP code 46528	Telephone No. 574-534-4003
E-mail Address (if available) jimkerezman@goshencity.com		
NPDES Outfall(s) Affected by Streamlined Mercury Variance Request: Outfall 001		
Receiving Stream(s) Affected by Streamlined Mercury Variance Request: Elkhart River		
Facility Design Flow: 5.0 MGD Dry Weather & 12.5 MDG Wet Weather		
Population Served: 33,722 (2020 Census)		
Number of Significant Industrial Users (as defined in 327 IAC 5-17-23): 7		

SIGNATURE BLOCK

This application must be signed by a person in responsible charge (see 327 IAC 5-2-22) to be valid. This signature attests to the following:
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name Jim Kerezman	Title Superintendent
Signature	Date Signed (month, day, year)

Return the completed SMV application package (Parts I - V) and \$50 application fee (see IC 13-18-20-12(a)(4)) to the mailing address listed above.

PART TWO – POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) INVENTORY/IDENTIFICATION

A. Provide a preliminary inventory of potential uses and sources of mercury in all buildings and departments, as well as a preliminary identification of known mercury-bearing equipment, wastestreams, and mercury storage sites. The following checklist* includes many of the chemicals, equipment, locations, etc. where mercury may be present at your site. For the purpose of satisfying the requirements of this section, you may submit the completed checklist as a preliminary inventory/identification. While the checklist is intended to facilitate the inventory/identification process, it should not be considered as all-inclusive for purposes of establishing a complete inventory. (see 327 IAC 5-3.5-9(a)(1) and 327 IAC 5-3.5-9(a)(2))

LABORATORY EQUIPMENT

<input type="checkbox"/> Manometers	<input type="checkbox"/> Ion exchange cartridges for lab water purification system
<input checked="" type="checkbox"/> Barometers (Non-mercury)	Hanging mercury drop electrodes for polarographic analyzers
<input checked="" type="checkbox"/> Thermometers (1 Certified)	<input type="checkbox"/> Mercury Hallow Cathode lamp for AA analysis

LABORATORY CHEMICALS

<input type="checkbox"/> COD analysis reagent (<i>mercuric sulfate</i>)	<input type="checkbox"/> Mercury or mercurous chloride
<input checked="" type="checkbox"/> TKN and TP analysis digestion reagents	<input type="checkbox"/> Mercury iodide
<input type="checkbox"/> Nessler reagent	<input type="checkbox"/> Mercury nitrate
<input type="checkbox"/> Mercury analytical standards	<input type="checkbox"/> Mercury (II) oxide
<input type="checkbox"/> Gas chromatograph sample interferences (<i>elemental mercury</i>)	<input type="checkbox"/> Mercury (II) sulfate
<input type="checkbox"/> Sodium hypochlorite (<i>Clorox</i>)	<input type="checkbox"/> Merthiolate

BULK CHEMICALS

<input checked="" type="checkbox"/> Phosphorus removal chemicals	<input type="checkbox"/> Chlorine
<input checked="" type="checkbox"/> Dechlorination chemicals	<input checked="" type="checkbox"/> Sodium hypochlorite
<input checked="" type="checkbox"/> Sludge thickening polymers	<input type="checkbox"/> Sulfuric acid
<input type="checkbox"/> Potassium hydroxide	<input type="checkbox"/> Nitric acid
<input type="checkbox"/> Sodium hydroxide	<input checked="" type="checkbox"/> Ferric or ferrous chloride
<input type="checkbox"/> Sodium chloride	<input type="checkbox"/> Pickling liquor (<i>for phosphorus removal</i>)

PROCESS CONTROL AND MEASURING EQUIPMENT

<input type="checkbox"/> Accustats	<input type="checkbox"/> Ring balances
<input type="checkbox"/> Barometers	<input type="checkbox"/> Shunt trips
<input type="checkbox"/> Counterweights	<input type="checkbox"/> Steam flow meters
<input type="checkbox"/> Elemental mercury for refilling mercury-containing equipment	<input type="checkbox"/> Stokes gauges
<input checked="" type="checkbox"/> Flow meters	Switches and relays:
<input checked="" type="checkbox"/> Gas regulators and meters	<input type="checkbox"/> Displacement plunger relays
<input type="checkbox"/> Gyroscopes	<input type="checkbox"/> Mercoid control switches
<input type="checkbox"/> Hydrometers with thermometers	<input type="checkbox"/> Pressure control switches (<i>mounted on bourdon tube or diaphragm</i>)
<input type="checkbox"/> Level and rotation sensors	<input checked="" type="checkbox"/> Relay switches
<input type="checkbox"/> Manometers, pressure gauges and vacuum gauges	<input type="checkbox"/> Mercury wetted relays
<input type="checkbox"/> Mercury-sealed pistons	<input type="checkbox"/> Mercury displacement relays (<i>found in motors</i>)
<input type="checkbox"/> Perimeters	<input checked="" type="checkbox"/> Sump pump, bilge pump and other float controls
<input type="checkbox"/> Pressure-trols	<input checked="" type="checkbox"/> Tilt switches
<input type="checkbox"/> Pyrometers	<input type="checkbox"/> Thermometers (<i>including industrial dial face thermostats with capillary tubes.</i>)
<input type="checkbox"/> Rectifiers	<input type="checkbox"/> Thermostats and thermoregulators
	<input type="checkbox"/> Transmitters

BUILDINGS

<input type="checkbox"/> DC watt-hour meters	Hydronic and warm air controls with tilt switches such as:
<input checked="" type="checkbox"/> Flame sensors (<i>found in the pilot light and burner assembly on gas-fired furnaces, boilers, unit heaters and space heaters</i>)	<input type="checkbox"/> Aquastats
	<input type="checkbox"/> Pressurestats
	<input type="checkbox"/> Firestats
	<input checked="" type="checkbox"/> Fan limit controls
	<input checked="" type="checkbox"/> Pressure/flow controls on air handling units.

* This checklist was borrowed from the Delta Institute.

PART TWO (CONTINUED)

BUILDINGS (continued)

Switches and relays:

- | | |
|---|---|
| <input type="checkbox"/> Fire alarm box switches | <input type="checkbox"/> Mercury displacement relays (<i>found in lighting, resistance heating and motors</i>) |
| <input checked="" type="checkbox"/> Silent light switches | |
| <input type="checkbox"/> Relay switches | <input checked="" type="checkbox"/> Sump pump, bilge pump, flow monitor, float switches, and other float controls |
| <input type="checkbox"/> Mercury wetted relays | |
| <input checked="" type="checkbox"/> Tilt switches | |

Phosphorus removal chemicals:

- Ferric or ferrous chloride
- Pickling liquor

Thermostats

BEARINGS AND SEALS

Trickling filter Pivot Arm Bearings (*mercury bearings/water seals*)

LAMPS

- | | |
|---|--|
| <input type="checkbox"/> Fluorescent | <input type="checkbox"/> Mercury vapor lamps |
| <input type="checkbox"/> High-pressure sodium | <input type="checkbox"/> Metal halide (All lights in all buildings and outside parking lot are LED) |
| <input type="checkbox"/> Mercury arc | <input type="checkbox"/> Ultraviolet disinfection |

BATTERIES

- | | |
|---|---|
| <input type="checkbox"/> Mercury-zinc (<i>button</i>) batteries | <input type="checkbox"/> Mercury alkaline batteries |
| <input type="checkbox"/> Mercury-cadmium batteries | <input type="checkbox"/> Mercury oxide batteries |

PAINT

- Old latex-paint (pre-1990) Marine paint

FIRST AID/MEDICAL

- | | |
|--|--|
| <input type="checkbox"/> Mercurochrome | <input type="checkbox"/> Thermometers |
| <input type="checkbox"/> Sphygmomanometers | <input type="checkbox"/> Thimerosal (<i>contained in eye wash</i>) |

OTHER

- | | |
|--|---|
| <input type="checkbox"/> Old pesticides, fungicides and herbicides | <input checked="" type="checkbox"/> Fleet vehicles may contain ABS, convenience and trunk lighting switches and HID headlamps |
| <input type="checkbox"/> Tree root growth control products | |
| <input checked="" type="checkbox"/> Computer monitors | |

COLLECTION SYSTEM

- | | |
|--|--|
| <input checked="" type="checkbox"/> Lift station equipment | <input checked="" type="checkbox"/> Sewer lines with accumulated mercury |
| <input checked="" type="checkbox"/> Traps with accumulated mercury | <input type="checkbox"/> Other mercury containing equipment |
| <input type="checkbox"/> Sumps with accumulated mercury | <input type="checkbox"/> Mercury-containing chemicals used and/or stored on-site |

MERCURY STORAGE SITES

- Elemental mercury Mercury-containing items collected for disposal

B. Provide a plan and schedule for providing a complete inventory initiated under Section A. above. (*see 327 IAC 5-3.5-9(a)(1)*) The schedule required under this part should be expressed in terms of months from the date of NPDES permit issuance, renewal, or modification that incorporates the approved SMV. It is recommended that the schedule required under this part be developed in conjunction with the other schedules for action required by the SMV application.

A complete inventory should include an estimate of quantities (*i.e., volume of chemicals used annually, or numbers of mercury containing equipment*) for each item identified in Part II.A. Additionally, a complete inventory should include documentation from chemical suppliers and equipment suppliers of the mercury content in your most commonly purchased items. Mercury may not be present in a concentration great enough to appear on an MSDS, yet still contribute to the overall level of mercury in the influent.

PART TWO (CONTINUED)

- C. Provide the results of a preliminary evaluation of possible mercury sources in the facility's influent. The preliminary evaluation must include an initial list identifying all potential sources of mercury in the POTW's influent by name and address. The preliminary evaluation shall take into consideration, at a minimum, the following: *(see 327 IAC 5-3.5-9(b)(1))*
1. Medical facilities, for example, the following:
 - a. Hospitals.
 - b. Clinics.
 - c. Nursing homes.
 - d. Veterinary facilities.
 2. Dental clinics.
 3. Public and private educational laboratories.
 4. General industry and all SIU's.
 5. Significant sources of residential and retail contributions of mercury, for example, the following:
 - a. Heating, ventilation, and air conditioning contractors.
 - b. Automobile and appliance repair.
 - c. Veterinarians.
 - d. Others specific to the community served.
 6. An identification of the responsibilities under P.L.225-2001 *(also known as House Enrolled Act 1901 of the 2001 legislative session)* for the significant industrial users for the POTW. P.L.225-2001 outlines the restrictions on the sale or supply of mercury-added novelties, mercury-added products, and mercury commodities, and on the use or purchase of mercury commodities, compounds, or mercury-added instructional equipment and materials by public and non-public schools. In order to satisfy the requirement of this part, include a written statement that attests to the fact that an identification of the responsibilities under P.L.225-2001 has been undertaken.
- D. Provide a plan and schedule for completion of the evaluation initiated under Section C. above. A complete evaluation should include a list identifying all confirmed sources of mercury in the POTW's influent by name and address. The schedule required under this part should be expressed in terms of months from the date of NPDES permit issuance, renewal, or modification that incorporates the approved SMV. It is recommended that the schedule required under this part be developed in conjunction with the other schedules for action required by the SMV application. *(see 327 IAC 5-3.5-9(b)(1))*

PART THREE - POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) PLANNED ACTIVITIES

- A. Provide a list of planned activities to be conducted to eliminate or minimize the release of mercury to waters of the state. The list of planned activities may consider technical and economic feasibility and must include, at a minimum: *(see 327 IAC 5-3.5-9(a)(3))*
1. A review of purchasing policies and procedures.
 2. Necessary training and awareness for facility staff including an education program.
 3. An education program for the public within the service area of the facility.
 4. Evaluation of alternatives to the use of any mercury-containing equipment or materials.
 5. Other specific activities designed to reduce or eliminate mercury loadings.
 6. An identification of the facility's responsibilities under P.L.225-2001 *(also known as House Enrolled Act 1901 of the 2001 legislative session)*. Under P.L.225-2001, a municipality may, in cooperation and with the support of IDEM, implement education programs for the public regarding the reuse and recycling of, or independently implement collection programs for, mercury commodities and mercury-added products. In order to satisfy the requirement of this part, include a written statement that attests to the fact that an identification of the responsibilities under P.L.225-2001 has been undertaken.
- B. For each planned activity identified under section A. above, include the following: *(see 327 IAC 5-3.5-9(a)(4))*
1. The goal to be accomplished.
 2. A measure of performance.

PART THREE (CONTINUED)

3. A schedule for action. The schedule required under this part should be expressed in terms of months from the date of NPDES permit issuance, renewal, or modification that incorporates the approved SMV. It is recommended that the schedule required under this part be developed in conjunction with the other schedules for action required by the SMV application.
- C. Provide a list of planned activities designed to reduce or eliminate mercury loadings from each sector identified in Part II.C. of the application, including the goal to be accomplished, a measure of performance, and a schedule for action. *(see 327 IAC 5-3.5-9(b)(2))* The schedule required under this part should be expressed in terms of months from the date of NPDES permit issuance, renewal, or modification that incorporates the approved SMV. It is recommended that the schedule required under this part be developed in conjunction with the other schedules for action required by the SMV application. An example of planned activities, goals, measures of performance and schedules for action for the sectors identified in Part II.C. is provided in Attachment A.
- D. Provide an identification of the resources and staff necessary to implement the Pollutant Minimization Program Plan (PMPP). *(see 327 IAC 5-3.5-9(a)(6))* The identification should indicate the source and amount of funding available to implement the PMPP, as well as the number and position of employees that will be devoted to PMPP implementation.

PART FOUR – MERCURY MONITORING DATA

Provide all available influent and effluent mercury data for the two-year period preceding submittal of this application. Additionally, provide any information on mercury in biosolids for the two-year period preceding submittal of this application, if available. The data may be supplied on a separate form, but must include results for each individual sample *(including unit of measurement and U.S. EPA method)*, the date the sample was taken, and the analytical laboratory where the analysis was performed. *(see 327 IAC 5-3.5-9(a)(5))*

Influent

Date (month, day, year)	Result	ng/l	U.S. EPA Method	Analytical Laboratory
12/13/2018	57.9	ng/l	1631E	Pace Analytical
02/14/2019	35.0	ng/l	1631E	Pace Analytical
04/11/2019	59.5	ng/l	1631E	Pace Analytical
06/07/2019	12.0	ng/l	1631E	Pace Analytical
08/29/2019	46.5	ng/l	1631E	Pace Analytical
10/18/2019	4.7	ng/l	1631E	Pace Analytical
12/11/2019	25.0	ng/l	1631E	Pace Analytical
02/20/2020	24.4	ng/l	1631E	Pace Analytical
04/14/2020	20.6	ng/l	1631E	Pace Analytical
06/11/2020	23.7	ng/l	1631E	Pace Analytical
08/12/2020	1150.0	ng/l	1631E	Pace Analytical
10/15/2020	31.9	ng/l	1631E	Pace Analytical

Effluent

Date (month, day, year)	Result	ng/l	U.S. EPA Method	Analytical Laboratory
12/13/2018	1.77	ng/l	1631E	Pace Analytical
02/14/2019	1.20	ng/l	1631E	Pace Analytical
04/11/2019	0.75	ng/l	1631E	Pace Analytical
06/07/2019	0.56	ng/l	1631E	Pace Analytical
08/29/2019	0.75	ng/l	1631E	Pace Analytical
10/18/2019	1.30	ng/l	1631E	Pace Analytical
12/11/2019	0.99	ng/l	1631E	Pace Analytical
02/20/2020	0.95	ng/l	1631E	Pace Analytical
04/14/2020	0.95	ng/l	1631E	Pace Analytical
06/11/2020	2.64	ng/l	1631E	Pace Analytical
08/12/2020	1.51	ng/l	1631E	Pace Analytical
10/15/2020	1.94	ng/l	1631E	Pace Analytical

PART FOUR (CONTINUED)

Biosolids				
Date (month, day, year)	Result	Unit	U.S. EPA Method	Analytical Laboratory
12/11/2017	<0.04	mg/kg	7471 A	Brookside Laboratories Inc
03/12/2018	<0.04	mg/kg	7471 A	Brookside Laboratories Inc
07/24/2018	<0.04	mg/kg	7471 A	Brookside Laboratories Inc
09/10/2018	<0.04	mg/kg	7471 A	Brookside Laboratories Inc
12/03/2018	<0.04	mg/kg	7471 A	Brookside Laboratories Inc
03/05/2019	<0.04	mg/kg	7471 A	Brookside Laboratories Inc
06/10/2019	<0.04	mg/kg	7471 A	Brookside Laboratories Inc
09/24/2019	<0.04	mg/kg	7471 A	Brookside Laboratories Inc
12/04/2019	<0.04	mg/kg	7471 A	Brookside Laboratories Inc
03/16/2020	<0.41	mg/kg	7471 A	Brookside Laboratories Inc
06/16/2020	<0.60	mg/kg	7471 A	Brookside Laboratories Inc
09/14/2020	<1.10	mg/kg	7471 A	Brookside Laboratories Inc

PART FIVE – POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) ADDITIONAL REQUIREMENTS

- a. **Proof of Public Notice Activities:** Provide proof of the public notice activities identified below: (see 327 IAC 5-3.5-9(c)) For the notice of availability required under Section A.1. provide a copy of the notice as it appears in the newspaper. For the posting requirements under Section A.2. attest to that fact that the information was posted as required in a written statement.
1. Publish notice of the availability of the draft pollutant minimization program plan (PMPP) in a daily or weekly newspaper of general circulation throughout the area affected by the discharge.

 2. Post a copy of the information required by this section at the following:
 - a. Principal office of the municipality or political subdivision affected by the facility or discharge.
 - b. The United States post office.
 - c. If one is available, the library serving those premises.

 3. All notices published under this section shall contain the following information: (see 327 IAC 5-3.5-9(d))
 - a. The name and address of the applicant that prepared the PMPP.
 - b. A general description of the elements of the PMPP.
 - c. A brief description of the activities or operations that result in the discharge for which an SMV is being requested.
 - d. A brief description of the purpose of this notice and the comment procedures.
 - e. The name of a contact person, a mailing address, an Internet address, if available, and a telephone number where interested persons may obtain additional information and a copy of the PMPP.

 4. The applicant shall do the following: (see 327 IAC 5-3.5-9(e))
 - a. Provide a minimum comment period of thirty (30) days.
 - b. Include a copy of the comments received and the applicant's responses to those comments in the SMV application submitted to the department.

Annual Reports: Provide a schedule for the submission of the annual reports required under 327 IAC 5-3.5-9(a)(8). Generally, the annual reports should be submitted each year on the anniversary of the effective date of the NPDES permit that incorporates the approved SMV. A proposed schedule with an alternative submittal date is subject to IDEM's approval. The annual reports shall include a description of the facility's progress toward fulfilling each PMPP requirement, mercury monitoring results, and steps taken to implement each planned activity developed under the PMPP.

PART TWO A

Complete Evaluation	Plan	Schedule
<p>Laboratory 1 – Mercury Certified Thermometer No Barometers on site</p> <p>Bulk Chemicals Sodium Hypochlorite Sodium Bisulfite Ferric Chloride</p>	<p>No replacement at this time</p> <p>Mercury Reduced/Free requested during bidding process</p> <p>Researching alternatives for Ferric Chloride</p>	<p>None</p> <p>Every two years</p>
<p>Process Controls</p> <ol style="list-style-type: none"> Flow Meters Gas regulators and meters Mercoid control switches and tilt switches Relay switches Float switches <p>Buildings –</p> <ol style="list-style-type: none"> Flame Sensors Aqua Stats Limit Switches Flow Controls Light Switches Relay Switches <p>Lamps</p> <ol style="list-style-type: none"> Fluorescent Lamps High Pressure Sodium-Necessary for explosion proof settings. 	<p>All replaced with non-mercury controls</p> <p>All of the following have been researched and found to be non-mercury bearing:</p> <p>Over half of the WWTPs fluorescent lamps and fixtures were replaced with LED lighting in 2014-2015. Buildings include the office administration, laboratory, maintenance offices and lounge. Replaced the remaining fluorescent lamps and fixtures with LED lighting which was completed in early 2020.</p> <p>Researching alternatives</p> <p>The City's IT department recycles all computers and electronic equipment.</p> <p>All vehicle maintenance is performed by the City's Central Garage. All fluids are recycled. Vehicles taken out of service are sold at auctions or properly disposed.</p> <p>Sewer lines are cleaned by the Water/Sewer Utility. Private lines are cleaned by the owner.</p>	<p>Completed February 2011</p> <p>None</p> <p>ALL lights and fixtures at the WWTP including all buildings, driveway lights and tank lighting are LED. Completed in 2020.</p> <p>Laboratory has a permanent eyewash connected to city water.</p> <p>Ongoing</p> <p>Ongoing</p>
<p>First Aid/Medical Thimerosal – Found in eye wash solutions.</p> <p>Other</p> <ol style="list-style-type: none"> Computer monitors and equipment Fleet vehicles <p>Collection System Sewer lines</p>	<p>Sewer lines are cleaned by the Water/Sewer Utility. Private lines are cleaned by the owner.</p>	<p>This process is ongoing with 20 – 25 percent of the sewer mains are televised and cleaned annually.</p>

PART TWO B

Complete Inventory Plan

At this time, the City of Goshen WWTP has no known mercury bearing products onsite except the following.

- a. Sodium Hypochlorite – May contain low levels of mercury.
- b. Sodium Bisulfite – May contain low levels of mercury.
- c. Ferric Chloride – May contain low levels of mercury.
- d. 1 – Certified Thermometer for laboratory use.

The following actions are currently in place or scheduled.

1. Suppliers are asked to provide low level or mercury free products during the bidding process every two years.
2. An alternative product will be sought. (ie. Ferric Chloride)
3. If no other product is available, the WWTP will research the need for the product and eliminate it if possible.
4. The product will be removed from the facility as soon as possible.
5. Waste materials or products that are no longer needed are disposed of in accordance with proper disposal procedures, including but not limited to returning them to the supplier or contracting with licensed disposal facilities.
6. The WWTP participates in “Beautify Goshen” week, which is scheduled for the first week in May of each year.
7. The fluorescent lamps and fixtures replacement program was completed in 2020.

PART THREE A & B

Planned Activity	Goal	Measure of Performance	Schedule for Action
Review of purchasing policies and procedures: Chemical purchases including: <ul style="list-style-type: none"> • Sodium Hypochlorite • Sodium Bisulfite • Ferric Chloride Staff training	Reduce mercury in effluent Education & awareness	Participation/Attendance	2 year cycle with chemical bids Ongoing. Part of annual on-line safety program/brochures.
Public education program	Education & awareness	Articles posted in City Communicator, Maple City Rag and this topic is also discussed during plant tours.	This is ongoing with other articles such as fats, oils and grease, rags and other pretreatment issues.
Other activities Elimination of mercury switches, equipment, fluorescent lamps and fixtures.	Eliminate known mercury at the wwtp and lift stations	Participation	WWTP - Completed 2020 Mercury switches were removed from all lift stations prior to 2015. Lift station lighting replacement completed 2020.
Monitoring sewer collection system	Try to locate other sources of mercury from industrial parks, businesses and residential areas.	Participation Mercury sampling and testing	Ongoing

PART THREE C

Sector	Planned Activity	Goal	Measure of Performance	Schedule for Action
Medical facilities, including: *Hospitals. *Clinics. *Nursing homes. *Veterinary facilities.	Sample and test hospital lift station annually The City developed and passed a Mercury Reduction Ordinance 494 on March 12, 2018. Site visits (if applicable – Covid related)	Compliance Compliance Promote BMP	Mercury levels/Compliance Participation/Testing	Ongoing Ongoing Ongoing
Dental clinics	The City developed and passed a Mercury Ordinance 494 on March 12, 2018. One-Time Compliance Report for Dental Dischargers Mercury testing Survey(s) Site visits (if applicable – Covid related) Amalgam Separators Mail Survey(s) On-site visits (if applicable – Covid related) News articles (city’s website, communicator, Maple City Rag) Mail Survey(s) On-site visits (if applicable – Covid related) Mercury testing	Compliance Promote BMP Evaluation of discharge Participation Compliance Compliance Education & awareness Promote BMP Education & awareness Education & awareness Promote BMP Evaluation of discharge	Inspections Compliance Mercury levels/Compliance	12 months from SMV approval Dental Clinics are in compliance Ongoing 5 year cycle with all other industries and immediately with new industrial/commercial customers Annually All Dental Clinics have Amalgam Separators installed 9 months from SMV approval 12 months from SMV approval Ongoing Every SIU/CIU permit renewals Annually- (SIUs), General Industries - Ongoing Ongoing
Public and private educational laboratories	Mail Survey(s) On-site visits (if applicable – Covid related) News articles (city’s website, communicator, Maple City Rag) Mail Survey(s) On-site visits (if applicable – Covid related) Mercury testing	Education & awareness Promote BMP Education & awareness Education & awareness Promote BMP Evaluation of discharge	Mercury levels/Compliance Cleaning records	12 months from SMV approval Ongoing
General Industry and all SIU’s	Plant tours if applicable On-site visits (if applicable – Covid related) Articles (city’s website, communicator, Maple City Rag) Survey(s)	Education & awareness Promote BMP Education & awareness Participation	Mercury levels/Compliance	Ongoing 24 months from SMV approval 9 months from SMV approval 12 months from SMV approval
Significant sources of residential and retail contributions of mercury, for example, the following: *Heating, ventilation, and air conditioning contractors. *Automobile and appliance repair. *Veterinarians. *Others specific to the community served.	Plant tours if applicable On-site visits (if applicable – Covid related) Articles (city’s website, communicator, Maple City Rag) Survey(s)	Education & awareness Promote BMP Education & awareness Participation	Mercury levels/Compliance	Ongoing 24 months from SMV approval 9 months from SMV approval 12 months from SMV approval



Jim Kerezman, Superintendent
WASTEWATER UTILITY, CITY OF GOSHEN
1000 West Wilden Avenue • Goshen, IN 46528-2532

Phone (574) 534-4003 • Fax (574) 534-4350 • TDD (574) 534-3185
wastewater@goshencity.com • www.goshenindiana.org

RE: SUBMISSION OF STREAMLINE MERCURY VARIANCE APPLICATION TO THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

The City of Goshen Wastewater Treatment Plant treats an average of 3.0 million gallons of waste water every day from residential, commercial and industrial customers. The final effluent discharges to the Elkhart River which continues to flow to Lake Michigan. This treated stream of water must meet strict requirements imposed by the US Environmental Protection Agency (USEPA) and Indiana Department of Environmental Management (IDEM).

One of these restrictions imposed on the City of Goshen is Mercury. Atmospheric conditions such as dust, rain, snow, etc. are a result of some sources of mercury in our waterways, but treated discharge from wastewater treatment plants are often sources as well. A typical source of mercury in the wastewater collection system comes from dental clinics, hospitals, auto repair shops, residential areas, industries, medical facilities and laboratories.

Although the City of Goshen removes almost 98% of the mercury that it receives, it is not sufficient to meet IDEM's water quality standards. The City of Goshen's National Pollution Discharge Elimination Systems permit (NPDES) has a limit so stringent it cannot be met without further measures. IDEM is allowing WWTP's to apply for mercury variances with schedules of compliance to help reduce the amount of mercury in the influent/effluent streams of wastewater treatment plants.

Reducing the amount of mercury entering the WWTP will help reduce the amount of mercury in its final effluent being discharged to the Elkhart River. The City of Goshen is reapplying for a Streamline Mercury Variance application to IDEM to help the WWTP meet these stringent limits.

In order to provide an opportunity for citizens to express concerns about the Streamline Mercury Variance, the Mercury Pollutant Minimization Program Plan is being made available for review and comment. All formal questions and comments about this plan can be directed to Jim Kerezman by mail to:

PMPP
Jim Kerezman
1000 W. Wilden Avenue
Goshen, IN 46528

Or email – Please include in the subject line: PMPP. Email to wastewater@goshencity.com

POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) INVENTORY/IDENTIFICATION

Inventory of Potential Sources of Mercury

The Goshen Wastewater Treatment Plant (WWTP) has conducted a complete inventory and assessment of the potential sources of mercury within direct control of the WWTP. The inventory was conducted in 2010 and continues to be updated with new products.

No known mercury bearing equipment currently exists at the WWTP. All lighting and fixtures including all driveway and walkway lights are now LEDs. This project was completed in early 2020. All major chemical suppliers are asked to provide quotes for Non-mercury or reduced mercury chemicals during the bidding process. Laboratory results are obtained if applicable.

All Dental Clinics are currently in compliance with the EPA's "One Time Compliance Report" and they all installed Amalgam Mercury Separators.

Evaluation of Potential Dischargers

The City of Goshen has identified facilities within the sewer collection area that are potential sources of mercury through sampling. Most dental facilities received letters about the importance of proper mercury disposal along with a copy of Best Management Practices for Amalgam Mercury Waste. Sampling will continue to help verify potential areas and businesses that may discharge mercury to the sewer collection system.

Evaluation Timeline for Future Potential Dischargers

As new industries move into the city limits, the pretreatment group will contact the business and conduct an inspection within the first three months of operation. The inspection, among other things, will include the identification of potential mercury bearing sources. The business may also receive educational materials if the possibility of mercury exists to help minimize the release of mercury into the sewer collection system.

POLLUTANT MINIMIZATION PROGRAM (PMPP) PLANNED ACTIVITIES

The City of Goshen Wastewater Treatment Plant has developed a plan to educate the public and local businesses and industries of the sources of mercury. These activities have been developed in accordance with 327 IAC 5-3.5-9(b)(2). A complete description of these activities, goals, measures of performance and schedules are included.

Goshen Wastewater Treatment Plant

What is the problem with Mercury?

- Mercury has been found in vital organs and tissues, such as the liver, brain, and heart muscle. Major symptoms of mercury toxicity include emotional instability, tremors, gingivitis, and kidney failure. Recent studies have found that substantial amounts of mercury vapor are released from dental amalgam after chewing gum for just ten minutes.
- Mercury has been found in freshwater fish with levels high enough to require consumption advisories.

Where does mercury come from that enters a wastewater treatment plant?

- Mercury found in wastewater treatment plants (WWTP) influent typically comes from dental facilities and residential waste. Dental facilities waste-stream may contain significant amounts of mercury which is found in amalgam. Dental facilities with properly installed and maintained amalgam separators can remove up to 98-99% of mercury in their discharge.
- Mercury found in residential waste-streams include: human waste (ingested mercury from fish and other sources pass through the body), and broken old household thermometers.
- Other sources of mercury come from auto repair shops, medical facilities, heating and cooling, industries and laboratories.

Why can't wastewater treatment plants remove mercury?

- The City of Goshen's Wastewater Treatment Plant removes about 98% of the mercury entering the facility. However, even at these removal percentages, the treatment process cannot remove mercury to the levels of 1.3 parts per trillion required by the US Environmental Protection Agency (EPA). Removing mercury to this level would require millions of dollars in wastewater treatment plant upgrades. It is more cost effective to remove mercury at the source with Amalgam Separators and Best Management Practices (BMPs).

What is being done to reduce mercury entering the sewer collection system?

- WWTPs are required to meet stringent limits for mercury in the final effluent. If these limits cannot be met, they are required to implement a Pollution Minimization Program Plan (PMPP) to help educate the public, businesses and industries about mercury and how they can help reduce the amount of mercury they discharge to the treatment plant.
- The proposed mercury variance includes the steps necessary to help reduce the amount of mercury being discharged to the sewer collection system. Steps include:
 - Completing internal inventory of mercury-bearing equipment and chemicals.
 - Develop policies and programs for mercury management.
 - Continuing with mercury monitoring of the sewer collection system, businesses and industries to characterize mercury discharges.
 - Public education

How much mercury are we talking about?

- The mercury found in the treatment plants effluent is too small for most to imagine.
 - Imagine this: The State of Indiana equals 1 trillion square feet (1,000,000,000,000). If you pickup one and a half twelve inch square tiles, that is more than the daily maximum of 1.3 parts per trillion which is proposed in our National Pollution Discharge Elimination System Permit (NPDES).
 - An Olympic sized swimming pool holds 660,430 gallons of water or 59.6 billion drops of water. 1 part per trillion is equivalent to 1 drop in 16.5 Olympic sized swimming pools.

What can I do to help?

- Properly dispose of household items that may contain mercury. Some items that may contain mercury include: old thermostats, thermometers, irons or space heaters designed to shut off if tipped over, sump pump floats, ballasts, fluorescent lamps just to name a few.

Part Two

Section A&B: Inventory of Potential Sources of Mercury

The Goshen Wastewater Utility conducted an inventory assessment of the potential sources of mercury within the direct control of the WWTP. Since 2008, the staff at the WWTP identified all mercury bearing equipment and budgets the replacements of each piece. As of early 2020, the wastewater utility replaced all fluorescent lights and fixtures with LED lighting in all buildings, driveway lights, and walkway lighting. All mercury tilt and Mercoid switches were replaced and all mercury was disposed of in 2011.

In addition, all major chemical suppliers for Ferric Chloride, Sodium Hypochlorite and Sodium Bisulfite are asked to supply documentation for non-mercury or low mercury during the bidding process. Any mercury bearing chemicals will be evaluated and if possible, an alternate chemical will be sought after.

Section C: Evaluation of Potential Dischargers

The City of Goshen's Wastewater Utility continues to sample the sewer collection system for potential sources of mercury. Samples collected have mainly identified the sewers where dental clinics are practicing, hospital lift station, industrial parks and the largest residential area in the city.

The wastewater utility sent letters to dental clinics along with a copy of Amalgam Mercury Best Management Practices and survey's. On March 12, 2018, Ordinance 4941 was passed by the City Council. Currently, all dental clinics have complied with the "One Time Compliance Report" and they all have installed amalgam separators.

C.6.

This section is not applicable to the City of Goshen since the WWTP does not sell or supply novelties, products, commodities, or equipment and materials and therefore would not apply to the mercury content of these materials.

Section D: Evaluation Timeline for Future Potential Dischargers

As new industries or businesses that may potentially discharge mercury into the sewer collection system, the pretreatment group will make contact with the business and conduct an inspection within the first three (3) months of operation. Samples may be grabbed for verification. The business will also receive educational materials on the minimization of mercury into the sewer collection system. In addition to identifying new potential sources of mercury dischargers, further inspections of previously identified mercury dischargers will continue.

Part Three

Section A: Planned Activities

1. Planned Activities

During the chemical bidding process, the City asks for quotes for non-mercury or low level mercury for the following products:

- a. Sodium Hypochlorite
- b. Sodium Bisulfite
- c. Ferric Chloride
- d. The WWTP has reduced the amount of mercury at the wastewater treatment plant by eliminating all mercury switches, tilt switches, and cleaned house of old paint and chemicals stored on site.
- e. All fluorescent and incandescent lamps and fixtures were replaced with LED lighting in 2020.

2. Training and Awareness for facility staff.

- a. Staff awareness of potential mercury in products purchased.
- b. Mercury safety training is part of our on-line annual safety training. Awareness brochures and attendance sheet(s).

3. Education program for the public

- a. Articles may be posted on the City's website, Maple City Rag and in the Communicator as well as other pretreatment related issues.
- b. Mercury is discussed along with fats, rags, oil and grease during plant tours.

4. Evaluation of alternatives to the use of Mercury containing equipment or materials

- a. In conjunction with Item #1 above.
- b. GOAL – Mercury reduction.
- c. Currently no known mercury-bearing equipment exists at the WWTP or Lift Stations.
- d. MSDS are reviewed.

5. Other specific activities designed to reduce or eliminate mercury loadings

- a. March 2008 – The City of Goshen WWTP ceased the acceptance of septage waste and trucked wastewater.
- b. Physical inspections of industrial facilities are ongoing.
- c. 2018 - Developed a City ordinance to require all known mercury dischargers to install separators and properly maintain the units. Mercury testing of these facilities will be ongoing to ensure compliance.

6. Identification of the facilities responsibilities....

- a. Residential customer in Elkhart County are encouraged to dispose of any mercury bearing materials at the Elkhart County Household Hazardous Waste collection site, that is setup the first Saturday of every month at the Elkhart County Jail off of County Road 7.
- b. The City of Goshen dedicates the first week in May as "Beautify Goshen Week" and collects household materials such as acrylic paints, tires, batteries, refrigerants, electronic equipment etc.
- c. Public education on reducing mercury and other contaminants in the waste stream is done during plant tours.

Section D: Resources & Staffing for Implementation

The Wastewater Treatment Utility is wholly funded by sewer rates and charges by sanitary users within the City of Goshen. Rates and charges are evaluated annually by the utility's financial consultant, and adjustments are recommended to the City for present and future funding. It is unknown what the true costs are to implement the PMPP. Budgets are adjusted to cover a portion of these costs each year through the pretreatment program.

Implementation of the controls and activities listed herein will be completed by existing positions funded through the wastewater utility.

- Wastewater Superintendent (1)
- Environmental Compliance Administrator (1)
- Maintenance personnel if needed
- Items listed in Section A-6

PART TWO (B)

PMPP INVENTORY/IDENTIFICATION:

The following items have been identified in Part Two, Section A as potential sources of Mercury. A complete inventory will be completed and submitted within 9 months of the effective date of the NPDES Permit renewal.

1. LABORATORY EQUIPMENT AND CHEMICALS:
 - a. Barometers – None
 - b. Thermometers – One with certified mercury thermometer.
 - c. TP analysis digestion reagents – Recycled. We will seek mercury-free alternatives.
2. BULK CHEMICALS:
 - a. Sodium Bisulfite
 - b. Thickening polymers
 - c. Sodium Hypochlorite Ferric chloride
3. PROCESS CONTROL AND MEASURING EQUIPMENT:
 - a. Flow meters
 - b. Gas regulators and meters
 - c. Mercoid control switches – 39 at wwtp. All were eliminated by end of 2010. Final disposal was in February 2011.
 - d. Relay switches – Non-Mercury
 - e. Float controls – Non-Mercury
 - f. No known Mercury-bearing process control or measuring equipment currently exists at the WWTP.
 - g. Tilt switches – All were eliminated by end of 2010.
4. BUILDINGS: All of the following have been researched and found to be non-mercury bearing:
 - a. Flame sensors
 - b. Aqua stats
 - c. Fan limit controls
 - d. Pressure/flow controls on air handling units.
 - e. Silent light switches
 - f. Relay switches
5. LAMPS:
 - a. All lighting and fixtures are now LEDs. Our lighting replacement program completed in early 2020.
 - b. High-pressure sodium – These were the last to be replaced because of cost. Completed in early 2020.
6. FIRST AID/MEDICAL:
 - a. Thimerosal (All eye wash units are connected to city water)
7. OTHER:
 - a. Computer monitors – The City's IT department recycles all computers, monitors and keyboards.

- b. Fleet vehicles – All vehicle maintenance is performed by the City's Central Garage and all possible care is taken to not allow mercury bearing waste into the sewer system. Vehicles taken out of service are sold at public auction or properly recycled.

8. COLLECTION SYSTEM:

- a. Sewer lines with accumulated mercury – Municipal owned to be cleaned by Utility personnel. Privately owned to be cleaned by owner. Anticipated completion date: Sewer cleaning is ongoing along with televising all sewers.

COMPLETE INVENTORY PLAN

In order to compile the complete inventory of products potentially containing Mercury, The City of Goshen WWTP has commenced contacting suppliers for information on the Mercury content of all products purchased. At the same time, suppliers of alternative products, if available, will be asked for the same information. Once a Mercury bearing product is identified, the following steps are taken:

1. An alternative product will be sought.
2. If no alternative product is available, the WWTP will research the need for the product and eliminate it if possible.
3. The product will be removed from the facility as soon as possible.
4. Waste materials or products that are no longer needed will be disposed of in accordance with proper disposal procedures, including but not limited to returning them to the supplier and contracting with licensed disposal facilities.

PART TWO (C)

PRELIMINARY EVALUATION OF POSSIBLE MERCURY SOURCES IN THE CITY OF GOSHEN WWTP INFLUENT.

1. Medical Facilities:
 - a. Hospitals
 - b. Clinics
 - c. Nursing Homes
 - d. Veterinary Facilities
2. Dental Clinics – 15 facilities. Dental Clinics were tested for Mercury and all have been identified as a contributing source. A Mercury Ordinance was adopted and all dental clinics are in compliance with the “One Time Compliance Report” and all dental facilities installed amalgam separators by the end of 2018.
3. Public and Private Educational Laboratories:
 - a. College
 - b. High School
 - c. Middle School

Public education on mercury and other pretreatment issues such as fats, rags, oil and grease are conducted during plant tours. Pretreatment issue articles are posted in the City Communicator periodically.

Staff education is part of our safety program.

4. General Industry and all SIU's – 7 SIUs. No known Mercury users in the industrial sector. SIU's are not a source of Mercury at this time.
5. Significant sources of residential and retail contributions of Mercury:
 - a. Heating, ventilation and air conditioning contractors
 - b. Automobile and appliance repair
 - c. Veterinarians
 - d. Other – Significant retail areas have been sampled for Mercury at various times. Residential areas are sampled quarterly for background data for Local Limit Review.
6. Identification of responsibilities for the SIUs – This shall be done during the annual audit and inspection of each SIU.

PART TWO (D)

The results of the complete evaluation of the potential sources of Mercury listed in Part Two (C)

PART THREE

PMPP Planned Activities

1. Review of purchasing policies and procedures – Superintendent and Maintenance Manager.
 - a. Ask if any mercury-bearing materials are in products purchased.
 - b. Request MSDS – train staff to be aware of potential mercury in products purchased.
 - c. GOAL - Replace mercury-bearing products with non-mercury-bearing products if possible.
 - d. MEASURE OF PERFORMANCE – lower concentration of mercury in WWTP final effluent.
2. Training and Awareness for facility staff – Environmental Compliance Administrator.
 - a. Mercury awareness is provided through on-line annual safety training.
 - b. Write articles for internal newsletter (Communicator).
 - c. GOAL – Education/awareness
 - d. MEASURE OF PERFORMANCE - Participation
3. Education program for the public – Environmental Compliance Administrator.
 - a. Education during plant tours
 - b. Article for City Communicator

- c. GOAL – Education/awareness
- d. MEASURE OF PERFORMANCE - Participation
- 4. Evaluation of alternatives to the use of Mercury-containing equipment or materials – WWTP Superintendent and Environmental Compliance Administrator.
 - a. In conjunction with Item #1 above.
 - b. GOAL – Mercury reduction
 - c. MEASURE OF PERFORMANCE – Lower concentration of mercury in plant influent/effluent.

PART FOUR

Mercury Monitoring Data – Attached to this application.

PART FIVE

PMPP Additional Requirements

- 1. Proof of Public Notice activities – Public Notice and all associated documents are attached to this application.
- 2. Annual Reports – Annual reports shall commence on the anniversary date of the effective date of the City of Goshen WWTP NPDES Permit that incorporates the approved SMV.

Additional Attachments

- 3. Dental – One-Time Compliance Reports.
- 4. Mercury Reduction Ordinance