Rochester Water Reclamation Plant

2019 Facilities Plan

Technical Memorandum 13: Industrial Discharge Wasteloads and Practices

TM 13 of 13 | J4325

LOWER ENERGY // CLEAN DESIGN
DECREASED MAINTENANCE // INNOVATIVE PROCESSES

Brown AND Caldwell

Technical Memorandum

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Subject: Industrial Discharge Wasteloads and Practices

Date: September 7, 2018

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Abbreviations

ABC	Aeration Basin Complex
AMPI	Associated Milk Producers, Inc.
ATP	Adenosine Triphosphate
BC	Brown and Caldwell
BOD	Biochemical Oxygen Demand
CBOD	Carbonaceous Biochemical Oxygen Demand
$CBOD_5$	Five Day Carbonaceous Biochemical Oxygen Demand
CIP	Clean in Place
COD	Chemical Oxygen Demand
COP	Clean Out of Place
CO_2	Carbon Dioxide
DAF	dissolved air flotation
FSMA	Food Safety Management Act
gpm	gallons per minute
HPOAS	high purity oxygen activated sludge
Lbs	pounds
lb/d	Pounds Per Day
lbs/hr	pounds per hour
Mg/l	Milligrams per liter
mgd	Million Gallons per Day
mm	millimeters
NA	Not Applicable
NH_3-N	Ammonia
NO_x-N	nitrite plus nitrate as nitrogen
SIC Code	Standard Industrial Classification Code
SKU	stock keeping unit
TKN	Total Kjeldahl Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
UF	Ultrafiltration
WRP	Water Reclamation plant

Executive Summary

1.1 Background

In October 2017, Brown and Caldwell (BC) and the Rochester Water Reclamation Plant (WRP) Pretreatment Coordinator met with the following six largest industrial wastewater dischargers in the City of Rochester:

1. Associated Milk Producers, Inc. (AMPI)
2. Kemp's LLC - North (Ice Cream Production)
3. Kemp's LLC – South (Milk Processing)
4. Pace Dairy Foods Company
5. Kerry Ingredients (Kerry Bioscience)
6. Seneca Foods Corporation
7. The purpose of these meetings was as follows:
8. Understand current processes, operating practices and major waste streams.
9. Identify current and projected waste loads.
10. Identify opportunities for intercepting high strength wastes for direct transport to the Rochester WRP.
11. Identify pretreatment opportunities or other measures that could be mutually beneficial to the industries and the Rochester WRP.

1.2 Recommendations

1.2.1 AMPI

- AMPI made tremendous progress in reducing effluent Carbonaceous Biochemical Oxygen Demand (CBOD). They should be approached to determine if they still estimate that they could need a 60 percent growth in permitted monthly average flow over the next five years. It is likely that the flow increase will be much less than this value since flow within a dairy plant is largely driven by product changeovers not production volumes.
- The effluent sampling point should be moved to the single combined discharge line from the AMPI facility to the City sewer. This will result in a collection of a more representative sample.
- If the City is experiencing troublesome collection of debris (such as ear plugs, hair nets, and bottle caps) in downstream lift stations, AMPI could be asked to install a 1/8th-inch screen to remove such debris. This is standard practice for dairy plants that have their own onsite treatment systems.
- AMPI should consider the feasibility and economic viability of directing first flush rinses from other equipment (pasteurizers, fillers, blending tanks, and interconnecting piping) to the sludge tanks.

1.2.2 Kemp's LLC - North

- A seal should be placed on the bypass valve that allows Kemp's North to direct wastewater directly from sump to City sewer. An evaluation needs to be conducted to

identify any other City Sewer tie-ins to make sure that these are sealed closed excluding the discharge which is monitored for flow and strength by the City.

- Kemp's North should identify an alternative discharge location for the high strength wastes. When it fails to meet livestock feed requirements, it should remain out of the sewer and be discharged instead to an alternative location. The alternative location may require removal of nuts from waste prior to disposal.
- If the City is experiencing troublesome collection of debris (such as ear plugs, hair nets, and bottle caps) in downstream lift stations, Kemp's North could be asked to install a 1/8th - inch screen to remove such debris. This is standard practice for dairy plants that have their own onsite treatment systems.
- Kemp's North should consider the feasibility and economic viability of directing first flush rinses from other equipment (pasteurizers, fillers, blending tanks, and interconnecting piping) to the high strength waste tank even if it required installation of another tank.

1.2.3 Kemp's LLC – South

- If the City is experiencing troublesome collection of debris (such as ear plugs, hair nets, and bottle caps) in downstream lift stations, Kemp's South could be asked to install a 1/8th-inch screen to remove such debris. This is standard practice for dairy plants that have their own onsite treatment systems.
- Kemp's South should consider the feasibility and economic viability of directing first flush rinses from pasteurizers, fillers, blending tanks, and interconnecting piping to a newly installed high strength wastes tank. Due to the large quantity of stock keeping units (SKUs), greater than 50 percent of the discharge biochemical oxygen demand (BOD), total suspended solids (TSS), and total phosphorus (TP) could be reduced by such diversion.

1.2.4 Pace Dairy Foods Company

- Pace made tremendous progress in reducing effluent flow. They should be approached to determine if they still estimate that they could need a 73 percent growth in permitted monthly average flow over the next 30 years. It is likely that the flow increase will be much less than this value since flow within a dairy plant is largely driven by product changeovers not production volumes.
- If the City is experiencing troublesome collection of debris (such as ear plugs, hair nets, and bottle caps) in downstream lift stations, Pace could be asked to install a 1/8th-inch screen to remove such debris. This is standard practice for dairy plants that have their own onsite treatment systems.
- Pace should consider the feasibility and economic viability of directing first flush rinses from silos, pasteurizers, fillers, blending tanks, and interconnecting piping to a newly installed high strength waste tank.

1.2.5 Kerry Ingredients (Kerry Bioscience)

- A seal should be placed on the bypass valve that allows Kerry's to direct wastewater directly from lift station to City sewer.
- If the City is experiencing troublesome collection of debris (such as ear plugs, hair nets, and bottle caps) in downstream lift stations, Kerry's could be asked to install a 1/8th-inch

screen to remove such debris. This is standard practice for dairy plants that have their own onsite treatment systems.

- Kerry's should consider the feasibility and economic viability of directing first flush rinses from other equipment (pasteurizers, fillers, blending tanks, and interconnecting piping) to the high strength tank.

1.2.6 Seneca Foods Corporation

- Limit the amount of off-spec creamed corn processed on a given day to that which can result in a discharge compliant with the daily maximum BOD limit.
- Install a flow meter that directly measures the flow discharged to the City sewer on 16th street.

1.2.7 Sanitization Practices

During these meetings the industrial dischargers shared additional information including their sanitation practices. A review of this information revealed that all dischargers used sanitation chemicals that contain compounds such as quaternary ammonium and alkylamine compounds that could disrupt biological treatment at the Rochester WRP if not managed properly. Staff of the WRP subsequently instituted a program of monitoring the approximate concentration of quaternary ammonium compounds at three locations within the WRP (headworks, first stage effluent, and second stage effluent). These results indicated that the concentration at the headworks consistently exceeded the threshold concentration that would adversely affect biological treatment. However, treatment within the first stage reduced these concentrations to approximately one-sixth of the threshold concentration while providing reasonable treatment performance. Because of this treatment in the first stage, second stage treatment was expected to perform unhindered. Ongoing monitoring of sanitization chemicals used should be practiced and could be instrumental in determining causes for decreased performance at the WRP.

1.2.8 Monitoring

WRP should consider switching from total organic carbon (TOC) to chemical oxygen demand (COD) in the monitoring program to facilitate quicker and more reliable assessments of organic loading. TOC analyses require pre-filtration of sample or suction into a syringe that has a small opening. As such TOC is incapable of assessing the particulate BOD in a sample and only the soluble BOD in a sample. COD, by contrast, can be set-up using a wide-mouth pipette allowing one to assess the particulate and soluble BOD. For dairy wastewater, the COD/BOD ratio is typical 1.6.

Dairy wastewater, vegetable wastewater and fermentation wastewater contain significant TSS and associated BOD. The current TOC method does not allow the assessment of the full BOD loading coming from the industry (both particulate and soluble). The assessment by TOC may be capturing only 60 percent of the organic loading. For example, dairy wastewater is typically 40 percent particulate BOD and 60% soluble BOD.

TKN must be done to really capture NH3-N loading. A dairy wastewater can contain 100 mg/L of TKN but only 10 mg/L NH3-N. The remaining 90 mg/L organic nitrogen does become NH3-N through aerobic biological treatment. Thus, TKN is the only way to measure equivalent NH3-N loading.

Inclusion of Total Kjeldahl Nitrogen in the monitoring program would also allow a needed means of tracking nitrogen loading on the facility.

1.2.9 High Strength Waste

Three of the six sites visited are currently removing high strength wastes from their site: AMPI, Kemp's North and Kerry Ingredients.

AMPI's high strength wastes consist of raw ingredients and first flushes from raw ingredient tanks including buttermilk tank, condensed skim milk tank, and cream tank and off-spec product including milk tainted with antibiotics. These wastes would be suitable for treatment in the City of Rochester (City) WRP anaerobic digesters. The volatile solids and potential energy value associated with these wastes would be 37,100 lb volatile solids per month (approximately 52,000 lb COD/month) and 2,600 therms per month. AMPI spends $463 per load for Mountain Environmental to transport and land apply approximately 113,000 gallons per month.

Kemp's North high strength wastes are hauled offsite as animal feed for pork producers at no cost to Kemp's. On average 15,000 gallons per week is hauled off-site. These wastes would be suitable for treatment in the WRP anaerobic digesters following screening to remove the nuts. These wastes would contribute approximately 175,000 pounds COD per month with an energy value of approximately 8,700 therms per month. Kemp's would like to have an alternative site for disposing of these high strength wastes in the event Select Milling is unable to receive the material. This need for an alternative disposal option will be ever more critical as the number of pork producers decrease over time. However, the current zero disposal cost for Kemp's may make this alternative less economically viable for digester gas production.

Kerry Ingredients' high strength wastes from the cleaning of spray dryer and the centrifuge are hauled off-site for land application. Currently this consists of approximately 6,000 gallons per week with a solids concentration between three to four percent and at a cost of approximately $1,500 per week. These wastes would be suitable for treatment in the WRP anaerobic digesters. These wastes would contribute approximately 9,800 pounds COD per month with every energy value of approximately 500 therms per month currently provide some form of high strength waste diversion but only for a limited number of streams.

An economic analysis of the viability of diverting high strength waste to the Rochester WRP digesters to enhance digester gas production will be included in the energy alternatives evaluation.Scope of Work.

Section 1: Associated Milk Producers, Inc. (AMPI)

1.1 Background Data

Table 1.1 provides contact information for AMPI.

Table 1.1. General Information – Associated Milk Producers, Inc.	
Address	700 1st Avenue SE, Rocherster, MN 55904
Contact Name	Steve Voss
Contact Title	Division Manager
Email	vosss@ampi.com
Phone	507-282-7401
Fax	507-529-9883

1.2 Industry Description – Operations

Table 1.2 illustrates the products and amounts produced for each product per day for 2016. These products fall under the Standard Industrial Classification codes of 2022 and 2023. Production is relatively steady throughout the year.

Table 1.2. Description of Premises – Associated Milk Producers, Inc.	
Products	Maximum Quantity Per Day
Cheese	210,000 lb/d
Ice Cream Mix	599,000 lb/d
Lactose Powder	66,000 lb/d
Fluid Whey	1,728,230 lbs

1.3 Limits and Monitoring Requirements (effective until Feb. 28, 2022)

Table 1.3 delineates the specific limits and monitoring required by the pretreatment permit issued by the City of Rochester Public Works Department.

Table 1.3. Specific Limits and Monitoring Required by Permit – Associated Milk Producers, Inc.				
Parameter	Daily Limitation	Monthly Limitation	Sampling Frequency	Sample Type
Flow, mgd	NA	0.230	Continuous	Totalizer
pH	5 < pH < 11	NA	Continuous	Recorder

Table 1.3. Specific Limits and Monitoring Required by Permit – Associated Milk Producers, Inc.				
Parameter	Daily Limitation	Monthly Limitation	Sampling Frequency	Sample Type
$CBOD_5$ lb/d	9,000	8,700	Daily**	24-Hour Composite
TSS lb/d	3,600	2,200	Daily**	24-Hour Composite
TP lb/d	250	165	Daily**	24-Hour Composite

***Daily samples required in Table 1.3 are to be collected by the user in a properly preserved container for analysis by the Rochester WRP.*

1.4 Historic and Projected Waste Load Characteristics

A summary of monthly data for January 2015 through December 2016 was reviewed for CBOD, TSS, and TP. Additional discharge samplers were analyzed on September 17, 19, 20, 21 and 25, 2017 for COD, Total Kjeldahl Nitrogen (TKN), ammonia (NH3-N), and nitrite plus nitrate (NOX-N). These data are included as Attachment A. The average concentrations experienced during this period (see Attachment A) were multiplied by the average flows to get the estimated annual average mass loadings during 2016. Due to the limited data set available, no attempt was made to estimate daily maximums and monthly average loadings. Furthermore, industrial dischargers were asked to project annual average growth in wasteloads.

Site staff were interviewed to determine how the wasteload might grow over the next 20 years. AMPI reported that the current facility could accommodate a 50 percent increase in production with minimal modifications and that such an increase in production was likely given consolidation in the industry. This increase in production could occur within two to five years based on current trends and would be accompanied by a proportional increase in wasteloads. Consequently, the current wasteload was assumed to increase by 50 percent in 2020 and remain steady through 2037 as indicated in Table 1.4. The values highlighted in yellow are in excess of current monthly permit limits. Increased production would come from running existing lines faster and newer technology. Future production will also add more cheese and less ice cream mix to production. Following these discussions, AMPI implemented greater source control measures that reduced the CBOD and likely the COD loadings by approximately 50 percent while making little change in TSS and TP loading. Consequently, only the projections for CBOD and COD were altered.

Table 1.4. Current and Future Average Wasteload Estimates – Associated Milk Producers, Inc.								
Year	Flow (MGD)	CBOD (lbs/day)	COD (lbs/day)	TSS (lbs/day)	TP (lbs/day)	TKN (lbs/day)	(lb-N/day)	NO_X-N (lbs/day)
2017	0.25	6,110	6,290	1,410	106	121	9.0	165
2018[a]	0.23	2,820	NA[b]	1,360	99	NA	NA	NA
2020	0.37	4,230	4,350	2,120	160	180	13	250
2023	0.37	4,230	4,350	2,120	160	180	13	250
2037	0.37	4,230	4,350	2,130	160	180	13	250

a January through June 2018.

b Not analyzed.

These 2037 projected wasteload characteristics are less than 50 percent of the permitted monthly average limit for CBOD and within eight percent of the currently permitted monthly average limits for TSS and TP loadings. The projected flow, however, is 60 percent greater than the currently permitted monthly average flow limit.

1.5 Description of Process Flow and Pretreatment

The AMPI plant produces cheese and ice cream mix. Whey from cheese is separated and sold as a product. Production operates 24 hours per day and seven days per week. A typical cycle is listed in Table 1.5. Observations regarding this production cycle, monitoring, and pretreatment are listed below.

- All clean in place (CIP) practices typically occur between 5 A.M. and 11 A.M.
- The wastewater discharged from the facility includes both AMPI and Kemp's South. AMPI measures the combined flow and load using two discharge pumps each equipped with flow meters as illustrated in Figure 1.1. A flow-proportioned sample is pulled from one discharge pump line.
- Carbon dioxide (CO2) is added in the combined waste discharge line to keep pH less than 11.
- The city subtracts Kemps South from the combined sewer bill and AMPI pays difference.
- The only screening provided is that of grates over floor drains.

Table 1.5. Typical Production Schedule for AMPI

Milk Receiving	2 A.M. to 6 P.M.
Milk Receiving CIP	6 P.M. to 8 P.M.
Milk Receiving Idle	8 P.M. to 2 A.M. (repeat cycle)
Milk Processing	Monday 8 A.M. to Tuesday 4 A.M.
Milk Processing CIP	Tuesday 4 A.M. to Tuesday 8 A.M. (repeat cycle)
UF Processing	Monday 8 A.M. to Tuesday 7 A.M.
UF Processing CIP	Tuesday 7 A.M. to 10:30 A.M. (repeat cycle)
Evaporator	Monday 11:30 A.M. to Tuesday 8 A.M.
Evaporator CIP	Tuesday 8 A.M. to Tuesday 11 A.M. (repeat cycle)

High strength wastes consist of raw ingredients and first flushes from raw ingredient tanks (including buttermilk tank, condensed skim milk tank, and cream tank) and off-spec product (including milk tainted with antibiotics). These high strength wastes are pumped into sludge tanks. The plant spends $463 per load for Mountain Environmental to transport and land apply approximately 113,000 gallons per month (5,400 gallons/day for five days per week). The typical

composition of this waste described in Table 1.6. These wastes would be suitable for treatment in the City of Rochester (City) WRP anaerobic digesters. The volatile solids and potential energy value associated with these wastes would be 37,100 lb volatile solids per month (approximately 52,000 lb COD/month) and 2,600 therms per month.

Table 1.6. Typical Composition of AMPI High Strength Wastes

Parameter	Value
Total Solids, % by weight	3.94
Volatile Solids, % of Total Solids	76.5
pH	3.9
Total Phosphorus, % by weight	1.11
Total Kjeldahl Nitrogen, % by weight	2.22
Ammonia, % by weight	0.153
Sodium, % by weight	5.24
Potassium, % by weight	2.56
Chloride, % by weight	6.47
Oil and Grease, % by weight	12.0

1.6 Recommendations

Four recommendations are being made at this time:

1. AMPI made tremendous progress in reducing effluent CBOD. They should be approached to determine if they still estimate that they could need a 60 percent growth in permitted monthly average flow over the next five years. It is likely that the flow increase will be much less than this value since flow within a dairy plant is largely driven by product changeovers not production volumes.
2. The effluent sampling point should be moved to the single combined discharge line from the AMPI facility to the City sewer. This will result in a collection of a more representative sample.
3. If the City is experiencing troublesome collection of debris (such as ear plugs, hair nets, and bottle caps) in downstream lift stations, AMPI could be asked to install a 1/8th-inch screen to remove such debris. This is standard practice for dairy plants that have their own onsite treatment systems.
4. AMPI should consider the feasibility and economic viability of directing first flush rinses from other equipment (pasteurizers, fillers, blending tanks, and interconnecting piping) to the sludge tanks

Section 2: Kemps LLC – North – Ice Cream

2.1 Background Data

Table 2.1 provides contact information for Kemp's, LLC - North (Kemp's North). Kemp's is a wholly owned subsidiary of Dairy Farmers of America.

Table 2.1. General Information – Kemp's, LLC - North	
Address	406 N Broadway, Rochester, MN 55903
Contact Name	Andrew Evans
Contact Title	Plant Manager
Email	Andrew.evans@kemps.com
Phone	507-287-7333
Fax	507-287-7307

2.2 Industry Description – Operations

Table 2.2 illustrates the products and amounts produced for each product per day for 2016. These products fall under the Standard Industrial Classification code of 2024.

Table 2.2. Description of Premises – Kemp's, LLC - North	
Products	Maximum Quantity Per Day
Ice Cream/Frozen Desserts	175,000 gal/day
Nitrogen frozen pelletized ice cream	

2.3 Limits and Monitoring Requirements

Table 2.3 delineates the specific limits and monitoring required by the pretreatment permit issued by the City of Rochester Public Works Department.

Table 2.3. Specific Limits and Monitoring Required by Permit – Kemp's, LLC - North				
Parameter	Daily Limitation	Monthly Limitation	Sampling Frequency	Sample Type
Flow, mgd		0.110	Continuous	Totalizer
pH	5 < pH < 11	NA	Continuous	Recorder
$CBOD_5$ lb/d	4,700	3,400	Daily**	24 Hour Composite
TSS lb/d	1,650	1,150	Daily**	24 Hour Composite
TP lb/d	50	25	Daily**	24 Hour Composite

***Daily samples required in Table 2.3 are to be collected by the user in a properly preserved container for analysis by the WRP.*

2.4 Historic and Projected Waste Load Characteristics

A summary of monthly data for January 2015 through December 2016 was reviewed for CBOD, TSS, and TP. Additional discharge samplers were analyzed on September 17, 19, 20, 21 and 25, 2017 for COD, TKN, ammonia, and NOX-N. These data are included as Attachment A. The average concentrations experienced during this period (see Attachment A) were multiplied by the average flows to get the estimated annual average mass loadings during 2016. Due to the limited data set available, no attempt was made to estimate daily maximums and monthly average loadings. Furthermore, industrial dischargers were asked to project annual average growth in wasteloads.

Site staff were interviewed to determine how the wasteload might grow over the next 20 years. Kemp's North reported that the current facility could accommodate a maximum increase of 38 percent increase in production with minimal modifications and that such an increase in production was conceivable given consolidation in the industry and popularly of frozen dairy products. This increase in production was assumed to occur between five and 20 years from now and would be accompanied by a proportional increase in wasteloads. Consequently, the current wasteload was assumed to remain steady through 2023 but increase by 38 percent before 2037 as indicated in Table 3.4. The values highlighted in yellow are in excess of current monthly permit limits.

Table 2.4. Current and Future Average Wasteload Estimates – Kemp's, LLC - North

Year	Flow (MGD)	CBOD (lbs/day)	COD (lbs/day)	TSS (lbs/day)	TP (lbs/day)	TKN (lbs/day)	NH_3-N (lbs/day)	NO_X-N (lbs/day)
2017	0.12	3,270	7,040	950	9	60	1.6	4.1
2018[a]	0.10	2,660	NA[b]	965	11	NA	NA	NA
2020	0.12	3,270	7,040	950	9	60	1.6	4.1
2023	0.12	3,270	7,040	950	9	60	1.6	4.1
2037	0.17	4,510	9,720	1,310	12	82	2.2	5.6

a January through June 2018.

b Not analyzed.

These projected 2037 wasteload characteristics are 55 percent greater than the permitted monthly average flow limit, 32 percent greater than the permitted CBOD load, 18 percent greater than the permitted TSS load, and less than the permitted TP load.

2.5 Description of Process Flow and Pretreatment

Kemp's North (also known as Rochester Ice Cream) produces a variety of ice cream products. Raw material is unloaded from tanker trucks and process into cream. The cream receives ingredients that differentiate the variety of ice cream flavors. These mixtures are then placed into containers, wrapped into bundles and frozen. Pallets of finished product are sent to warehouses throughout the country where they are distributed to the customer. The facility's waste streams are managed in the following ways:

- High strength liquid waste is placed into a tank, pumped into a tanker truck and processed offsite.
- Low strength liquid waste is sent to the wastewater treatment plant.

Observations regarding production, monitoring, and pretreatment are listed below:

1. Kemp's operates both a North and South Plant in Rochester. This section only regards the North plant which has ten lines and normally operates six lines. It operated seven lines during the year ending in September 2017. The capacity of the Kemp's North Plant is 50 million gallons of product per year and produced 36 million during the last year ending in September 2017. A conservative estimate of future flow and wasteload can be derived by multiplying the past year data (October 2016 through September 2017) by the ratio of production capacity divided by the past production (50/36).
2. Process wastewater from the North Plant normally flows by gravity into a sump and is then transferred into 4,000-gallon tank that operates at 1,000-gallon level. Under a rare event, the staff calls the WRP and opens a bypass line that allows direct discharge to sewer. The tank holds water back for neutralization using 66 percent sulfuric acid or self-neutralization to achieve pH less than 11. The quantity of acid used is about 100 gallons per week.
3. A new 8,000-gallon tank is being added. This tank will operate in series with the existing 4,000-gallon tank. It will normally operate at about one-fourth volume. Any material in this tank will normally be pumped into second tank. However, under high pH, this tank will be allowed to fill and overflow to second tank if needed to achieve pH less than 11.
4. Sanitization occurs following Monday, Wednesday and Friday midnights.
5. Food Safety Management Act (FSMA) requires that all rework material be used within seven days. At times this cannot be done, and material is sent to high strength waste tank. Same law says that this waste (if it is going to be used for animal feed) cannot have hit floor, cannot ferment (must be above a specified pH), and can't be too hot (must be below a prescribed temperature). If the waste fails to meet these criteria, it is discharged to the sewer. Furthermore, even when it passes the criteria and is not discharged to sewer, the waste material gases so quickly that it must be delivered in clean truck within one hour of being filled on 90-degree Fahrenheit days. Lastly, it should be noted that this material contains about five gallons of nuts per 5,000 gallons of material.

High strength wastes (characterized by WRP as animal feed for pork producers) is hauled offsite for $0/load and used as animal feed by Select Milling for $0/load. On average 15,000 gallons per week is hauled off-site via a 4,000-gallon tank (typical 2,000 gallon working volume). This tank collects material and first flush from silos and large tanks. The material from lines, fillers and favor tanks go to sewer. These wastes would be suitable for treatment in the WRP anaerobic digesters following screening (e.g., one mm basket strainer) to remove the nuts. These wastes would contribute approximately 175,000 pounds COD per month with an energy value of approximately 8,700 therms per month. Kemp's would like to have an alternative site for disposing of these high strength wastes in the event Select Milling is unable to receive the material. This need for an alternative disposal option will be ever more critical as the number of pork producers decrease over time.

First flushes of all other equipment (pasteurizers, fillers, blending tanks, flavor tanks and conveyance lines) are flushed to the sewer. BC recommends that Kemp's North evaluate the feasibility of sending these first flush waters to the high strength waste tank.

2.6 Recommendations

Four recommendations are being made at this time:

1. A seal should be placed on the bypass valve that allows Kemp's North to direct wastewater directly from sump to City sewer. An evaluation needs to be conducted to identify any other City Sewer tie-ins to make sure that these are sealed closed excluding the discharge which is monitored for flow and strength by the City.
2. Kemp's North needs to identify an alternative discharge location for the high strength wastes. When it fails to meet livestock feed requirements, it needs to remain out of the sewer and discharged instead to this alternative location. The alternative location may require removal of nuts from waste prior to disposal.
3. If the City is experiencing troublesome collection of debris (such as ear plugs, hair nets, and bottle caps) in downstream lift stations, Kemp's North could be asked to install a 1/8th - inch screen to remove such debris. This is standard practice for dairy plants that have their own onsite treatment systems.
4. Kemp's North should consider the feasibility and economic viability of directing first flush rinses from other equipment (pasteurizers, fillers, blending tanks, and interconnecting piping) to the high strength waste tank even if it required installation of another tank. See Section 8 for further discussion.

Section 3: Kemps, LLC – South - Milk Plant

3.1 Background Data

Table 3.1 provides contact information for Kemp's, LLC – South (Kemp's South)

Table 3.1. General Information – Kemp's, LLC - South	
Address	700 1st Avenue SE, Rochester, MN 55904
Contact Name	Jason Rapp
Contact Title	Asst. Plant Manager
Email	jason.rapp@kemps.com
Phone	507-207-5239
Fax	507-206-5232

3.2 Industry Description – Operations

Table 3.2 illustrates the products and amounts produced for each product per day for 2016. These products fall under the Standard Industrial Classification codes of 2026 and 2037.

Table 3.2. Description of Premises – Kemp's, LLC - South	
Products	Maximum Quantity Per Day
Fluid Milk	130,000 gallons
Bulk Cream	5,000 gallons
Fruit Drinks	2,000 gallons

3.3 Limits and Monitoring Requirements

Table 3.3 delineates the specific limits and monitoring required by the pretreatment permit issued by the City of Rochester Public Works Department.

Table 3.3. Specific Limits and Monitoring Required by Permit – Kemp's, LLC - South				
Parameter	Daily Limitation	Monthly Limitation	Sampling Frequency	Sample Type
Flow mgd		0.222	Continuous	Totalizer
$CBOD_5$ lb/d	4,300	3,200	Daily**	24 Hour Composite
TSS lb/d	1,500	1,100	Daily**	24 Hour Composite
TP lb/d	75	55	Daily**	24 Hour Composite

***Daily samples required in Table 3.3 are to be collected by the user in a properly preserved container for analysis by the WRP.*

3.4 Historic and Projected Waste Load Characteristics

A summary of monthly data for January 2015 through December 2016 was reviewed for BOD, TSS, and TP. Additional discharge samplers were analyzed on September 17, 19, 20, 21 and 25, 2017 for COD, TKN, NH3-N, and NOX- N. These data are included as Attachment A. The average concentrations experienced during this period (see Attachment A) were multiplied by the average flows to get the estimated annual average mass loadings during 2016. Due to the limited data set available, no attempt was made to estimate daily maximums and monthly average loadings. Furthermore, industrial dischargers were asked to project annual average growth in wasteloads.

Site staff were interviewed to determine how the wasteload might grow over the next 20 years. Kemp's South reported that no increases in production are expected for the facility over the next 20 years. A change in product type for higher milkfat products may occur but this would be anticipated to change the wasteload significantly from current values. Consequently, the current wasteload was assumed to remain steady over the next 20 years as indicated in Table 3.4. The values highlighted in yellow are in excess of current monthly permit limits.

Table 3.4. Current and Future Average Wasteload Estimates – Kemp's, LLC - South

Year	Flow (mgd)	BOD (lbs/day)	COD (lbs/day)	TSS (lbs/day)	TP (lbs/day)	TKN (lbs/day)	NH_3-N (lbs/day)	NO_X-N (lbs/day)
2017	0.16	2,750	3,840	1,170	19	89	1.8	3.3
2018[a]	0.14	2,690	NA[b]	1,240	19	NA	NA	NA
2020	0.16	2,750	3,840	1,170	19	89	1.8	3.3
2023	0.16	2,750	3,840	1,170	19	89	1.8	3.3
2037	0.16	2,750	3,840	1,170	19	89	1.8	3.3

a January through June 2018.

b Not analyzed.

These projected 2037 wasteload characteristics are essentially equal or less than the current permitted monthly average limits.

3.5 Description of Process Flow and Pretreatment

Milk is received by AMPI employees and stored in raw milk silos. Kemp's transfers milk from the silos to pasteurization equipment. Kemp's mixes milk from the silo with other ingredients in batch tanks. (e.g., chocolate powder and sugar for chocolate milk) then transfers to pasteurization equipment. From the pasteurization equipment product is sent to pasteurized tanks. From pasteurized tanks product is sent to fillers and into product containers.

Observations regarding this production, monitoring, and pretreatment are listed below:

1. The plant produces 400 SKUs yielding a product change about every 48 minutes. This includes products varying from egg nog, ice cream mix, whipping cream, specialty cream sauces, and buttermilk, and sizes varying from pints to five-gallon bags. Higher loads would be expected in the holiday season lasting from October through early January.

2. Production starts at 11 P.M. each Sunday with an acid, wash, sanitize, and rinse cycle. Production starts Monday morning at 6 A.M. with white milks. At 11 A.M. on Monday mornings, packaging begins. Operation consists of 24 hour runs on each packaging and filler line (seven lines). Then, CIP practices begin at about 11 A.M. on Tuesday. Then production continues the rest of week with varying runs. CIP, clean-out of place (COP), and localized cleaning are going on all the time. Silos are washed every 72 hours.
3. All wastewater flows to a 3,200-gallon pit. Pit discharges though flow meter and flow proportioned sampler to AMPI wastewater discharge. All wastewater discharges through the AMPI combined discharge to the City sewer.
4. Normal production stops on Saturday at 6 to 8 A.M. During holiday season (2nd week of October through December 31), the plant operates seven days per week.
5. Future production for 20 years out should stay same. Any change would be a growth in higher milkfat content products.

3.6 Recommendations

Two recommendations are being made at this time:

1. If the City is experiencing troublesome collection of debris (such as ear plugs, hair nets, and bottle caps) in downstream lift stations, Kemp's North could be asked to install a 1/8th-inch screen to remove such debris. This is standard practice for dairy plants that have their own onsite treatment systems.
2. Kemp's South should consider the feasibility and economic viability of directing first flush rinses from pasteurizers, fillers, blending tanks, and interconnecting piping to a newly installed high strength wastes tank. Due to the large quantity of SKUs, greater than 50 percent of the discharge BOD, TSS, and TP could be reduced by such diversion. See Section 8 for further discussion.

Section 4: Pace Dairy Foods Company

4.1 Background Data

Table 4.1 provides contact information for Pace Dairy Foods Company.

Table 4.1. General Information – Pace Dairy Foods Company	
Address	2700 Valleyhigh Drive, Rochester, MN 55903
Contact Name	Rob Ramer
Contact Title	Plant Engineer
Email	rob.ramer@kroger.com
Phone	507-280-5685
Fax	507-280-5688

4.2 Industry Description – Operations

Table 4.2 illustrates the products and amounts produced for each product per day for 2016. These products fall under the Standard Industrial Classification codes of 2022.

Table 4.2. Description of Premises – Pace Dairy Foods Company	
Products	Maximum Quantity Per Day
Natural Cheese	280,000
Processed Cheese	150,000

4.3 Limits and Monitoring Requirements

Table 4.3 delineates the specific limits and monitoring required by the pretreatment permit issued by the City of Rochester Public Works Department and effective February 1, 2015 to January 31, 2017.

Table 4.3. Specific Limits and Monitoring Required by Permit – Pace Dairy Foods Company				
Parameter	Daily Limitation	Monthly Limitation	Sampling Frequency	Sample Type
Flow, mgd		0.049	Continuous	Totalizer
pH	5 < pH < 11	NA	Continuous	Recorder
$CBOD_5$ lb/d	700	350	Daily	24 Hour Composite
TSS lb/d	650	300	Daily	24 Hour Composite
TP lb/d	60	30	Daily	24 Hour Composite

4.4 Historic and Projected Waste Load Characteristics

A summary of monthly data for January 2015 through December 2016 was reviewed for BOD, TSS, and TP. Additional discharge samplers were analyzed on September 17, 19, 20, 21 and 25, 2017 for COD, TKN, NH3-N, and NOX-N. These data are included as Attachment A. The average concentrations experienced during this period (see Attachment A) were multiplied by the average flows to get the estimated annual average mass loadings during 2016. Due to the limited data set available, no attempt was made to estimate daily maximums and monthly average loadings. Furthermore, industrial dischargers were asked to project annual average growth in wasteloads.

Site staff were interviewed to determine how the wasteload might grow over the next 20 years. Pace reported that the most aggressive growth plans would result in a 1.5 percent increase per year in flow and wasteload which is reflected in Table 5.4. The values highlighted in yellow are in excess of current monthly permit limits.

Table 4.4. Current and Future Average Wasteload Estimates – Pace Dairy Foods Company

Year	Flow (mgd)	CBOD (lbs/day)	COD (lbs/day)	TSS (lbs/day)	TP (lbs/day)	TKN (lbs/day)	NH_3-N (lbs/day)	NO_X-N (lbs/day)
2017	0.063	230	410	210	5	14	0.4	5.3
2018	0.045	210	NA[a]	190	4	NA	NA	NA
2020	0.066	240	430	2,200	5.2	15	0.43	5.5
2023	0.069	250	450	230	5.5	15	0.45	5.8
2037	0.085	310	550	280	7.0	18	0.55	7.1

a. Not analyzed

These projected 2037 wasteload characteristics are 73 percent higher than the current monthly average flow limit but well below all other current monthly average permit limits.

4.5 Description of Process Flow and Pretreatment

Observations regarding the production plant, monitoring, and pretreatment are listed below:

1. Plant is divided into natural cheese and process cheese. Shavings and other pieces from natural cheese are collected as dry material and used as process cheese feedstock (first choice), fish bate (second choice) and incinerated (last choice).
2. Cheese is either processed on cold roll lines or hot pack lines. Plant is moving to hot pack only which will generate less product loss to sewer.
3. There are two cleaning processes: CIP and COP. Before the start of either, the equipment is flushed with hot water through a sock filter to remove solids. Solids are discarded in dumpster for off-site incineration.
4. There are two cleans each week: Wednesday night and Friday night. Wednesday night is only process cheese side of plant and begins at midnight and continues through Thursday 5 to 6 A.M. Friday is a whole plant clean and last from midnight and goes through Saturday 7 A.M.
5. High pH CIP is discharged to tank and is bled back into sewer at controlled rate for pH control.

6. Future production growth will consist of more natural cheese and more hot pack. The maximum growth in production would be 0.5 percent per year. Maximum aggressive growth would be 1.5 percent per year. Increasing existing flow and wasteload by 1.5 percent per year would be conservative.

4.6 Recommendations

Three recommendations are being made at this time:

1. Pace made tremendous progress in reducing effluent flow. They should be approached to determine if they still estimate that they could need a 73 percent growth in permitted monthly average flow over the next 30 years. It is likely that the flow increase will be much less than this value since flow within a dairy plant is largely driven by product changeovers not production volumes.
2. If the City is experiencing troublesome collection of debris (such as ear plugs, hair nets, and bottle caps) in downstream lift stations, AMPI could be asked to install a 1/8th-inch screen to remove such debris. This is standard practice for dairy plants that have their own onsite treatment systems.
3. Pace should consider the feasibility and economic viability of directing first flush rinses from silos, pasteurizers, fillers, blending tanks, and interconnecting piping to a newly installed high strength waste tank. See Section 8 for further discussion.

Section 5: Kerry Ingredients (Kerry Bioscience)

5.1 Background Data

Table 5.1 provides contact information for Kerry Ingredients.

Table 5.1. General Information – Kerry Ingredients	
Address	2402 7th Street NW, Rochester, MN 55901
Contact Name	Richard Anderson
Contact Title	Manager, Engineering & Maintenance
Email	richard.anderson@kerry.com
Phone	507-206-1230
Fax	507-285-3438

5.2 Industry Description – Operations

Table 5.2 illustrates the products and amounts produced for each product per day for 2016. These products fall under the Standard Industrial Classification codes of 2023 and 2099.All products from this facility are fermented products. Consequently, the solids discharged in the wastewater are composed of bacteria and biodegradable materials. The BOD and COD discharged in the wastewater would consist primarily of readily degradable compounds such as volatile fatty acids. Wastes like these will have a 20-day BOD that is similar to the five-day BOD.

Table 5.2. Description of Premises – Kerry Ingredients	
Products	Maximum Quantity Per Day
Dry Powder, Finished Goods	55,000 lb/d
Liquid Culture Concentrate	1,650 lb/d
Yogurt Cultures	38,000 lb/d

5.3 Limits and Monitoring Requirements

Table 6.3 delineates the specific limits and monitoring required by the pretreatment permit issued by the City of Rochester Public Works Department.

Table 5.3. Specific Limits and Monitoring Required by Permit – Kerry Ingredients				
Parameter	Daily Limitation	Monthly Limitation	Sampling Frequency	Sample Type
Flow MGD		0.179	Continuous	Totalizer
pH	5 < pH < 11	NA[a]	Continuous	Recorder
$CBOD_5$ lb/d	2,800	2,200	Daily	24 Hour Composite
TSS lb/d	2,400	1,200	Daily	24 Hour Composite
TP lb/d	50	30	Daily	24 Hour Composite

a. Not analyzed

5.4 Historic and Projected Waste Load Characteristics

A summary of monthly data for January 2015 through December 2016 was reviewed for BOD, TSS, and TP. Additional discharge samplers were analyzed on September 17, 19, 20, 21 and 25, 2017 for COD, TKN, NH3-N, and NOX-N. T These data are included as Attachment A. The average concentrations experienced during this period (see Attachment A) were multiplied by the average flows to get the estimated annual average mass loadings during 2016. Due to the limited data set available, no attempt was made to estimate daily maximums and monthly average loadings. Furthermore, industrial dischargers were asked to project annual average growth in wasteloads.

Site staff were interviewed to determine how the wasteload might grow over the next 20 years. Kerry's reported that the current facility could experience a 100 percent increase in flow and a 50 percent increase in wasteload over the next five years. Consequently, the current wasteload was assumed to increase by these values in 2021 and remain steady through 2037 as indicated in Table 5.4. The values highlighted in yellow are in excess of current monthly permit limits. Kerry staff have indicated that they intend to keep loadings with the new permit limits as they continue to grow.

Table 5.4. Current and Future Average Wasteload Estimates – Kerry Ingredients

Year	Flow (mgd)	CBOD (lbs/day)	COD (lbs/day)	TSS (lbs/day)	TP (lbs/day)	TKN (lbs/day)	NH_3-N (lbs/day)	NO_X-N (lbs/day)
2017	0.18	1,470	2,020	290	18	71	33	206
2018	0.19	1,450	NA[a]	450	28	NA	NA	NA
2020	0.18	1,470	2,020	290	18	71	33	206
2023	0.36	2,210	3,030	440	26	110	50	309
2037	0.36	2,210	3,030	440	26	110	50	309

a. *Not analyzed*

These 2037 projected wasteloads are 100 percent higher than the current monthly average flow permit limit, 47 percent higher than the monthly average CBOD limit, and well within the current limits for TSS and TP. Kerry has reported that the plan to keep loadings within the permitted limits as they continue to grow.

5.5 Description of Process Flow and Pretreatment

Liquid raw materials are received on the west side of the building and stored in one of thirteen dairy silos. Dry powder raw materials are received on the east side of the facility and are blended together with liquids (water or other liquid raw material) and converted to an intermediate state via microbial fermentation or reaction hydrolysis. The intermediate product is then sent to a spray dryer after pasteurization and or evaporation, for conversion into a powder. This powder is packaged directly off the spray dryer or blended with other powder ingredients and subsequently packaged to make finished goods. Liquefied culture concentrates, and yogurt cultures do not get spray dried. They are packaged directly out of the blending/fermentation vessels in their final form into cups or bags.

Observations regarding this production, monitoring, and pretreatment are listed below:

1. There are four major product groups. Operation is 24/7.
    a. Fermented calcium lactate produces calcium propionate. Spray dried to powder. Products used in baked goods.

   b. Fermented celery juice. Packaged as liquid and powder. Used as natural source of nitrite and used as meat preservative.
   c. Fermented skim milk.
   d. Vinegars.

2. Wastewaters are generated as rinse waters, evaporator condensates, cleaning of residual powder after vacuuming of area (vacuumed material goes to solid wastes). Must vacuum to prevent drain pluggage. All wastewaters come together in sump. They are neutralized with sodium hydroxide and sulfuric acid as needed. Sump can overflow to City sewer under high flow events. Sump contents are pumped to two cell equalizations in series. Effluent from third cell can return to sump or discharge through flow meter and flow composite sampler to City sewer.
3. Dryers, sterilizers, evaporators, and pasteurizers all have own cleaning program (CIP System).
4. Silos, blend tanks, and fermenting vessels are cleaned via CIP system. Silos are cleaned as needed, which could range from every 24 to 72 hours.
5. There is an average of 25 to 30 CIP cycles per day. They normally involve acid, base and sanitizer. The acid is 58 percent nitric acid. The base is 50 percent sodium hydroxide with EDTA. The sanitizer is largely a diluted peracetic acid and sulfuric acid.
6. Future wasteload could be twice current flow and 50 percent greater than current wasteload (January 2016 through January 2017). This increase could happen within next five years.

High strength wastes from cleaning spray dryer and centrifuge discharge to Silo 1 and is hauled off for land application (two loads per week at approximately $1,500 per week and about 3,000 gallons per load at three to four percent total solids. These wastes would be suitable for treatment in the WRP anaerobic digesters. These wastes would contribute approximately 9,800 pounds COD per month with every energy value of approximately 500 therms per month.

5.6 Recommendations

Three recommendations are being made at this time:

1. A seal should be placed on the bypass valve that allows Kerry's to direct wastewater directly from lift station to City sewer.
2. If the City is experiencing troublesome collection of debris (such as ear plugs, hair nets, and bottle caps) in downstream lift stations, Kerry's could be asked to install a 1/8th-inch screen to remove such debris. This is standard practice for dairy plants that have their own onsite treatment systems.
3. Kerry's should consider the feasibility and economic viability of directing first flush rinses from other equipment (pasteurizers, fillers, blending tanks, and interconnecting piping) to the high strength tank. See Section 8 for further discussion.

Section 6: Seneca Foods Corporation

6.1 Background Data

The following information refers to the status of Seneca Foods through October 15, 2018. They have provided notice of their intent to cease operations effective October 15th. There is currently no information on the future use of the facility of the site.

Table 6.1 provides contact information for Seneca Foods.

Table 6.1. General Information – Seneca Foods Corp.	
Address	1217 3rd Avenue SE, Rochester, MN 55904
Contact Name	Dave Elfstrand
Contact Title	Plant Manager
Email	delfstrand@senecafoods.com
Phone	507-280-4531
Fax	507-280-4542

6.2 Industry Description – Operations

Table 6.2 illustrates the products and amounts produced for each product per day for 2016. These products fall under the Standard Industrial Classification code of 2033. Late in 2018 a decision was made that this facility will primarily focus on cream corn. This may increase the average discharge BOD loading to the sewer beyond that previously experienced.

Table 6.2. Description of Premises – Seneca Foods Corp.	
Products	Maximum Quantity Per Day
Canned & Frozen Peas	500 tons per day
Canned & Frozen Sweet Corn	2,200 tons per day
Canned & Frozen Carrots	400 tons per day

6.3 Limits and Monitoring Requirements

Table 6.3 delineates the specific limits and monitoring required by the pretreatment permit issued by the City of Rochester Public Works Department.

Table 6.3. Specific Limits and Monitoring Required by Permit – Seneca Foods Corp.				
Parameter	Daily Limitation	Monthly Limitation	Sampling Frequency	Sample Type
Flow MGD		0.444	Continuous	Totalizer
pH	5 < pH < 11	NA[a]	Continuous	Recorder
$CBOD_5$ lb/d	13,000	7,000	Daily	24 Hour Composite
TSS lb/d	6,600	3,300	Daily	24 Hour Composite
TP lb/d	85	50	Daily	24 Hour Composite

a. *Not analyzed*

6.4 Historic and Projected Waste Load Characteristics

A summary of monthly data for January 2015 through December 2016 was reviewed for BOD, TSS, and TP. Additional discharge samplers were analyzed on September 17, 19, 20, 21 and 25, 2017 for COD, TKN, NH3-N, and NOX-N. These data were used to approximate the current wasteload characteristics. Site staff were interviewed to determine how the wasteload might grow over the next 20 years. Staff reported that the wasteload would not increase over the next 20 years. Consequently, the current wasteload was assumed to remain steady through 2037 as indicated in Table 6.4.

Seneca will remain below the current monthly average limits due to the short campaign nature of the production runs. However, the daily maximum BOD limit was exceeded by 53 percent during the short four-day February run. This was likely due to the processing of off-spec creamed corn.

Table 6.4. Current and Future Wasteload Estimates – Seneca Foods Corp.

Year	Flow (MGD)	BOD (lbs/day)	COD (lbs/day)	TSS (lbs/day)	TP (lbs/day)	TKN (lbs/day)	NH_3-N (lbs/day)	NO_X-N (lbs/day)
2017	0.089	856	1,272	636	15	44	2.5	8.9
2018	0.36	13,000	NA[a]	470	NA[a]	NA[a]	NA[a]	NA[a]
2020	0.089	856	1,272	636	15	44	2.5	8.9
2023	0.089	856	1,272	636	15	44	2.5	8.9
2037	0.089	856	1,272	636	15	44	2.5	8.9

6.5 Description of Process Flow and Pretreatment

Observations regarding this production, monitoring, and pretreatment are listed below:

1. The production season for corn runs from the first of August through the first of October. Corn is husked, visually inspected, and kernels are removed. The husks and cobs go to animal feed. The kernels are washed to remove silk and other pieces in a downstream dissolved air flotation Unit. The underflow (kernels) go through color sorting and then canning or freezing. For canned corn, water and ingredients are added (sugar and starch), the product is heated and added to can. Can must be at 180 degrees Fahrenheit. Must dump first five to 30 minutes of production water while getting process up to temperature.
2. 3 Bean is run seven days before pea packing begins and seven to 10 days after corn packing.
3. Green beans run from 2nd week in July to end of September.
4. Lima beans already show up cleaned. They go from truck directly to blanching.
5. All production is down from November 1st through first of June.
6. When in operation, the plant operates 24 hours per day and seven days per week.
7. Future wasteload for 20 years out can be assumed to be the same as the 2016 to 2017 season. Plans are to use less water in the future.
8. Cleaning occurs every day between 2 A.M. to 8 A.M.
9. Extra cleaning occurs every 2nd day and begins with water and manual brushing. Water flow can reach 400 gallons per minute (gpm. Next is chlorinated caustic use,

peracetic acid use, quat use (up to 400 ppm on feed contact surfaces), and then final rinse. Adenosine Triphosphate (ATP) swab testing is conducted to verify everything is sanitized.

10. Off-spec product is processed after the production season. Seneca will forewarn Rochester WRP and then crush cans and wash material down drain.
11. All wastewater from the facility discharges to a wastewater pit. There is no overflow from this pit. The pit contents are discharged through two rotary screens operated in parallel. One screen is 0.010-inch mesh and the other is 0.020-inch mesh. The screened wastewater combines and is pumped through three paths: through a flow meter to the 3rd street sewer, through a flow meter to the 16th street forcemain and then through flow meter to land application.
12. The flow to the City sewer via the 16th street forcemain is calculated as the difference between the forcemain flow and the flow to land application.
13. One composite sampler pulls a flow-proportioned sample from both discharge forcemains.

6.6 Recommendations

Two recommendations are being made at this time:

1. Limit the amount of off-spec creamed corn processed on a given day to that which can result in a discharge compliant with the daily maximum BOD limit.
2. Install a flow meter that directly measures the flow discharged to the City sewer on 16th street.

Section 7: Sanitization Practices and Potential Impact on WRP Treatment

It has been documented that two mg/L of quaternary ammonium (quats) or alkylamine compounds can cause a decrease in biological nitrification rates and 10 mg/L can cause a decrease in BOD removal. Rate[1] . All six of the industries described in this report use such cleaning compounds.

The highest mass loading of these compounds from each industry was determined in the following manner:

1. Determine which sanitization chemicals used by each industry contained quats and alkylamine compounds.
2. Determine the highest monthly use of these sanitization chemicals and divide this by the hours per month that these chemicals are used to estimate the maximum hourly usage rate (lbs/hr).
3. Estimate the maximum hourly mass loading rate (lbs/hr) of quats and alkylamine compounds by multiplying the maximum hourly usage rates by the fraction by weight of the sanitization chemicals that are quats and alkylamine compounds.
4. Divide this maximum hourly mass loading rate by the average flowrate entering the WRF (15 mgd or 625,000 gallons/hour) to calculate the maximum concentration of these compounds present at the headworks of the WRF.

Results of these calculations indicate that the respective industries can contribute to the concentrations of quats and alkylamine compounds at the headworks of the WRF illustrated in Table 7-1.

Table 7.1. Headworks Concentrations of Quats and Alkylamine Compounds (mg/L)

AMPI	Kemp's North	Kemp's South	Pace	Kerry's	Seneca	Combined
0.054	1.4	1.7	1.7	2.3	0.15	>7

Actual monitoring data by the WRP staff have detected an average of 2.4 mg/L quats in the headworks with a standard deviation of 0.5 mg/L. The average concentrations present in the high purity oxygen activated sludge (HPOAS) first stage and second stage effluent have been 0.3 mg/L and 0.2 mg/L, respectively. Neither of these concentrations would be expected to inhibit biological treatment. At the same time, it should be noted that unresolved inhibition problems resulted in a high level of uncertainty in the WRP lab data.

If the WRP does experience future difficulties in nitrification (ammonia removal), quat concentrations in the plant influent, HPOAS first and second stage effluent and Aeration Basin Complex (ABC) effluent should be measured. If a reduction in potentially troublesome sanitization chemicals being discharged to the sewer is ever needed, each industry should be limited to a discharge concentration that results in a combined headworks concentration of less than two mg/L for both types of compounds (quats and alkylamine compounds). It should also be noted that there remains a high degree of uncertainty within the data due to unresolved inhibition problems

1. Impact of Cleaning and Disinfecting Agents on Biological Treatment Processes. James C. Young, 7th Annual Industrial Waste Technical and Regulatory Conference, August 2001, Charleston, South Carolina.

Section 8: Monitoring, Pretreatment and High Strength Waste

8.1 Monitoring

Currently, each industry is monitored and permitted for flow, CBOD, TSS, and TP. CBOD is of little value since it is subject to bio-inhibition caused by sanitization chemicals and requires five days to get a result. COD would be a better parameter for monitoring organic loads since it is not subject to bio-inhibition and provides a same day answer. The current monitoring program neglects nitrogen monitoring. TKN rather than ammonia should be monitored since all the major industries discharge nitrogen mainly in the form of organic nitrogen.

For dairy products industries, turbidity can be correlated with discharge CBOD or COD. It can be used as an on-line tool for wastestream monitoring.

8.2 Pretreatment

Seneca is the only industry that provides pretreatment for removal of BOD and TSS. The others simply provide pH control.

For dairy products industries, the standard pretreatment practiced is pH adjustment. The TSS and BOD associated with dairy wastewater are highly degradable and are not removed in primary clarifiers. Consequently, this BOD and TSS load would be removed in the first stage of a two-stage activated sludge treatment facility. The standard pretreatment required for a dairy products industry to remove 80 percent TSS, 40 percent BOD, and up to 90 percent TP is screening followed by equalization followed by dissolved air flotation (DAF) treatment with off-site disposal of the DAF float as a high strength waste. The capital cost for such a facility would be approximately $3 million to $4 million while treating a flow up to 300,000 gpd. The operational costs would be approximately 20 percent less than the current sewer surcharge fees ($0.40/lb BOD and $0.38/lb TSS) that would have been imposed on the BOD and the TSS removed. This assumes an affordable outlet for high strength waste disposal.

Seneca is already providing the best degree of pretreatment that would be economically reasonable.

It is uncertain, without further data collection, what pretreatment options would be economically viable for Kerry's.

8.3 High Strength Waste

Three of the six sites visited are currently removing high strength wastes from their site: AMPI, Kemp's North and Kerry Ingredients.

AMPI's high strength wastes consist of raw ingredients and first flushes from raw ingredient tanks including buttermilk tank, condensed skim milk tank, and cream tank and off-spec product including milk tainted with antibiotics. These wastes would be suitable for treatment in the City of Rochester (City) WRP anaerobic digesters. The volatile solids and potential energy value associated with these wastes would be 37,100 lb volatile solids per month (approximately 52,000 lb COD/month) and 2,600 therms per month. AMPI spends $463 per load for Mountain Environmental to transport and land apply approximately 113,000 gallons per month.

Kemp's North's high strength wastes are hauled offsite as animal feed for pork producers at no cost to Kemp's. On average 15,000 gallons per week is hauled off-site. These wastes would be suitable for treatment in the WRP anaerobic digesters following screening to remove the nuts. These wastes would contribute approximately 175,000 pounds COD per month with an energy value of approximately 8,700 therms per month. Kemp's would like to have an alternative site for disposing of these high strength wastes in the event Select Milling is unable to receive the material. This need for an alternative disposal option will be ever more critical as the number of pork producers decrease over time. However, the current zero disposal cost for Kemp's may make this alternative less economically viable for digester gas production.

Kerry Ingredients' high strength wastes from the cleaning spray dryer and the centrifuge are hauled off-site for land application. Currently this consists of approximately 6,000 gallons per week with a solids concentration between three to four percent and at a cost of approximately $1,500 per week. These wastes would be suitable for treatment in the WRP anaerobic digesters. These wastes would contribute approximately 9,800 pounds COD per month with every energy value of approximately 500 therms per month currently provide some form of high strength waste diversion but only for a limited number of streams.

An economic analysis of the viability of diverting high strength waste to the Rochester WRP digesters to enhance digester gas production will be included in the energy alternatives evaluation.

Section 9: Future Wasteload Growth

If all industry projections for 2037 flows and wasteloads occurred, the cumulative industrial load would remain below the current permitted average monthly permit limits for flow, CBOD, TSS and TP. These projections varied from no growth in flow and wasteload to 50 percent growth in flow and wasteload. For purposes of the facility planning study, the cumulative industrial flow and wasteload was assumed to grow at approximately 1.5 percent per year, consistent with the residential growth projections used for facility planning purposes. This is reasonable given the current state of the dairy products industry and the recent production decline anticipated at Seneca.

Attachment A: Special Sampling Data for September 17 through 25, 2017

Sample Date		AMPI	Kemp's North	Kemp's South	Pace	Kerry	Seneca
17-Sep	COD	3,060	96,40	3,060	980	1,100	173
	TKN	51	73	51	30	54	0.4
	NH_3-N	3.8	1.0	1.0	0.7	25	<0.2
	NOx-N	60	1.6	3.5	11	152	<0.2
19-Sep	COD	2,820	5,410	400	220	1,160	7,910
	TKN	56	52	76	4.9	46	120
	NH_3-N	5.3	1.0	1.5	0.3	27	3.4
	NOx-N	25	4.3	2.7	1.7	110	12.1
20-Sep	COD	2,720	6,410	3,360	1,860	910	163
	TKN	40	38	73	39	41	NA
	NH_3-N	2.7	1.5	1.9	1.3	27	NA
	NOx-N	212	5.1	2.4	16	142	NA
21-Sep	COD	3,420	7,070	3,520	670	1,180	173
	TKN	69	72	71	24	31	NA
	NH_3-N	5.0	3.0	1.4	0.7	15	NA
	NOx-N	68	4.2	2.3	13	101	NA
25-Sep	COD	3,340	6,500	4,450	143	2,420	195
	TKN	79	62	73	35	65	NA
	NH_3-N	5.1	1.5	1.3	0.7	18	NA
	NOx-N	37	5.0	2.0	9.1	184	NA
Average	COD	3,072	7,006	2,958	775	1,354	1,723
	TKN	59	59	69	27	47	60
	NH_3-N	4.4	1.6	1.4	0.7	22	3.4
	NOx-N	80	4.0	2.6	10	138	12
	BOD_a	2,985	3,249	2,117	437	986	1,194
	COD/BOD	1.0	2.2	1.4	1.8	1.4	1.4
	TKN/BOD	0.02	0.02	0.03	0.06	0.05	0.05

a. *Based on ratio of BOD/COD observed in 2016*

Attachment B: Reference on Impacts of Sanitization Chemicals on Wastewater Treatment Facilities

Return to TAF

IMPACT OF CLEANING AND DISINFECTING AGENTS ON BIOLOGICAL TREATMENT PROCESSES

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ABSTRACT

Food and beverage processing industries frequently use chemical agents to clean and disinfect production equipment, storage vats, packaging lines, and cooking units either during the manufacturing process or at daily or weekly intervals. Wastewaters produced by these operations typically are discharged to an industrial treatment plant or a local treatment works. Problems occur infrequently when the chemical agents are used sparingly and are discharged to the treatment works at continuous but low concentrations. However, for CIP and weekly cleaning/disinfecting operations, large amounts of chemical agents can be discharged at one time. The resulting slug dose can interfere with the normal performance of the treatment plant and cause violations of discharge permits for COD, BOD, ammonia, or phosphorus. In extreme cases, process failure can occur. Tests were conducted with anaerobic and aerobic processes using a number of commercial cleaning/disinfecting agents. These tests indicated that commercial formulations containing quaternary ammonium compounds and alkylamines were most likely to cause toxic impacts. Threshold toxic concentrations ranged from 100 to 200 mg/L as the commercial formulation or 5 to 10 mg/L when based on the active ingredient.

KEY WORDS

toxicity, inhibition, anaerobic processes, aerobic processes, cleaning agents, disinfectants

INTRODUCTION AND OBJECTIVES

Food and beverage processing industries frequently use chemical agents to clean and disinfect production equipment, storage vats, packaging lines, and cooking units either during the manufacturing process or at daily or weekly intervals. In some cases, mixtures of disinfectants, surfactants, and lubricants are used in bottling and canning operations. The surfactants and lubricants help move cans and bottles along conveyor belts; the disinfectants prevent growth of microorganisms on equipment and containers. Another major use is for cleaning-in-place (CIP) operations that use large amounts of chemical in short periods of time, often at the end of a workweek. The wastewaters produced by both these operations typically are discharged to an industrial treatment plant or to a local treatment works. Problems occur infrequently when the chemical agents are used sparingly and are discharged to the treatment works at continuous but

low concentrations. However, for CIP and weekly cleaning/disinfecting operations, large amounts of chemical agents can be discharge in short periods of time. The resulting slug dose can interfere with the normal performance of the treatment plant. While process failure may not occur, the chemicals can inhibit biological reactions in treatment processes and cause violations of discharge permits for COD, BOD, ammonia, or phosphorus.

Tests were conducted to assess the toxicity to biological treatment processes of a number of chemicals that are used commercially as cleaning and disinfecting agents. This study involved dosing aerobic or anaerobic cultures with chemical concentrations that span the anticipated range of concentrations discharged to treatment plants. Respirometers were used to measure the impact of the chemicals on oxygen uptake in aerobic processes and methane production in anaerobic processes. Test chemicals included those used at food and beverage processing plants, dairies, and breweries.

Typical constituents included caustic agents (sodium and/or potassium hydroxide), phosphates, surfactants, diamines, triamines, quaternary ammonium compounds, and proprietary materials. Formulations for a number of commercially available cleaning and disinfecting agents are given in Table 1. The ingredients shown are fairly typical of those used in numerous other commercial formulations, and one commercial supplier may have various mixtures of the same chemicals for different applications.

TEST PROGRAM

Tests were conducted using anaerobic and aerobic treatment environments. Aerobic tests included adding the cleaning/disinfecting agents to respirometer vessels containing wastewater or pure chemical (usually ethanol) as an organic substrate. The reactors were seeded using microorganisms from full-scale or laboratory-scale activated sludge units. Oxygen uptake was measured using an aerobic respirometer (AER-200, Challenge Environmental Systems, Inc., Fayetteville, AR). The pattern of oxygen uptake relative to a control that received no test chemical indicated the toxic impact of the test formulation (Young, 1996).

Anaerobic tests consisted of operating a number of bench-scale anaerobic reactors that received a daily feed of acetic acid plus various amounts of test formulation. The seed cultures for these tests were obtained from full-scale anaerobic reactors. One hundred milliliter samples of seed culture were transferred to 250 mL serum bottles that served as test reactors. Each test reactor was operated by daily adding 1 mL of substrate (120,000 mg COD/L as acetic acid) in a nutrient/mineral/buffer medium. Doses of 10, 20, 50 and 100 mg/L of test formulation (as commercial form) were added to separate reactors. Methane production volumes and rates were measured on subsequent days of operation after feeding the test formulation using an anaerobic respirometer system (AER-200, Challenge Environmental Systems, Inc., Fayetteville, AR). The patterns of methane production relative to that from a control reactor were used to assess the toxic impact of the test formulations.

Table 1. Typical ingredients used in commercial cleaning and disinfecting agents.

Type of Agent	Test ID	Major Ingredients	Typical working solution
Quaternary ammonium disinfectants	A	Alkyl dimethyl benzyl ammonium chloride (5%) + Alkyl dimethyl ethylbenzyl ammonium chloride (5%)	0.2 to 1.2%
	B	Didecyl dimethyl ammonium chloride (3%) + surfactant	0.2 to 1.2%
	C	Alkyl [50% C_{14}, 40% C_{12}, 10% C_{16}] dimethyl benzyl ammonium chloride (5%)	0.2 to 1.2%
Acid cleaners	D	Phosphoric acid (~30%) + surfactants (5%)	1 to 2%
	E	Phosphoric acid (15%) + sulfonated oleic acid (LAS) (5%)	1 to 2%
Basic cleaners	F	Potassium hydroxide (~1%) + sodium metasilicate (~20%)	1 to 2%
	G	Sodium hydroxide (20 to 25%) + sodium gluconate (?%)	1 to 2%
Organic cleaners	H	2-butoxyethanol (3%)	1 to 2%
	I	Oleylether carboxylic acid + Trimethylene di-oleyl diamine + lubricants (glycols)	0.2 to 1.0%
	J	Monofunctional linear alcohol alkoxylates + Polyethoxylated tallow alkylamines + Surfactant + Fatty amines (un-named) (Total < 5%)	0.2 to 1.0%
	K	Octadecenyl propanediamine acetate (6%) + Octadecene amine acetate (2%)+ Coco-propanedimethyl amine (2%) + linear alcohol ethoxylate (10%) + lubricants (glycols, 10%)	0.2 to 1.0%
	L	Triethanolamine (10%) + Ortho-phenylphenate (1.5%) + Ortho-benzyl-p-chlorophenate (1.5%) + lubricants (glycols, 12%)	0.2 to 1.0%
	M	Propylene glycol, monomethyl ether (2%) + Dodecyloxypropyl propanediamine (5%) + Tetradecyloxypropylpropanediamine (3%) + organic acids (3%) + surfactants	0.2 to 1.0%

RESULTS

The first test program consisted of simultaneously testing a quaternary ammonium agent (Formulation **A**) and five other cleaning agents (Formulations **D**, **E**, **F**, **G** and **H** in Table 1). The dosing schedule was as follows.

Formulation	Daily dose, mg/L (as Commercial formulation)
A	50
D	50
E	100
F	100
G	100
H	50

Hourly gas production measurements for Days 1 and 2 showed no significant difference between reactors (Figure 1A). However, by Days 7 and 8, Formulation **A** showed a 50% reduction in methane production within four hours (Figure 1B) while all other formulations showed no significant difference from the control.

A composite of all test data is shown in Figure 2 as the gas production in four hours of incubation after dosing versus concentration of test formulation. Formulation **A**, which contained 10% quaternary ammonium compounds by weight, was the only agent the exhibited toxicity. Some agents showed no toxicity up to 400 mg/L and some up to 800 mg/L. The threshold inhibitory concentration for Formulation **A** was then about 50 mg/L as the commercial formulation or 5 mg/L as active agent.

Figure 1. Impact of disinfectant and cleaning agents A, D, E, F, G and H on gas formation in anaerobic reactions after 1 or 2 days (A) and 7 or 8 days (B) of testing.

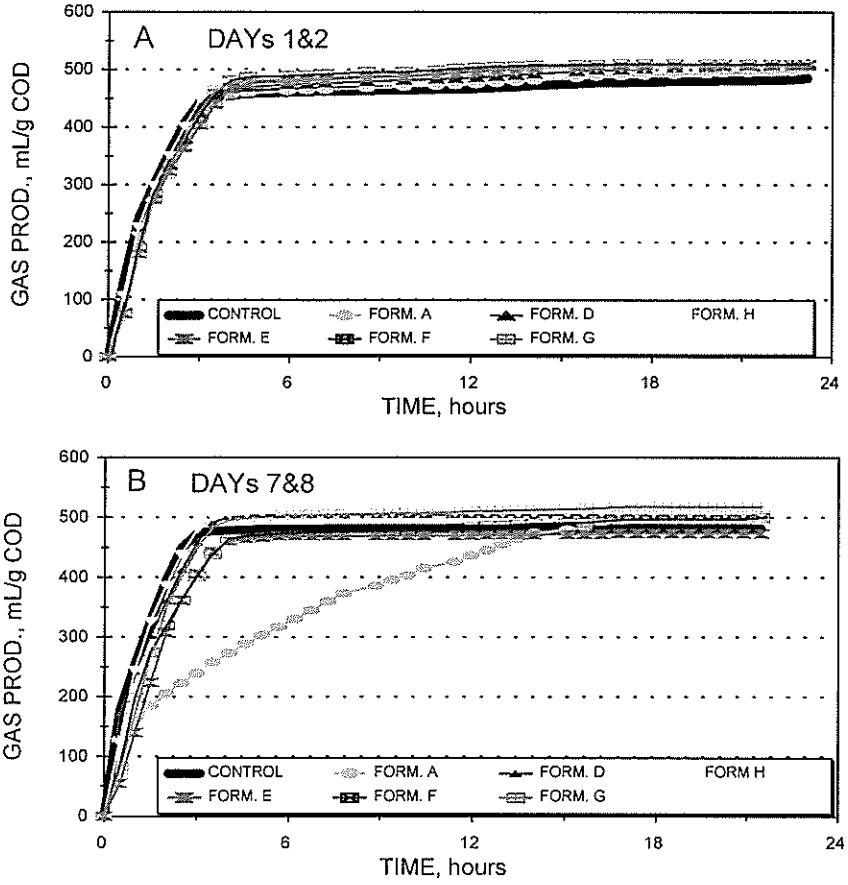
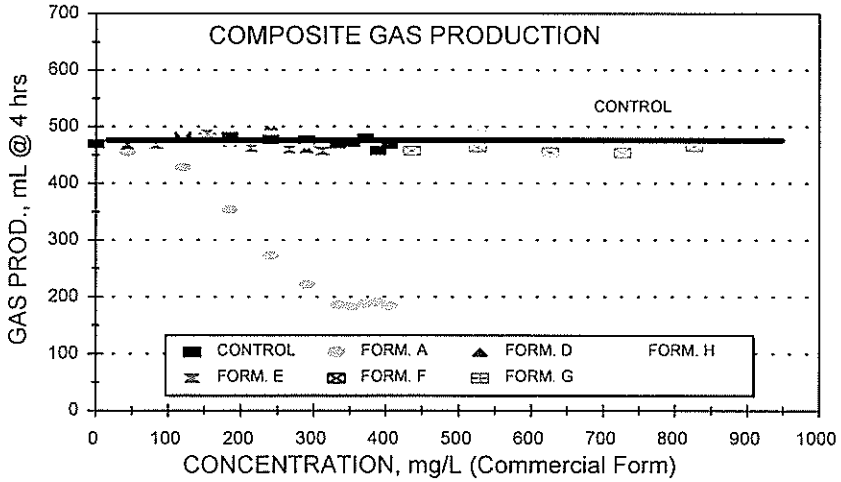


Figure 2. Composite gas production for tests with cleaning agents A, D, E, F, G and H.



A second series involved testing of commercial Formulation **I,** which contained a di-amine as the principal disinfecting agent. In this case, the formulation was fed to the test reactors at rates of 10, 20, 50, and 100 mg/L-d through 21 days of incubation. Results as shown in Figures 3 and 4 as hourly production of methane (ml methane/g COD fed/d) and specific methane production (SMP) rate (mL methane COD/g VSS/day). As indicated in Figure 3, a cumulative dose of 1000 mg/L showed a definite reduction in methane production and SMP on the tenth day of feeding. Figure 4 shows increasing reduction in gas production and SMP with additional feeding in other test reactors through 20 days of testing. The conclusion was that Formulation **I** had a threshold inhibition concentration of 800 mg/L as the commercial product. Since the concentrations of individual chemicals were not known for this formulation, it was not possible to evaluate threshold toxicity on the basis of active ingredients.

A third test was conducted using Formulation **J** which contained a mixture of amines, surfactants, and a lubricant. This formulation was fed to anaerobic test reactors at dose rates of 10, 20, 50 and 100 mg/L-d. Gas production and SMP data after 15 days of incubation (Figure 5), indicated that the threshold toxic concentration was about 100 mg/L as commercial product and 5 mg/L on an active ingredient basis.

A fourth test series involved testing three formulations simultaneously (**B, K** and **L**). As before, dose rates of 10, 20, 50 and 100 mg/L-d were added to anaerobic test reactors. Figure 6 shows methane production and SMPs for Formulation **B**, which contained a quaternary ammonium compound as the active ingredient. The threshold toxic concentration was found to be around 150 mg/L as commercial formulation but about 5 mg/L on the basis of active ingredient. Formulations **K** and **L** also indicated toxic thresholds around 150 mg/L of commercial product but only about 15 mg/L as active agent (Figures 7 and 8). These data indicated that quaternary ammonium compounds were more toxic than amines on an active agent basis. Plots of SMP expressed as a percent of that for the control are shown in Figure 9. These data indicate that, while the three formulations had about the same threshold concentrations on a commercial formulation basis, the toxicity of Formulation **K** increased more rapidly with product concentration than did Formulations **B** and **L**.

Figure 3. Methane production (A) and specific methane production rate (B) for anaerobic reactors receiving various concentrations of test Formulation I after 10 days of exposure to the chemicals.

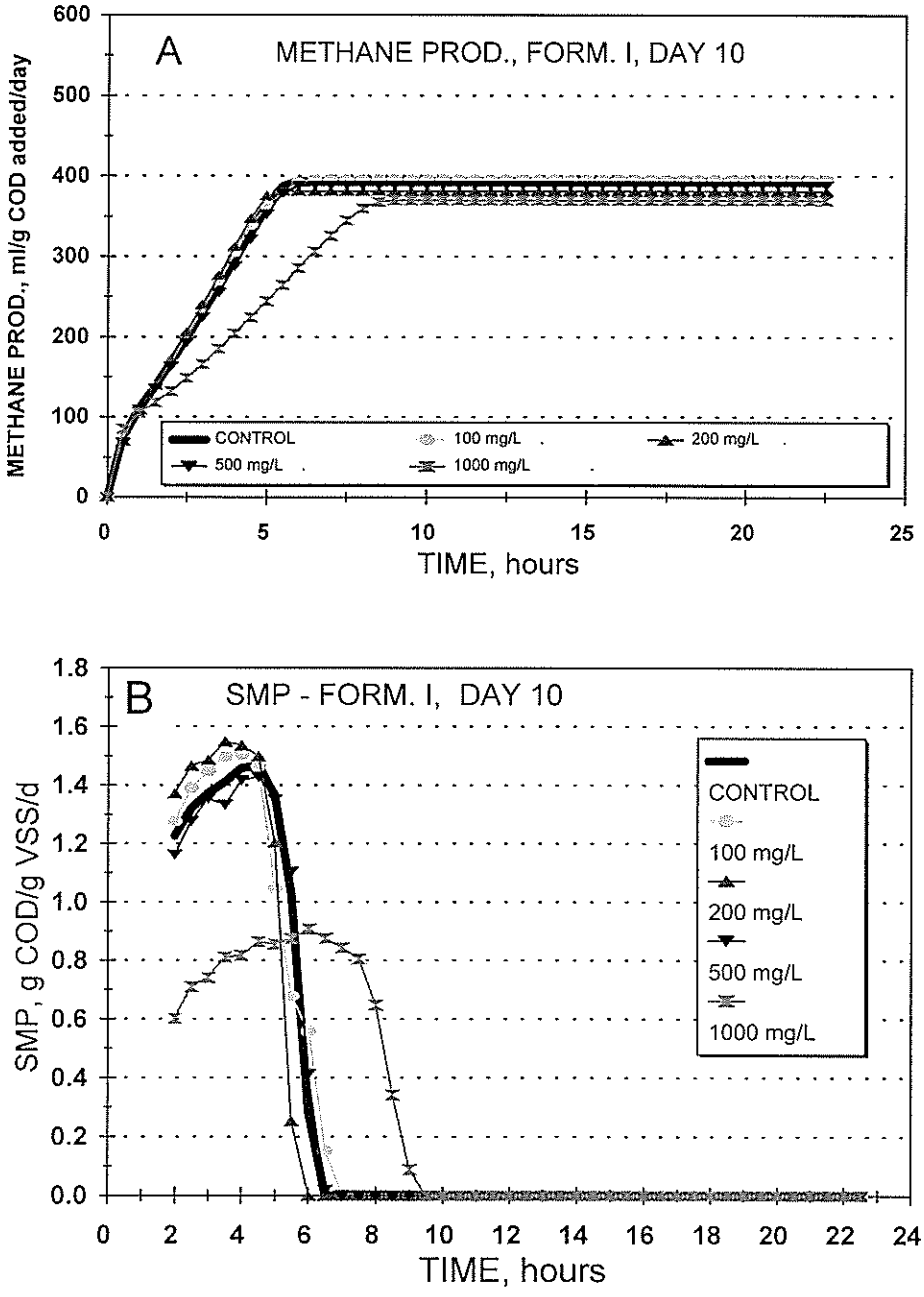


Figure 4. Methane production (A) and specific methane production rate (B) for anaerobic reactors receiving various concentrations of test Formulation I after 20 days of exposure to the chemicals.

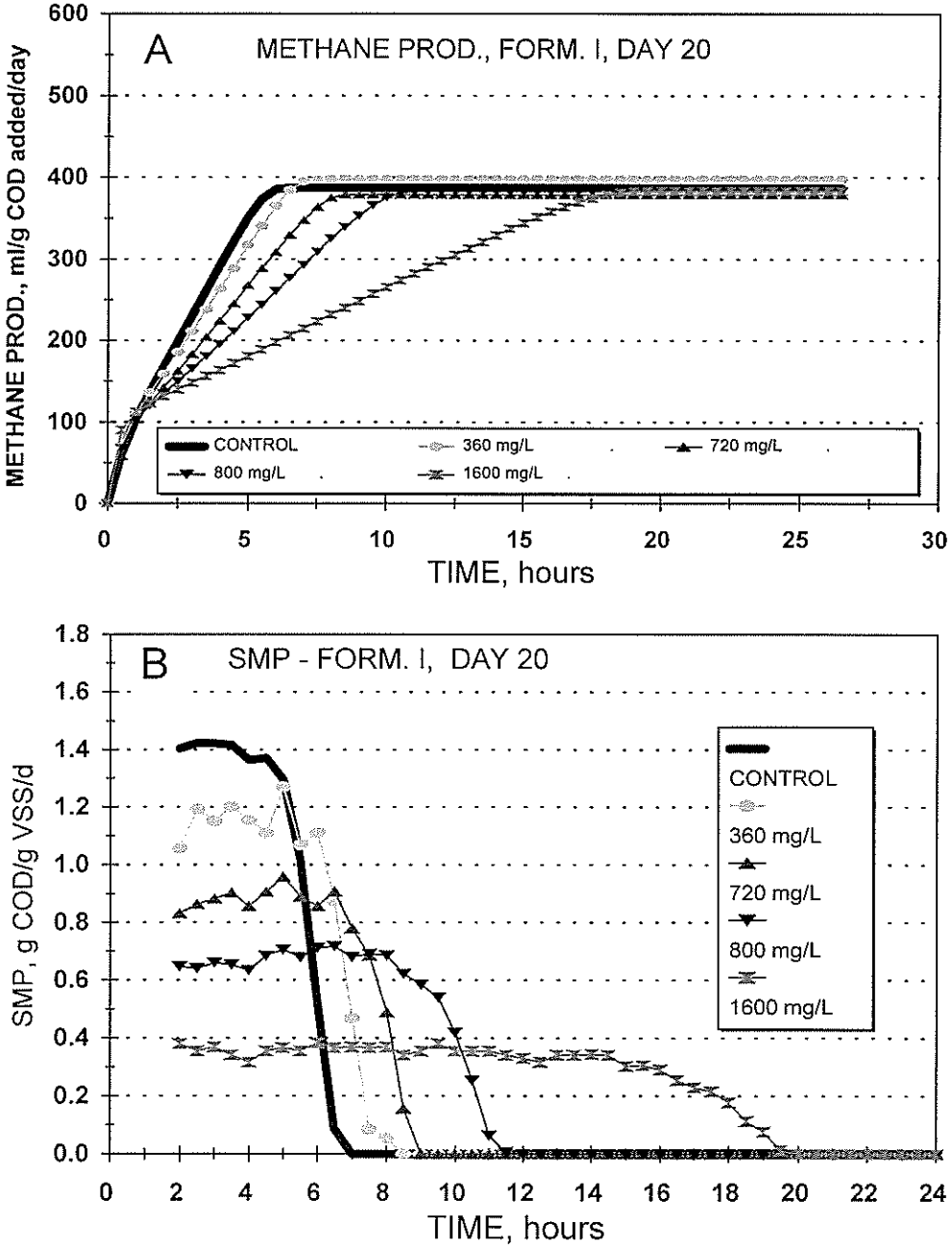


Figure 5. Methane production (A) and specific methane production rate (B) for anaerobic reactors receiving various concentrations of test Formulation J after 15 days of exposure to the chemicals.

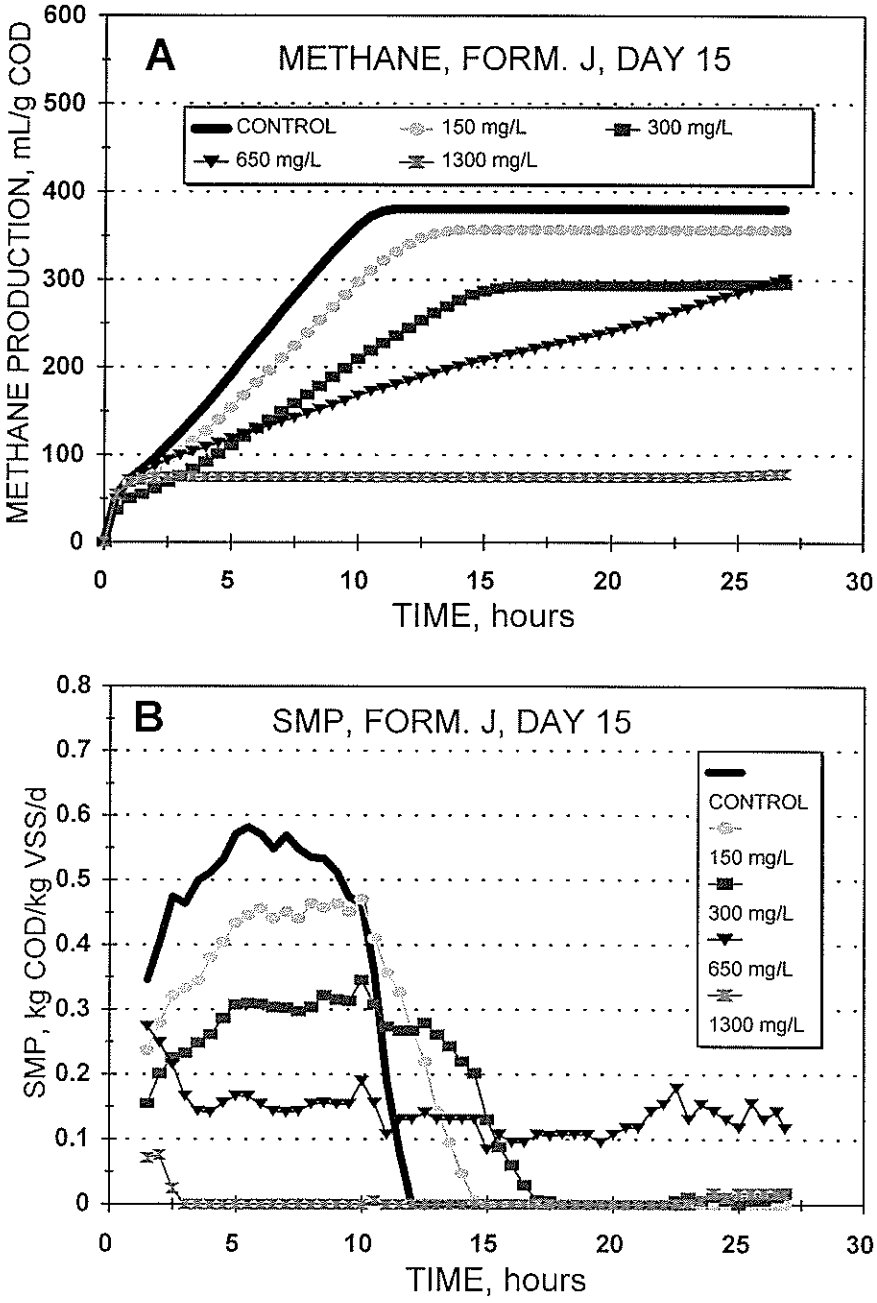


Figure 6. Methane production (A) and specific methane production rate (B) for anaerobic reactors receiving various concentrations of test Formulation B after 15 days of exposure to the chemicals.

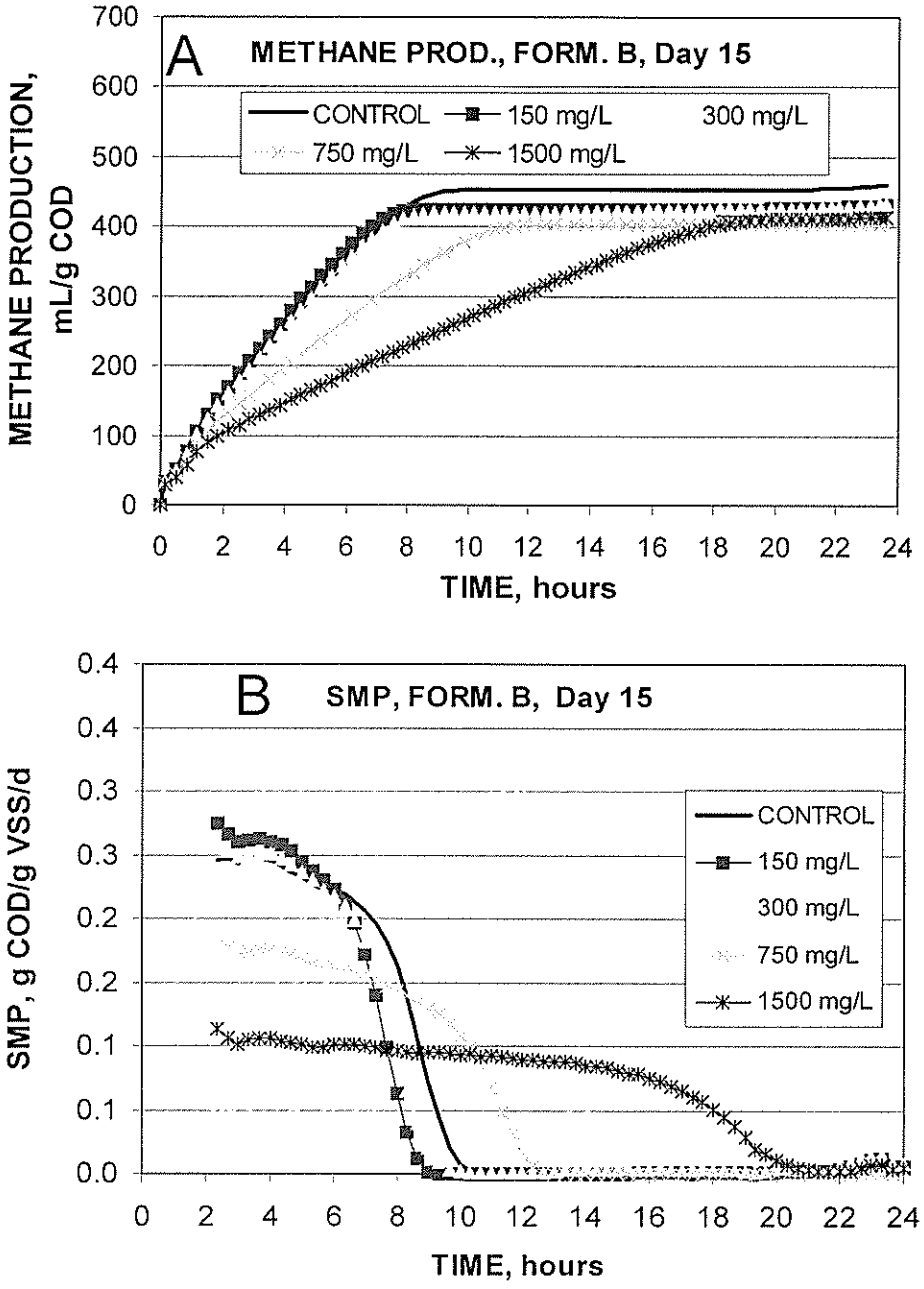


Figure 7. Methane production (A) and specific methane production rate (B) for anaerobic reactors receiving various concentrations of test Formulation K after 13 days of exposure to the chemicals.

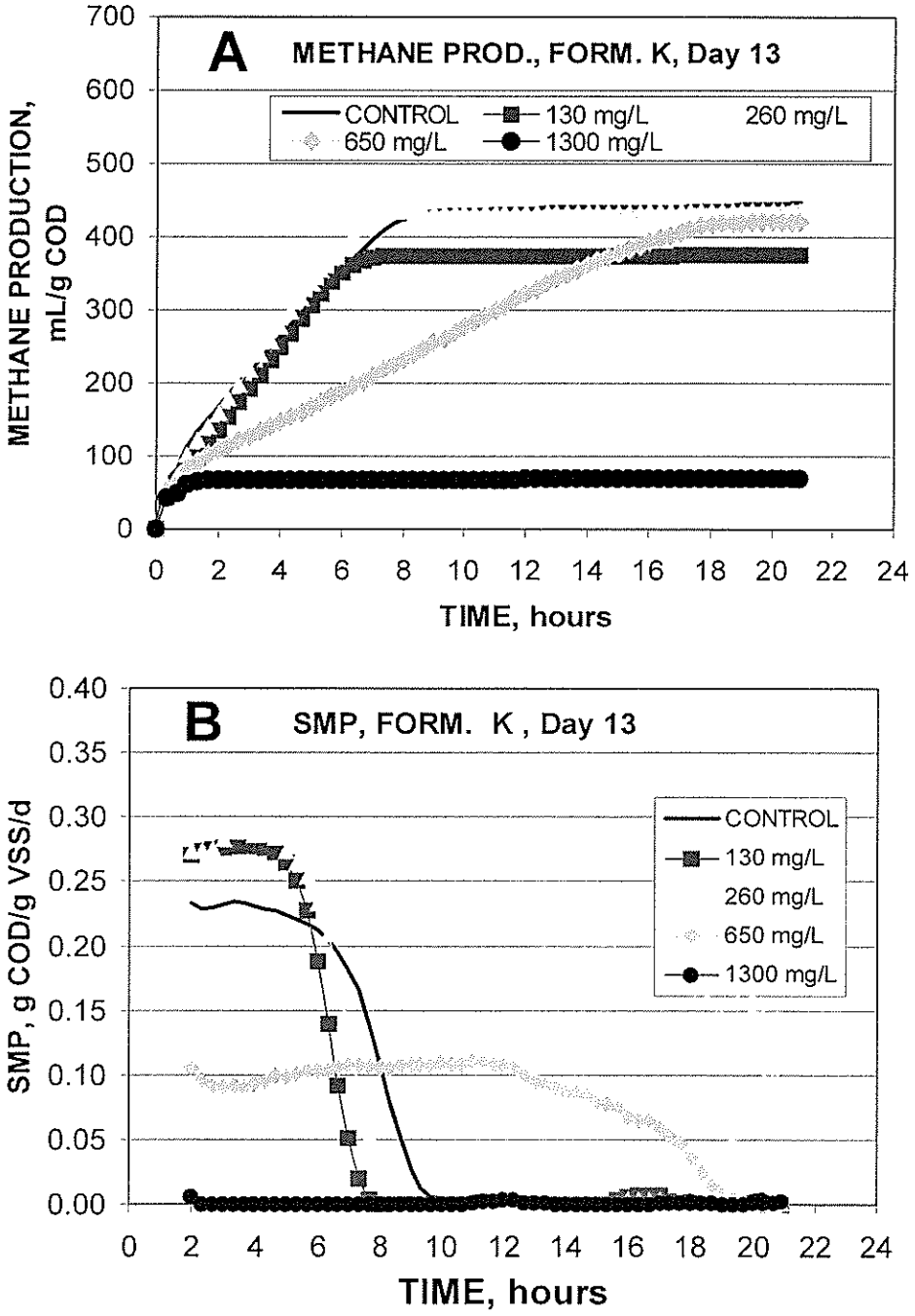


Figure 8. Methane production (A) and specific methane production rate (B) for anaerobic reactors receiving various concentrations of test Formulation L after 15 days of exposure to the chemicals.

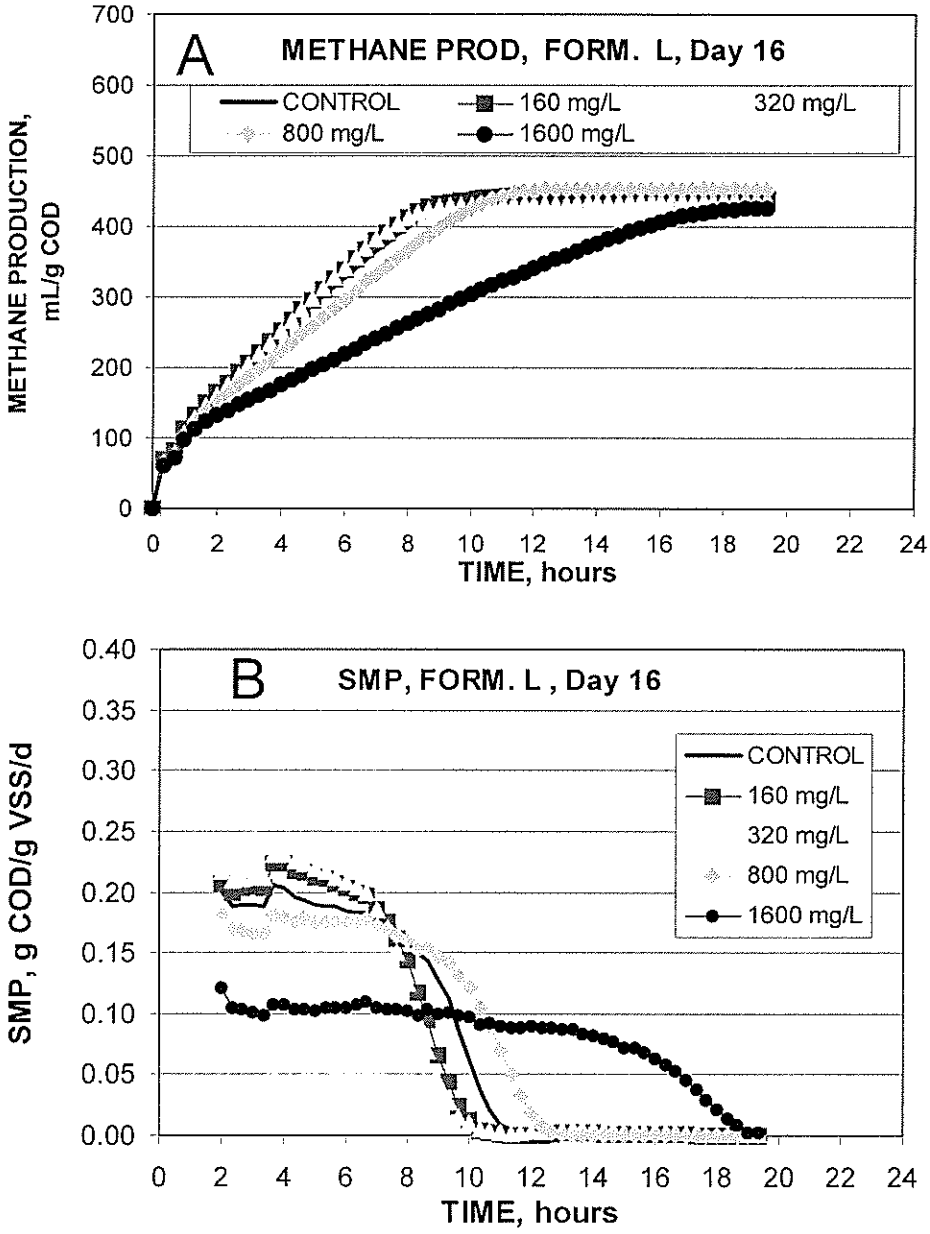
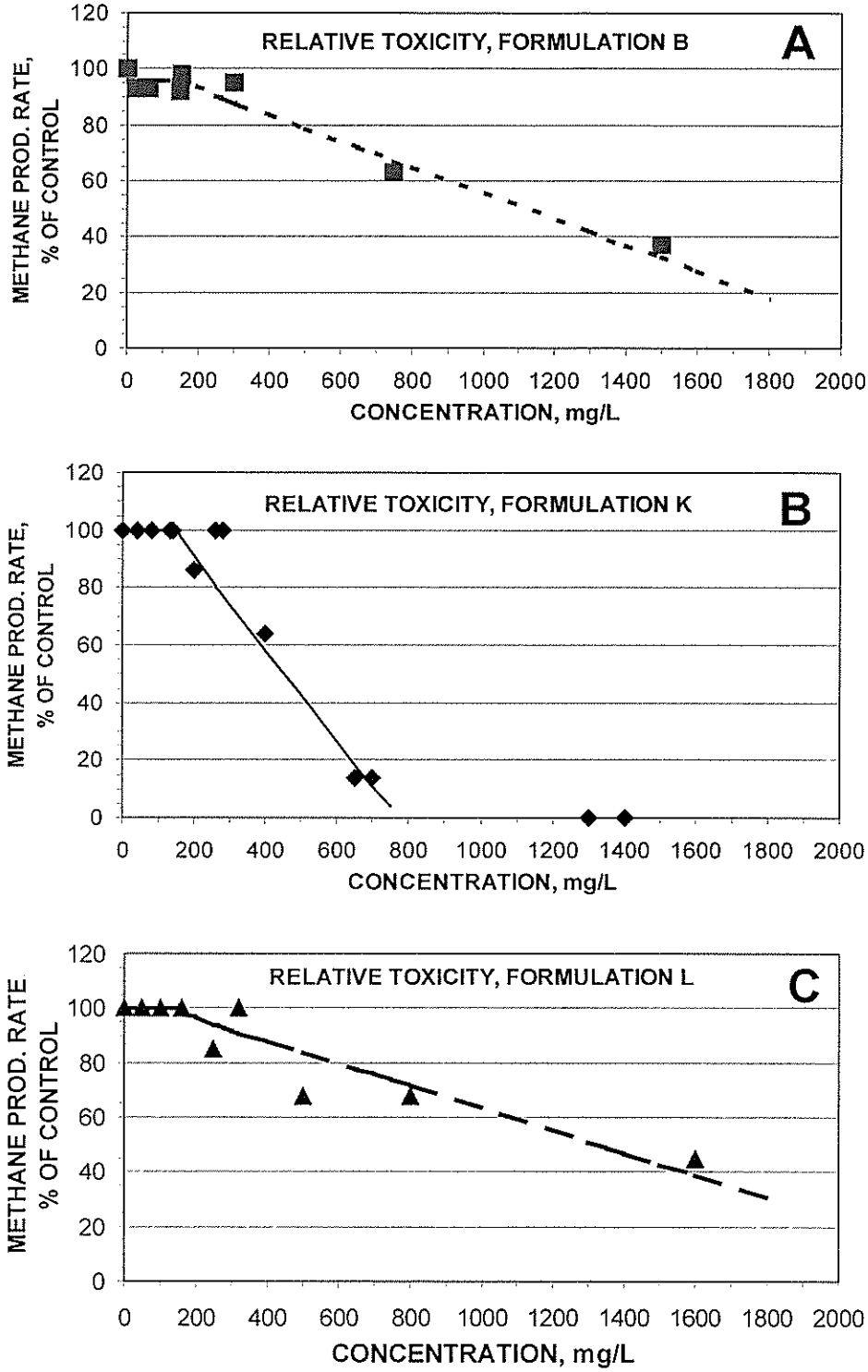


Figure 9. Maximum specific methane production rates for Formulations B, K and L expressed as a percentage of the maximum rate for the control reactor.



In yet another test case, an aerobic treatment plant was experiencing noticeable loss of treatment performance – especially a reduction in nitrification – on weekends and Mondays. A suspected cause was the influx of a toxic agent on weekends. A survey of industries indicated that end-of-week CIP operations at a local dairy used large amounts of cleaning agents containing quaternary ammonium compounds (Formulation **C** in Table 1). Consequently, tests were conducted by dosing aerobic cultures with various amounts of Formulation **C** and monitoring oxygen uptake over a 120-hr period using aerobic respirometers. Tests doses were 20, 50, 100, 200 and 400 mg/L as commercial formulation or 2, 5, 20, 20 and 40 mg/L as the quaternary ammonium ingredient. A nitrification inhibitor (TCMP, APHA, 1998) was added to one set of reactors to allow identification of the effect of the chemical on nitrification. The seed culture was activated sludge from the subject treatment plant.

Figure 10A shows the carbonaceous oxygen uptake as measured in the reactors containing TCMP. These data indicate a suppression of carbonaceous oxygen uptake during the first 24 hours of incubation (Figure 10B). This observation indicated that the quaternary ammonium compound inhibited carbonaceous reactions at concentrations as low as 10 mg/L. However, recovery occurred in all test reactors within 24 hours in incubation, thereby indicating that the quaternary ammonium compound was detoxified. Since essentially no oxygen uptake was associated with this recovery, the detoxification was likely due to hydrolysis of the quaternary ammonium molecule without oxidation.

Oxygen uptake in all quat-dosed samples began to increase around 48 hours of incubation with a resultant rapid rise in oxygen uptake rate (Figure 10A). This oxygen uptake was associated with oxidation of the products of hydrolysis of the quaternary ammonium compound. Subtracting the oxygen uptake for the control (0 mg/L quat) from that for the test samples showed that the oxygen uptake associated with the quaternary ammonium compounds closely approached the theoretical oxygen demand add to the test reactors (Figure 11A).

Subtracting oxygen uptake for the samples containing TCMP from those that contained no TCMP produced the oxygen uptake associated with nitrification. As indicated in Figure 11B, nitrification occurred readily in the control sample and approached the theoretical NOD. Only partial nitrification occurred in the samples at quaternary ammonium concentrations of 2 and 5 mg/L. No nitrification occurred in samples receiving more than 10 mg/L of the quaternary ammonium compound. Therefore, the threshold concentration to nitrification on an active chemical basis was less than 2 mg/L.

The above tests indicated that the quaternary ammonium compounds were possibly – if not likely – the cause of the reduced performance of the POTW during weekends and Mondays. By Tuesday, the quaternary ammonium compounds were degraded and plant performance was restored until the next weekend.

Figure 10. Oxygen uptake for wastewater samples receiving various concentrations of a commercial formulation containing a quaternary ammonium compound. A = oxygen uptake for the carbonaceous reaction through 24 hours of incubation; B = oxygen uptake through 100 hours of incubation.

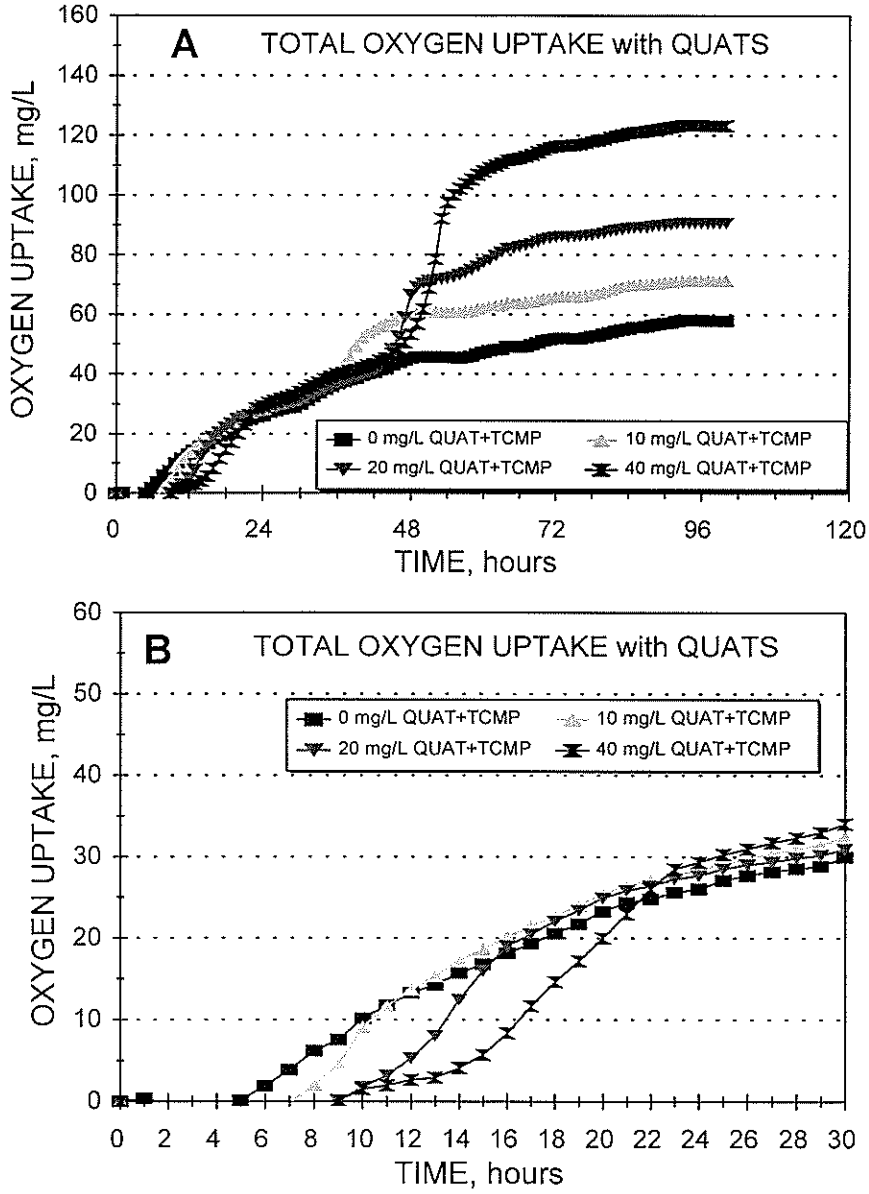
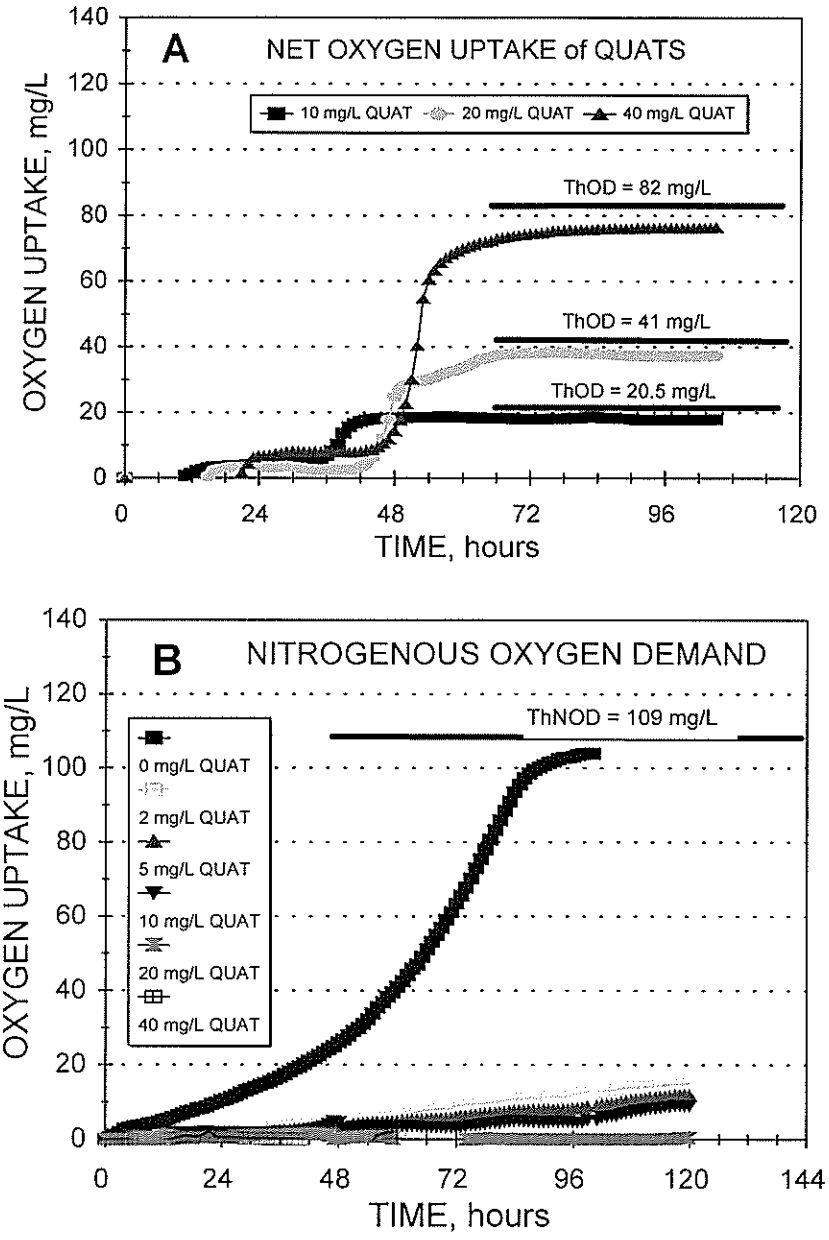


Figure 11. Oxygen uptake associated with biodegradation of the quaternary ammonium compound in Formulation C (A) and oxygen uptake associated with nitrification occurring at various doses of Formulation C (B).



CONCLUSIONS

- Cleaning and disinfecting agents that are used commonly in food and beverage processing industries can cause significant negative impact on biological wastewater treatment processes.

- Anaerobic processes seem to be most vulnerable to toxic effects from these compounds because of the low threshold toxicity to methane forming bacteria. The most toxic formulations seem to be those containing quaternary ammonium compounds. Those containing alkyamines are only slightly less toxic.

- Quaternary ammonium compounds can inhibit carbonaceous reactions but detoxification and recovery seem to occur readily with complete biodegradation of the toxic chemical agent.

- Nitrification can be adversely affected at quaternary ammonium compound concentrations as low as 2 mg/L.

- The most severe situations would be those in which the agents are discharged in slug doses that cause toxic thresholds to be exceeded. While recovery may occur, temporary decreases in effluent quality may be experienced until the compounds are degraded.

REFERENCES

America Public Health Association (1998) "Standard Methods for the Examination of Water and Wastewater" Ed. 20, APHA, New York.

Young, J. C. (1996) Fundamentals of Respirometery: Instrument Types and Basis of Operation, *Proceeding of the 51st Purdue Industrial Waste Conference*, Ann Arbor Press, Inc., Chelsea, MI 48118.

Attachment C: Permits

Associated Milk Producers, Inc.

Crenlo, LLC

Gauthier Industries, Inc.

International Business Machines (IBM)

Olmsted County Environmental Resources Department – Kalmar Landfill

Kemps, LLC – Ice Cream

Kemps, LLC – Milk Plant

Kerry Ingredients

Mayo Clinic Campus

Mayo Clinic – Incinerator

MPCA Oronoco Landfill Leachate

Olmsted County Environmental Resources Department – Waste to Energy

Pace Dairy Foods Company

Seneca Foods Corporation

Saint Mary's Hospital

Textile Care Services

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No:05N-22

This permit is issued to:

Associated Milk Producers Inc.

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of March, 2017

Expiration Date: 28st day of February, 2022

Issued By: _____ Date:_____ Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Associated Milk Producers Inc.

Mailing Address: 700 1st Avenue SE
Rochester, MN 55904

Address of Premises: 700 1st Avenue SE
Rochester MN 55904

Contact Name: Steve Voss

Title: Division Manager

Address: 700 1st Avenue SE
Rochester, MN 55904

Phone:(507)282-7401 FAX: (507)529-9883

Email: vosss@ampi.com

1.1. SIC CODE: Standard Industrial Classification Code:2022,2023

1.2. DESCRIPTION OF PREMISES:

Products	Maximum Quantity Per Day
Cheese	210,000 ppd
Ice Cream Mix	599,000 ppd
Lactose Powder	66,000 ppd
Fluid Whey	1,728,230 lbs

1.3. DESCRIPTION OF PROCESS FLOW:

1.4. DESCRIPTION OF PRETREATMENT PROVIDED:

2.0. INTERIM LIMITS AND MONITORING REQUIREMENTS.

Effective Until March 31, 2017

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT				
PARAMETER	DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING FREQUENCY	SAMPLE TYPE
FLOW MGD	NA	0.230	Continuous	Totalizer
PH	5 < pH < 11	NA	Continuous	Recorder
$CBOD_5$ ppd	12000	8700	Daily **	24 Hour Composite
TSS ppd	3600	2200	Daily **	24 Hour Composite
TP ppd	250	165	Daily **	24 Hour Composite

Abbreviation of terms found in table 2.0

$CBOD_5$	Five Day Carbonaceous Biochemical Oxygen Demand	TP	Total Phosphorus
		ppd	Pounds per Day
TSS	Total Suspended Solids	NA	Not Applicable

** Daily samples required in table 2.0 are to be collected by the user in a properly preserved container for analysis by the Water Reclamation Plant.

3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0 of this permit beginning March 1, 2012 and lasting through February 28, 2017. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: A historical ratio of actual TOC to actual $CBOD_5$ measurements will be applied to actual TOC measurement to calculate a $CBOD_5$ loading for the purpose of determining compliance with the limits specified in table 2.0.

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0 shall be taken at the following location(s): The discharge pipe and or pipes as they exit the final lift station located in the Northwest Corner of the Pump Room located in the truck wash building located on the North West side of the site.

3.4. MONTHLY AVERAGES: For the purposes of determining compliance with the monthly limits specified in section 2.0 an average of all daily loadings during any given calendar month will be used.

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: The users shall submit a written reports on a quarterly basis. Due April 30, July 31, October 31 and January 31. These quarterly reports are to update the progress towards waste reduction with the goal of meeting a BOD monthly limit of 6600 pounds per day. Reports should include any process evaluations changes, waste stream flow and loading evaluations. Prior to the expiration of this permit AMPI will apply for a MNTAP intern and or services or equivalent. All reports must be signed by a third party Professional Engineer registered in the State of MN.

3.7 REQUIRED PRETREATMENT: pH adjustment shall be operated at all times to control high pH discharges.

3.8 INSTRUMENTATION: In accordance with section 4.10 of this permit and the monitoring requirements required in section 2.0 the user shall calibrate the pH metering system monthly using a seven (neutral) and at least one other certified standard buffer solution. A record of such calibrations shall include the buffers used, the initial reading before adjustment and the final reading after calibration at the known pH's used. Records shall be kept for a period of at least three years.

3.9 SPILL CONTROL PLAN By March 31, 2013 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms. The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self-monitoring.

4.2. COMPOSITE SAMPLES For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self-monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0 of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non-transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 1C-22

This permit is issued to:

Crenlo LLC

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Crenlo LLC

Mailing Address: 1600 4th Avenue NW
Rochester, MN 55901

Address of Premises: 2501 Valleyhigh Drive NW
Rochester, MN 55901

Contact Name: Jim Krahn

Title: EHS Specialist Manager

Address: 2501 Valleyhigh Drive NW
Rochester, MN 55901

Phone:(507) 287-3612 FAX: (507) 280-2360

E-mail JKrahn@Crenlo.com

1.1. SIC CODE: 3499, 3469, 3523, 3531

1.2. DESCRIPTION OF PREMISES: Production of tractor cabs (100/day) and electronic enclosures (120/day).

1.3. DESCRIPTION OF PROCESS FLOW: Manufactured cabs and enclosures are cleaned with alkaline based cleaners in an e-coat system, cabs and parts are dipped in a phosphoric acid bath. Conversion coat is applied prior to e-coat primer application and/or powder top coat application. No chrome sealers are used. The Powder top Coat is applied directly to metal components. Iron phosphate is utilized in the e-coat system and a phosphate free technology is utilized in the enclosure paint system.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: E-coat area- the process water that does not go directly to drain is pH adjusted and any precipitated is sent to a filter press.

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER	DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING	FREQUENCY	SAMPLE TYPE
FLOW MGD			Continuous	Totalizer	
PH	5 < pH < 11	NA			
Cadmium mg/l	0.26	0.23	3 samples per 6 months		24 Hour Composite
Chromium mg/l		1.71	1.54	3 samples per 6 months	24 Hour Composite
Copper mg/l	1.0	1.0	3 samples per 6 months		24 Hour Composite
Lead mg/l	0.43	0.39	3 samples per 6 months		24 Hour Composite
Molybdenum mg/l		1.43	3 samples per 6 months		24 Hour Composite
Nickel mg/l	2.38	2.14	3 samples per 6 months		24 Hour Composite
Silver mg/l	0.24	0.22	3 samples per 6 months		24 Hour Composite
Zinc mg/l	1.48	1.33	3 samples per 6 months		24 Hour Composite
Cyanide mg/l	0.65	0.58	1 sample per 6 months **		Grab

Abbreviation of terms that may be found in table 2.0

CBOD5	Five Day Carbonaceous Biochemical Oxygen Demand
mg/l	Milligrams per liter
NH4-N	Ammonia Nitrogen
RCO	Rochester Code of Ordinances
TP	Total Phosphorus
TSS	Total Suspended Solids
ppd	Pounds per Day

** After the first six months Crenlo may request a waiver of the cyanide sampling requirement pursuant to 40 CFR 403.12(e)(2). If the waiver is approved by the WRP, Crenlo will have to certify the following statement on each semi annual report required in section 3.6 of this permit:

Based on my inquiry of the person or persons directly responsible for managing compliance with the Pretreatment Standard for 40CFR433, I certify that, to the best of my knowledge and belief, there has been no increase in the level of cyanide in the wastewaters due to the activities at the facility since filing of the last periodic report under 40CFR 403.12(e)(1).

3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0 of this permit beginning April 1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: NA

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0 shall be taken at the following location(s): The manhole located near the flagpole straight out from the vent in the wall on the east side of the building.

3.4. MONTHLY AVERAGES: For the purposes of determining compliance with the monthly limits specified in section 2.0 of this permit the users must take at least three samples within a two week period specified by the City Engineer.

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: A self monitoring report shall be submitted Semi Annually according to the following schedule:

Frequency	Period	Due Date
Semi-Annually	Jan 1 - Jun 30	Jul 31
	Jul 1 - Dec 31	Jan 31

Reports shall include all required and any other self monitoring of discharges.

3.7 REQUIRED PRETREATMENT: Any batch discharge of chemicals shall be pH neutralized prior to disposal. A log of all batch discharges shall be kept and included with each semi-annual report.

3.8 INSTRUMENTATION: NA

3.9 Spill Control Plan: By March 31, 2018 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms. The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION: The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES: For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0 of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if

required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premises to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 23C-22

This permit is issued to:

Gauthier Industries Inc.

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Gauthier Industries Inc.

Mailing Address: P.O. Box 6700
Rochester, MN 55903

Address of Premises: 3105 22nd St. NW
Rochester, MN 55901

Contact Name: Mike Jensen

Title: President

Address: 3105 22nd St. NW
Rochester, MN 55901

Phone: (507) 252-3167 FAX: (507) 289-6883

E-mail: mikejensen@gauthind.com

1.1. SIC CODE: 3479

1.2 DESCRIPTION OF PREMISES: Powder Coat finishing of metal parts.

1.3 DESCRIPTION OF PROCESS FLOW: Six-stage washer with alkaline stage, RO rinse stage, iron phosphate or zirconium transitional metal conversion. RO rinse stage, RO rinse, RO Halo rinse.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: Tanks are pH neutralized prior to disposal (about twice per year). A cyclone filter removes sludge from the first stage.

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER DAILY LIMITATION MONTHLY LIMITATION SAMPLING FREQUENCY SAMPLE TYPE

FLOW MGD			Continuous	Totalizer
TP mg/l			Semi Annually	24 Hour Composite
Cadmium mg/l	0.11	0.07	Semi Annually	24 Hour Composite
Chromium mg/l		1.71	1.71 Semi Annually	24 Hour Composite
Copper mg/l	1.00	1.00	Semi Annually	24 Hour Composite
Lead mg/l	0.43	0.43	Semi Annually	24 Hour Composite
Nickel mg/l	2.38	2.38	Semi Annually	24 Hour Composite
Silver mg/l	0.43	0.43	Semi Annually	24 Hour Composite
Zinc mg/l	1.48	1.48	Semi Annually	24 Hour Composite
Cyanide mg/l	0.65	0.65	Semi Annually **	4 Grab samples

Abbreviation of terms that may be found in table 2.0

TP	Total Phosphorus
mg/l	Milligrams per liter

** After the first six months Gauthier may request a waiver of the cyanide sampling requirement pursuant to 40 CFR 403.12(e)(2). If the waiver is approved by the WRP, Gauthier will have to certify the following statement on each semi annual report required in section 3.6 of this permit:

Based on my inquiry of the person or persons directly responsible for managing compliance with the Pretreatment Standard for 40CFR433, I certify that, to the best of my knowledge and belief, there has been no increase in the level of cyanide in the wastewaters due to the activities at the facility since filing of the last periodic report under 40CFR 403.12(e)(1).

3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0 of this permit beginning April 1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: NA

3.3 SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0 shall be taken at the following location(s): The floor drain which collects the discharge from all stages of the washer and is located below the multi-stage washer. Any point after that may be used provided that no non-process wastewater has been introduced into the system prior to the point of sampling.

3.4. MONTHLY AVERAGES: For the purposes of determining compliance with the monthly limits specified in section 2.0 an average of all samples collected during any 30-day period will be used.

3.5. COMBINED WASTE STREAM FORMULA: The combined waste stream formula (CWF) should be applied for calculating alternative pollutant limits at industrial facilities where the regulated process effluent is mixed with other wastewater (either regulated or non-regulated) prior to treatment.

3.6. REPORTS: A self monitoring report shall be submitted semi-annually according to the following schedule:

Frequency	Period	Due Date
Semi-Annually	Jan 1 - Jun 30	Jul. 31
	Jul 1 - Dec 31	Jan 31

Reports shall include all required and any other self monitoring of discharges.

3.7 REQUIRED PRETREATMENT: All tanks shall be skimmed to remove oils and pH neutralized prior to discharging. A record of all batch discharges shall be kept including the date, final pH and person performing the operation.

3.8 INSTRUMENTATION: NA

3.9 SPILL CONTROL PLAN: By March 31, 2018 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms. The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION: The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES: For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0 of this permit, whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premises to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No:2N-22

This permit is issued to:

International Business Machines

and permits the discharge of industrial and sanitary wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data

2.0 Discharge limits

3.0 Specific Conditions

4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April, 2017

Expiration Date: 31st day of March, 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: International Business Machines Corp.

Mailing Address: Dept. KMWA/Bldg. 114-1

3605 Highway 52 North

Rochester, MN 55901

Address of Premises: 3605 Highway 52 North

Rochester, MN 55901

Contact Name: Michael Heiling

Title: Environmental Engineer

Address: Dept. KMW / Bldg. 114-1

3605 Highway 52 North

Rochester, MN

Phone: (507) 253- 2489 FAX: (507) 253-7994

E-mail: mheiling@us.ibm.com

1.1. SIC CODE: 3571

1.2. DESCRIPTION OF PREMISES: IBM manufactures electronic computers.

1.3. DESCRIPTION OF PROCESS FLOW: The IBM site has two (2) separate collection systems; one for sanitary wastewater and one for industrial wastewater. Sanitary wastewater originates from a site population of about 2,500. Sources are restrooms and cafeteria. Sanitary wastewater is not treated prior to discharge through the HWY 52 manhole. Average daily flow for 2015 was 41,400 gallons/day. Industrial wastewater is collected separately from sanitary. Water is not routinely used in the production or assembly of computing equipment. Wastewater is generated by miscellaneous facilities operations and some development activity. The onsite treatment plant function is only able to remove metals and operates in batch treatment mode averaging 2 batches per month, each about 25,000 gallons/day. Treated industrial wastewater is discharged through the Bldg. 333 manhole.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: Process wastewater is treated by lime precipitation, flocculation and clarification to remove heavy metals.

2.0. LIMITS AND MONITORING REQUIREMENTS.

Process wastewaters discharged from building 333.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER	DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING FREQUENCY	SAMPLE TYPE
Flow MGD		Per Batch	Tank Volume	
Cadmium mg/l	0.26	Semi Annual	Batch Composite	
Chromium mg/l	1.71	Semi Annual	Batch Composite	
Copper mg/l	1.00	Semi Annual	Batch Composite	
Lead mg/l	0.43	Semi Annual	Batch Composite	
Mercury mg/l	0.009	Semi Annual	Batch Composite	
Molybdenum mg/l	1.43	Semi Annual	Batch Composite	
Nickel mg/l	2.38	Semi Annual	Batch Composite	
Zinc mg/l	1.48	Semi Annual	Batch Composite	

Abbreviation of terms found in Table 2.0

mg/l Milligrams per liter

Samples collected for compliance reporting shall be analyzed using methods approved in 40 CFR 136.

Batch composite shall consist of at least three aliquots to represent the beginning, middle and end of the discharge.

2.0. LIMITS AND MONITORING REQUIREMENTS.

Non-Process and sanitary wastewaters discharged via Highway 52.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER	DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING FREQUENCY	SAMPLE TYPE
Flow MGD		Continuous	Totalizer	
Cadmium mg/l	0.26	Annual	24 Hour Composite	
Chromium mg/l	1.71	Annual	24 Hour Composite	
Copper mg/l	1.00	Annual	24 Hour Composite	
Lead mg/l	0.43	Annual	24 Hour Composite	
Mercury mg/l	0.009	Annual	24 Hour Composite	

Molybdenum mg/l	1.43		Annual	24 Hour Composite
Nickel mg/l	2.38		Annual	24 Hour Composite
Zinc mg/l	1.48		Annual	24 Hour Composite

Abbreviation of terms found in Table 2.0

mg/l Milligrams per liter

3.0. SPECIFIC CONDITIONS

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0 of this permit beginning April 1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: A historical ratio of actual TOC to actual CBOD5 measurements will be applied to actual TOC measurement to calculate a CBOD5 loading for the purpose of determining compliance with the limits specified in table 2.0.

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0 shall be taken at the following location(s): For sampling of the process flow, samples shall be taken from the Building 315 location. The Building 315 discharge manhole is located southeast of Building 333 and north of the gravel access road and is identified as manhole #16 in Appendix A. Process flow samples may also be collected from the clarifier discharge line. For the Highway 52 discharge, sampling shall take place at the vault located on the east side of the perimeter road east of Building 030 which is identified as the fire system pump house in Appendix B.

3.4. MONTHLY AVERAGES: For the purposes of determining compliance with the monthly limits specified in section 2.0 an average of all sample results obtained during any given calendar month will be used.

3.5. COMBINED WASTE STREAM FORMULA: The combined waste stream formula (CWF) should be applied for calculating alternative pollutant limits at industrial facilities where the regulated process effluent is mixed with other wastewater (either regulated or non-regulated) prior to treatment.

3.6. REPORTS: A self monitoring report shall be submitted annually according to the following schedule:

Frequency	Period	Due Date
Semi Annually	January 1 – June 30	July 31
	July 1 – December 31	January 31

Reports shall include all required and any other self-monitoring of discharges.

3.7. REQUIRED PRETREATMENT: The user shall maintain all pretreatment devices and structures and operate them when needed as specified in section 1.4 of this permit.

3.8. INSTRUMENTATION: In accordance with section 4.10 of this permit and the monitoring requirements required in section 2.0 the user shall calibrate the flow metering system at least annually. Records shall be kept for a period of at least three years.

3.9. SPILL CONTROL PLAN: By March 31, 2018 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms. The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION: The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES: For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling, the name of the person conducting the sampling, the dates and times of all analyses, the name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0 of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

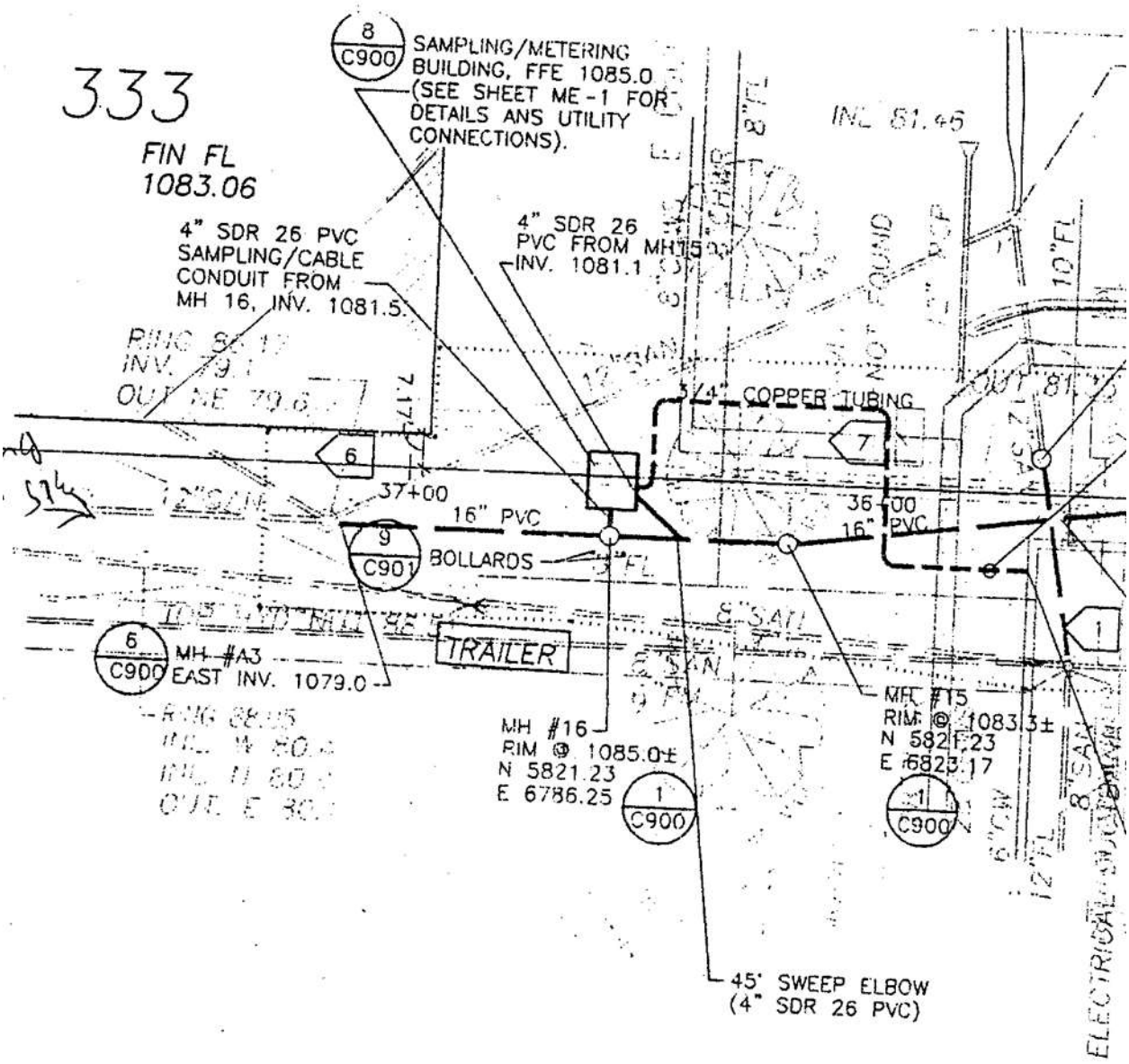
4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premises to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

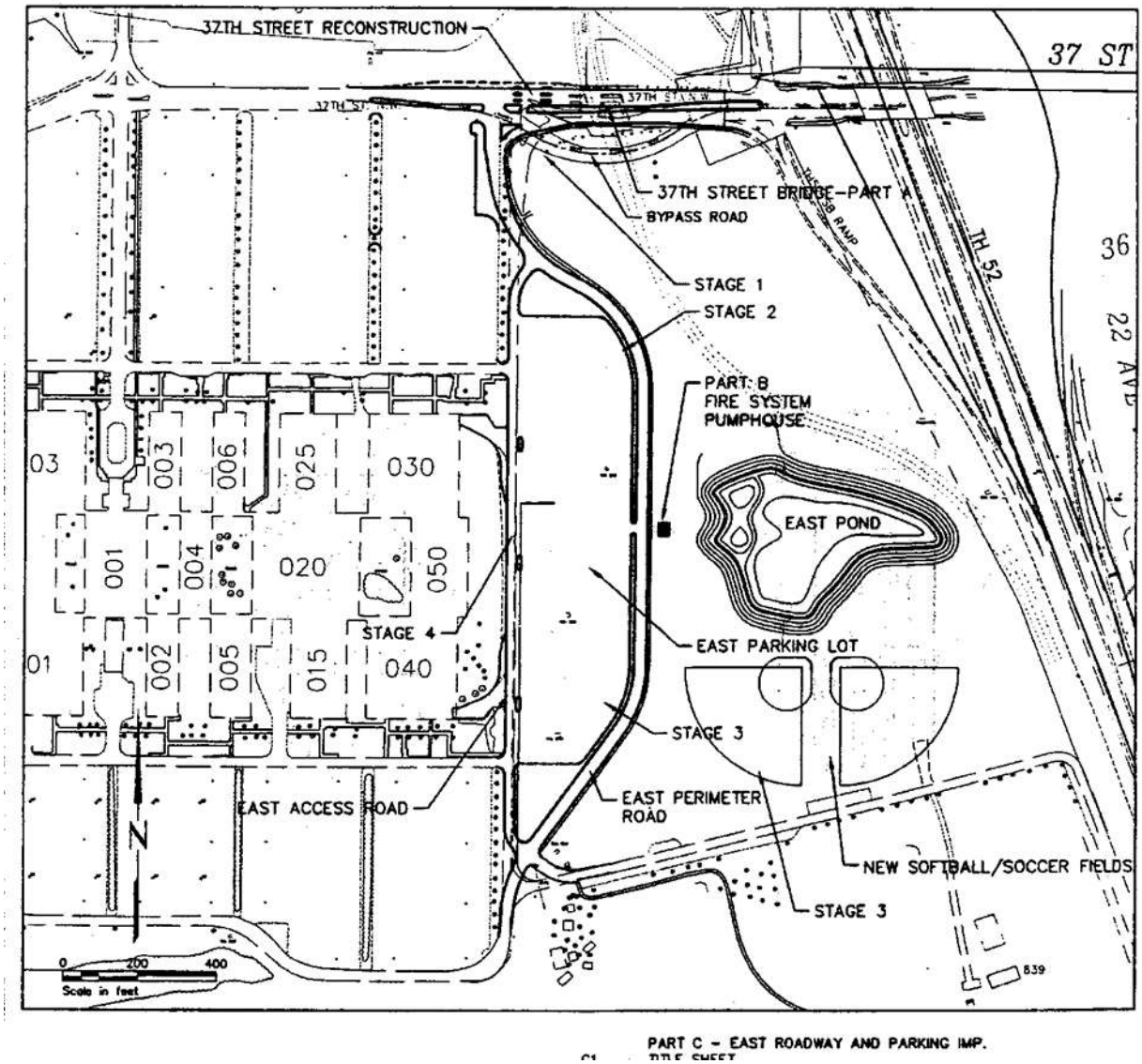
4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.


8
C900
SAMPLING/METERING BUILDING, FFE 1085.0 (SEE SHEET ME-1 FOR DETAILS ANS UTILITY CONNECTIONS).
333
FIN FL
1083.06
4" SDR 26 PVC SAMPLING/CABLE CONDUIT FROM MH 16, INV. 1081.5.
4" SDR 26 PVC FROM MH 15 INV. 1081.1
3/4" COPPER TUBING
37+00
36+00
16" PVC
16" PVC
9
C901
BOLLARDS
TRAILER
6
C900
MH #A3
EAST INV. 1079.0
MH #16
RIM @ 1085.0±
N 5821.23
E 6786.25
1
C900
MH #15
RIM @ 1083.3±
N 5821.23
E 6823.17
45° SWEEP ELBOW
(4" SDR 26 PVC)



PART C – EAST ROADWAY AND PARKING IMP.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 14N-22

This permit is issued to:

Olmsted County Environmental Resources Department – Kalmar Landfill

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April, 2017

Expiration Date: 31st day of March, 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Olmsted County Environmental Resources Department

Mailing Address: 2122 Campus Drive SE
Suite 200
Rochester, MN 55904

Address of Premises: 7401 19th Street NW
Rochester, MN 55901

Contact Name: Brian Grzanek

Title: Solid Waste Operations Manager

Address: 2122 Campus Dr. SE
Suite 200
Rochester, MN 55904

Phone: (507) 328-7070 or 328-7034

FAX: (507) 328-7090

E-mail: Grzanek.brian@co.olmsted.mn.us

1.1. SIC CODE: 4953

1.2. DESCRIPTION OF PREMISES: The Kalmar Landfill is located in Olmsted County, Kalmar Township, on County Road 156. The landfill occupies 160 acres of which approximately 71 acres have been designated for waste disposal. The site is divided into three disposal areas: combustor ash, demolition debris and municipal solid waste (MSW).

1.3. DESCRIPTION OF PROCESS FLOW: The Olmsted County Kalmar Landfill currently accepts combustor ash from the OWEF and the Mayo Clinic Hospital/Medical Infectious Waste Incinerator (HMIWI). The site also currently has a solid waste recycling area. The solid waste processing area is located in the MSW disposal area. The area is used to reclaim waste in the MSW cells and to

separate out some types of incoming solid waste into two fractions- combustible and non-combustible. The combustible fraction of the reclaimed waste is reduced in size by use of a slow speed shredder and the reclaimed portion is sent through a trammel to remove excess dirt. The combustible fraction is transported to the OWEF to recover the energy stored in the waste. The non-combustible fraction is deposited in the active MSW cell. The solid waste recycling area is located in the ash disposal area. The purpose of this area is to move recyclable metals from the active ash cell using magnetic separation. The recovered metal is sold to a scrap metal process-broker. Leachate is collected from the MSW and demolition debris disposal areas and deposited into two dedicated leachate holding tanks. The first holding tank, a 15,000 gallon steel underground storage tank located south of MSW cell 1 B, holds combined MSW and ash leachate. The second holding tank, a 6,000 gallon single wall steel underground storage tank (STl-p3) located northeast of the demolition debris cell 1C holds only demolition debris leachate. The leachate streams collected in the two holding tanks are pumped and transported to the Water Reclamation Plant for treatment via the 5,000 gallon semi-tanker truck.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: None

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER SAMPLE TYPE	DAILY LIMITATION	MONTHLY LIMIT	SAMPLING FREQUENCY
FLOW gallons		Per Load	
CBOD5 mg/l		Monthly **	Grab
TSS mg/l		Monthly **	Grab
TP mg/l		Monthly **	Grab
NH4-N mg/l		Monthly **	Grab
Arsenic mg/l	0.14	Semi-Annually	Grab
Cadmium mg/l	0.26	Semi-Annually	Grab
Chromium mg/l	1.71	Semi-Annually	Grab
Copper mg/l	1.0	Semi-Annually	Grab
Cyanide mg/l	0.65	Semi-Annually	Grab
Lead mg/l	0.43	Semi-Annually	Grab
Mercury mg/l	0.009	Semi-Annually	Grab
Molybdenum mg/l	1.43	Semi-Annually	Grab
Nickel mg/l	2.38	Semi-Annually	Grab
Selenium mg/l	0.44	Semi-Annually	Grab
Silver mg/l	0.24	Semi-Annually	Grab
Zinc mg/l	1.48	Semi-Annually	Grab
TTO mg/l	2.13	Semi-Annually	Grab

Abbreviation of terms that may be found in table 2.0

CBOD5 Five Day Carbonaceous Biochemical Oxygen Demand

mg/l Milligrams per liter

TP Total Phosphorus

TSS Total Suspended Solids

TTO Total Toxic Organics

** Sampling: The monthly samples required in section 2.0 are to be collected by the user and submitted in a properly preserved container to the Water Reclamation Plant for the analysis of the required parameters.

3.0. SPECIFIC CONDITIONS

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0 of this permit beginning April 1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: NA

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0 shall be taken at the following location(s): A grab sample from either the sample tap on the loadout pipe or a bailed sample from the leachate tank.

3.4. MONTHLY AVERAGES: NA

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: A self monitoring report shall be submitted Semi-annually according to the following schedule:

Frequency	Period	Due Date
Semi Annually	Jan 1 - Jun 30	Jul. 31
	Jul 1 - Dec 31	Jan 31

Reports shall include all required and any other self-monitoring of discharges.

3.7 REQUIRED PRETREATMENT: NA

3.8 INSTRUMENTATION: NA

3.9 SPILL CONTROL PLAN: NA

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION: The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. SAMPLES: For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0 of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premises to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 6N-22¬

This permit is issued to:

Kemps LLC – Ice Cream

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April, 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Kemps, LLC

Mailing Address: 406 N. Broadway
Rochester, MN 55903

Address of Premises: 406 N. Broadway
Rochester, MN 55903

Contact Name: Andrew Evans

Title: Plant Manager

Address: 406 N. Broadway
Rochester, MN 55903

Phone:(507) 287-7333 FAX: (507) 287-7307

E-mail Andrew.evans@kemps.com

1.1. SIC CODE: 2024

1.2. DESCRIPTION OF PREMISES:

Product	Maximum Quantity Per Day
Ice Cream/Frozen Deserts	175,000 gal/ day
Nitrogen frozen pelletized Ice cream	Per day

1.3. DESCRIPTION OF PROCESS FLOW: Kemps Rochester Ice Cream produces a variety of ice cream products. Raw material are unloaded from tanker trucks and process into cream. The cream receives ingredients that differentiate the variety of ice cream flavors. These mixtures are then placed into containers, wrapped into bundles and frozen. Pallets of finished product are sent to warehouses throughout the country where they are distributed to the customer. The facility's waste streams are managed in the following ways: High strength liquid waste is placed into a tank, pumped into a tanker truck and processed offsite. Low strength liquid waste is sent to the wastewater treatment plant. Trash I compacted onsite and deliver to the incinerator. Recycled materials are sent to recycling facilities. Kemps is a manufacturer of a full line of ice cream and frozen desserts for customers at the retail and food service levels. We receive all of our raw

ingredients used for our mix in tanker trucks which are off loaded at the facility. This would consist of cream, condensed skim, whey, buttermilk and our liquid sugars. These are then batched to certain formulas, ran through pasteurizers and then put into holding tanks. From these tanks the mix is pumped to the flavor vats where coloring and flavors are added. From the flavor tanks the mix is pumped through the ice cream freezers where mix becomes a semi frozen state. From the freezer the ice cream is run to a filler where it goes into a variety of different sizes. Once filled it is ran to a packaging area and then ran through a hardening system. Product is then palletized and then sent out to several outside storage facilities. Currently we have 9 filling stations and are looking at adding another sandwich line in 2012. I do not anticipate this impacting our water usage as clean-up is minimal.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: We care currently acid neutralizing our waste stream with sulfuric acid to help maintain our pH between 5-11.

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER SAMPLE TYPE	DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING FREQUENCY
FLOW gallons	0.110	Continuous	Totalizer
PH 5 < pH < 11	NA	Continuous	Recorder
CBOD5 ppd 4700	3400	Daily **	24 Hour Composite
TSS ppd 1650	1150	Daily **	24 Hour Composite
TP ppd 50	25	Daily **	24 Hour Composite

Abbreviation of terms that may be found in table 2.0

CBOD5	Five Day Carbonaceous Biochemical Oxygen Demand
mg/l	Milligrams per liter
ppd	Pounds per day
TP	Total Phosphorus
TSS	Total Suspended Solids

** Daily samples required in table 2.0 are to be collected by the user in a properly preserved container for analysis by the Water Reclamation Plant.

3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0 of this permit beginning April 1, 2012 and lasting through March 31, 2017. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: A historical ratio of actual TOC to actual CBOD5 measurements will be applied to actual TOC measurement to calculate a CBOD5 loading for the purpose of determining compliance with the limits specified in table 2.0.

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0 shall be taken at the following location(s): The discharge pipe located next to the equalization tank as detailed in the drawings submitted to the Water Reclamation Plant by Marigold North and shown in Appendix A

3.4. MONTHLY AVERAGES: For the purposes of determining compliance with the monthly limits specified in section 2.0 an average of all daily loadings during any given calendar month will be used.

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: The user shall submit a written report if any self monitoring of the effluent is conducted. The report is due on January 31 of the following year in which the monitoring was conducted.

Reports shall include all required and any other self monitoring of discharges.

3.7 REQUIRED PRETREATMENT: NA

3.8 INSTRUMENTATION: The pH metering system shall be calibrated monthly using a seven (neutral) and at least one other certified standard buffer solution. A record of such calibrations shall include the buffers used, the initial reading before adjustment and the final reading after calibration at the known pH's used. Records shall be kept for a period of at least three years.

3.9 SPILL CONTROL PLAN The user shall submit, by March 31, 2013, submit an up to date written Spill Control Plan to address procedures to prevent adverse impact from accidental spills. The plan shall include sources of toxic pollutants, prohibited substances as described by RCO 76A and conventional pollutants limited in section 2.0 or this permit. Procedures may include passive measures, such as secondary containment and active measures such as scheduled inspections and maintenance. The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer. The plan shall be implemented by the user upon submit ion to the Water Reclamation Plant and be followed at all times thereafter.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected in either:

a. A volume consistently proportional to the flow rate at the time of collection.

b. A fixed volume taken at equal time intervals within the compositing period.

All composite samples shall consist of a number of discrete samples equal to one per hour for the compositing period. All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0 of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit.

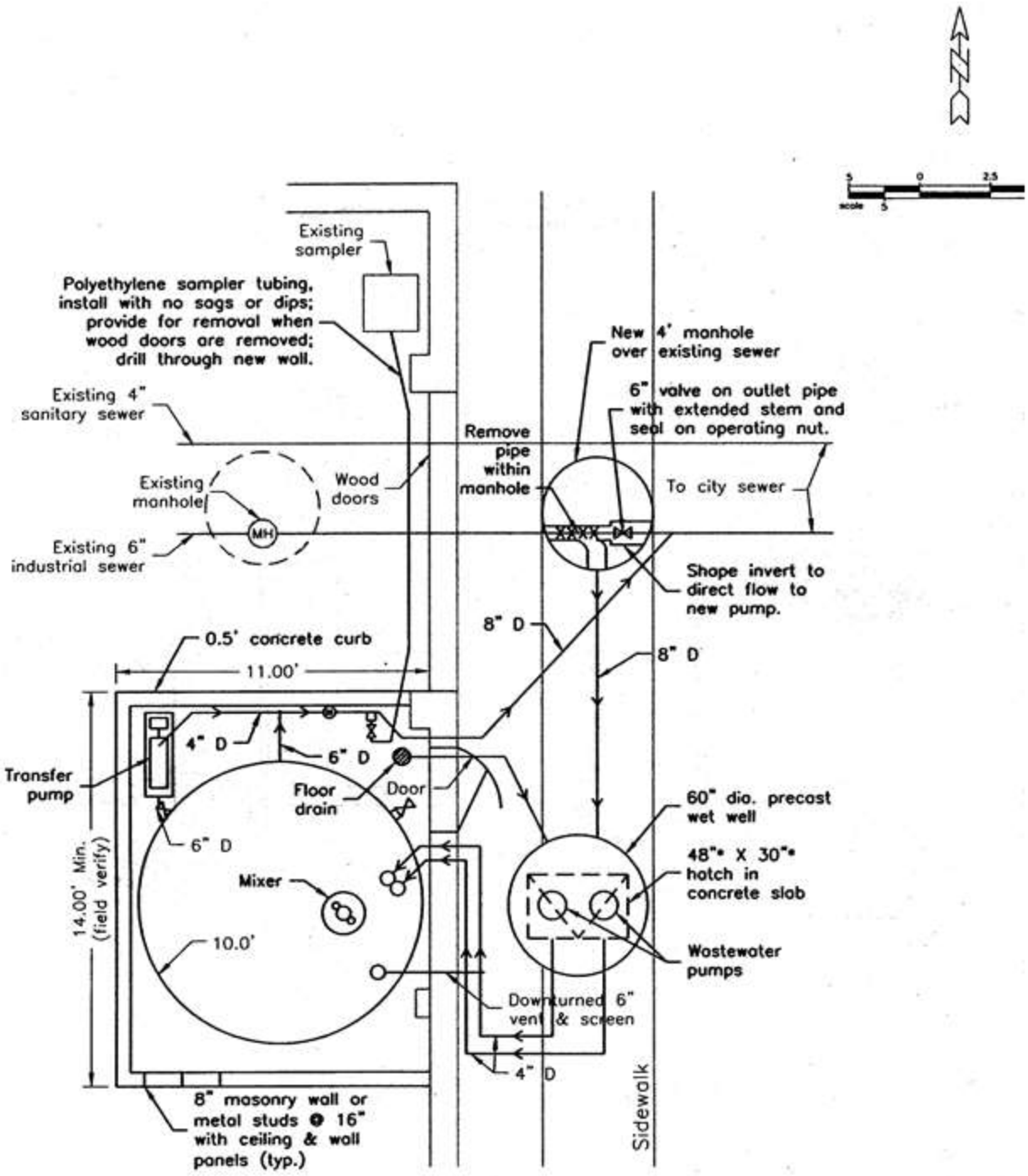
4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in his permit at least 30 days prior to the effective date of change.


Existing sampler
Polyethylene sampler tubing, install with no sags or dips; provide for removal when wood doors are removed; drill through new wall.
New 4' manhole over existing sewer
6" valve on outlet pipe with extended stem and seal on operating nut.
Existing 4" sanitary sewer
Remove pipe within manhole
To city sewer
Existing manhole
Wood doors
MH
Existing 6" industrial sewer
Shope invert to direct flow to new pump.
8" D
8" D
0.5' concrete curb
11.00'
4" D
6" D
Transfer pump
Floor drain
Door
60" dia. precast wet well
6" D
48"• X 30"• hatch in concrete slab
14.00' Min. (field verify)
Mixer
10.0'
Wastewater pumps
Downturned 6" vent & screen
4" D
8" masonry wall or metal studs @ 16" with ceiling & wall panels (typ.)
Sidewalk

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 7N-22

This permit is issued to:

Kemps LLC – Milk Plant

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Kemps LLC Milk Plant

Mailing Address: P.O. Box 309
Rochester, MN 55903

Address of Premises: 700 1st Avenue SE
Rochester, MN 55904

Contact Name: Brian Dickson

Title: Asst. Plant Manager

Address: 700 1st Avenue SE
Rochester, MN 55904

Phone:(507) 206-5218 FAX: (507) 206-5232

e-mail: brian.dickson@kemps.com

1.1. SIC CODE: 2026, 2037

1.2. DESCRIPTION OF PREMISES:

1.3.

Products	Maximum Quantities
Fluid Milk	130,000 gallons
Bulk Cream	5,000 gallons
Fruit Drinks	2,000 gallons

1.4. DESCRIPTION OF PROCESS FLOW:

Milk is received by AMPI employees and stored in raw milk silos. Kemps transfers milk from the silos to pasteurization equipment. Kemps mixes milk from the silo with other ingredients in batch tanks. (i.e. chocolate powder & sugar for chocolate milk) then tranfers to pasteurization equipment. From the pasteurization equipment product is sent to pasteurized tanks. From pasteurized tanks product is sent to fillers and packaged in gallons, half gallons, quarts, pints, half pints, totes and 5 gallon bags.

1.5. DESCRIPTION OF PRETREATMENT PROVIDED: Wastewater is neutralized jointly with AMPI waste.

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER	DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING FREQUENCY SAMPLE TYPE
FLOW MGD	0.222	Continuous	Totalizer
CBOD5 ppd	4300	3200	Daily ** 24 Hour Composite
TSS ppd	1500	1100	Daily ** 24 Hour Composite
TP ppd	75	55	Daily ** 24 Hour Composite

Abbreviation of terms that may be found in table 2.0

CBOD5	Five Day Carbonaceous Biochemical Oxygen Demand
mg/l	Milligrams per liter
ppd	Pounds per Day
TP	Total Phosphorus
TSS	Total Suspended Solids

** Daily samples required in table 2.0 are to be collected by the user in a properly preserved container for analysis by the Water Reclamation Plant.

3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0. of this permit beginning April 1, 2012 and lasting through March 31, 2017. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: A historical ratio of actual TOC to actual CBOD5 measurements will be applied to actual TOC measurement to calculate a CBOD5 loading for the purpose of determining compliance with the limits specified in table 2.0.

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0. shall be taken at the following location(s): Wastewater discharge line located in the basement of the building after the sump pit.

3.4. MONTHLY AVERAGES: For the purposes of determining compliance with the monthly limits specified in section 2.0 an average of all daily loadings during any given calendar month will be used.

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: The user shall submit a written report if any self monitoring of the effluent is conducted the report is due on January 31 of the following year in which the monitoring was conducted.

3.7 REQUIRED PRETREATMENT: Kemps LLC shall maintain a letter of understanding with Associated Milk Producers Incorporated (which is attached and made a part of this permit) to pH adjust and treat Marigold Milk Plant's commingled wastewater flow. This treatment shall include both high pH wastes greater than eleven and low pH wastes less than five.

3.8 INSTRUMENTATION: NA

3.9 SPILL CONTROL PLAN By March 31, 2013 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms. The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a

hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0. of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 12N-22

This permit is issued to:

Kerry Ingredients

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Kerry Bioscience.

Mailing Address: 2402 7th Street NW
Rochester, MN 55901

Address of Premises: Kerry Bioscience
2402 7th Street NW
Rochester, MN 55901

Contact Name: Richard Anderson
Title: Manager, Engineering and Maintenance

Address: 2402 7th Street NW
Rochester, MN 55901

Phone:(507) 206-1230 FAX: (507) 285-3438

E-mail: richard.anderson@kerry.com

1.1. SIC CODE: 2023, 2099

1.2. PRODUCTS PRODUCED:

Product	Maximum Quantity per day
Dry Powder, Finished Goods	55,000 pounds
Liquid Culture Concentrate	1,650 pounds
Yogurt Cultures	38000 pounds

1.3. DESCRIPTION OF PROCESS FLOW: Liquid raw materials are received on the West side of the building and stored in one of thirteen dairy silos.Dry powder raw materials are received on the east side of the facility and are blended together with liquids (water or other liquid raw material) and converted to an intermediate state via microbial fermentation or reaction hydrolysis. The intermediate product is then sent to a spray dryer after pasteurization and or evaporation, for conversion into a powder. This powder is packaged directly off the spray dryer or blended with other powder ingredients ans subsequently packaged to make finished goods. Liquied culture concentrates and yogurt cultures do not get spray dried. They are packaged directly out of the blending/fermentation vessels in their final form into cus or bags.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: Wastewater streams from the facility are gravity fed into a lift station and then pumped into a 50,000 gallon equalization basin. The pH of the wastewater is monitored and either sulfuric acid or caustic soa is added to neutralize high or low pH streams. Fermentation effluent and impinge water from the spray dryer are excluded from the normal wastewater stream by collecting into a silo and hauled out for land application. Waste Streams are pumped into a 50,000 gallon equalization basin. Sulfuric acid is added for pH adjustment. Fermentation wastes are collected and hauled off-site.

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER	DAILY LIMITATION		MONTHLY LIMITATION	SAMPLING FREQUENCY
SAMPLE TYPE				
FLOW MGD		0.179	Continuous	Totalizer
PH	5 < pH < 11	NA	Continuous	Recorder
CBOD5 ppd	1900	1500	Daily **	24 Hour Composite
TSS ppd	2400	1200	Daily **	24 Hour Composite
TP ppd	50	30	Daily **	24 Hour Composite

Abbreviation of terms that may be found in table 2.0

CBOD5	Five Day Carbonaceous Biochemical Oxygen Demand
mg/l	Milligrams per liter
ppd	Pounds per day
TP	Total Phosphorus
TSS	Total Suspended Solids

** Daily samples required in table 2.0 are to be collected by the user in a properly preserved container for analysis by the Water Reclamation Plant.

2.1. INTERIM LIMITS AND MONITORING REQUIREMENTS.

Interim Limits are effective from April 1, 2012 until March 31, 2013. Interim limits are for the purpose of collecting data and evaluating additional loadings from Kerry Ingredients. The data will be used to evaluate and establish permanent limit increases and associated plant investment fees (PIF) to accommodate expanded production at the Kerry Facility.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER		DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING FREQUENCY SAMPLE TYPE
FLOW MGD		0.200	Continuous	Totalizer
PH	5 < pH < 11	NA	Continuous	Recorder
CBOD5 ppd	5000	4000	Daily **	24 Hour Composite
TSS ppd	6400	3200	Daily **	24 Hour Composite
TP ppd	130	80	Daily **	24 Hour Composite

Abbreviation of terms that may be found in table 2.0

CBOD5	Five Day Carbonaceous Biochemical Oxygen Demand
mg/l	Milligrams per liter
ppd	Pounds per day
TP	Total Phosphorus
TSS	Total Suspended Solids

** Daily samples required in table 2.0 are to be collected by the user in a properly preserved container for analysis by the Water Reclamation Plant.

3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0 of this permit beginning April 1, 2012 and lasting through March 31, 2017. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application,

including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: A historical ratio of actual TOC to actual CBOD5 measurements will be applied to actual TOC measurement to calculate a CBOD5 loading for the purpose of determining compliance with the limits specified in table 2.0.

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0 shall be taken at the following location(s):The sample building located above the equalization tank.

3.4. MONTHLY AVERAGES: For the purposes of determining compliance with the monthly limits specified in section 2.0 an average of all daily loadings during any given calendar month will be used.

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: Kerry Ingredients will submit a report with detailed information regarding plant expansion by October 31, 2012. The report should include production values, increased process area square footage, a description of all new manufacturing process and process tanks, and number of additional employees.

Kerry Ingredients will submit a formal request for additional loadings and flow by December 31, 2012. The request should include specific monthly average loadings (expressed as pounds per day) for BOD, TSS and TP. The request should include specific monthly average flow (expressed in gallons per day). The City will then evaluate the request for the purpose of modifying Kerry's Industrial Discharge permit based on submitted information and data gathered during the interim period outlined in section 2.1 of this permit. If such report is not submitted if the report is not submitted on time the City may not modify the permit and the final limits will become effective on March 31, 2013. The City has sole discretion as to the final decision on whether to modify this permit.

The user shall submit a written report if any self monitoring of the effluent is conducted the report is due on January 31 of the following year in which the monitoring was conducted.

3.7 REQUIRED PRETREATMENT: All process wastes shall be equalized and neutralized as described in section 1.4.

3.8 INSTRUMENTATION: In accordance with section 4.10 of this permit and the monitoring requirements required in section 2.0 the user shall calibrate the flow metering system at least annually based on a known flow rate calculated using standard equations. A record of such calibrations shall include the calculated flow, an initial reading before adjustment and final reading after calibration. Records shall be kept for a period of at least three years. The pH metering system shall be calibrated monthly using a seven (neutral) and at least one other certified standard buffer solution. A record of such calibrations shall include the buffers used, the initial reading before adjustment and the final reading after calibration at the known pH's used. Records shall be kept for a period of at least three years.

3.9 SPILL CONTROL PLAN By March 31, 2013 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms.

The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0 of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if

required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 8N – 22

This permit is issued to:

Mayo Clinic Campus

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Mayo Clinic

Mailing Address: Mayo Clinic
200 1st Street SW
Rochester, MN 55905

Address of Premises: 200 1st Street SW
Rochester, MN 55905

Contact Name: Jodi M. Larson

Title: Environmental Compliance Coordinator

Address: Mayo Clinic
200 1st Street SW
Rochester, MN

Phone: (507) 284-6708 FAX: (507) 284-2268

e-mail: larson.jodi@mayo.edu

1.1. SIC CODE: 8011

1.2. DESCRIPTION OF PREMISES: Medical Care 19,000 patient admissions per year (2009 data for Rochester Methodist Hospital), 341 beds at Rochester Methodist Hospital, 1.55 million outpatient visits per year. (2009 data)

1.3. DESCRIPTION OF PROCESS FLOW: Effluent associated with the following activities, domestic water, food service, medical procedures, and medical laboratory.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: None

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER DAILY LIMITATION MONTHLY LIMITATION SAMPLING FREQUENCY SAMPLE TYPE

Arsenic mg/l 0.14 None

Cadmium mg/l	0.26	None	
Chromium mg/l	1.71	None	
Copper mg/l	1.0	None	
Lead mg/l	0.43	None	
Nickel mg/l	2.38	None	
Mercury mg/l	0.009	None	
Molybdenum mg/l	1.43	None	
Silver mg/l	0.24	None	
Selenium mg/l	0.44	None	
Zinc mg/l	1.48	None	
Cyanide mg/l	0.65	None	

Abbreviation of terms that may be found in table 2.0

mg/l Milligrams per liter

3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0. of this permit beginning April 1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: NA

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0. shall be taken at the following location(s): The Hilton Building: The cleanout located in room CL-30 As illustrated in appendix A. The Gonda Building from the private manhole located in the sidewalk on the west side of second Ave SW south of south of Center Street as identified in appendix A.

3.4. MONTHLY AVERAGES: NA

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: The user shall submit a written report if any self monitoring of the effluent is conducted the report is due on January 31 of the following year in which the monitoring was conducted.

3.7 REQUIRED PRETREATMENT: The Mayo Clinic has submitted a sewered waste notification form for the batch disposal of used x-ray fixer which is a D011 characteristic hazardous waste. The form indicates that this waste stream will be treated for silver recovery prior to disposal.

3.8 INSTRUMENTATION: NA

3.9 SPILL CONTROL PLAN By March 31, 2018 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the

Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms. The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0. of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

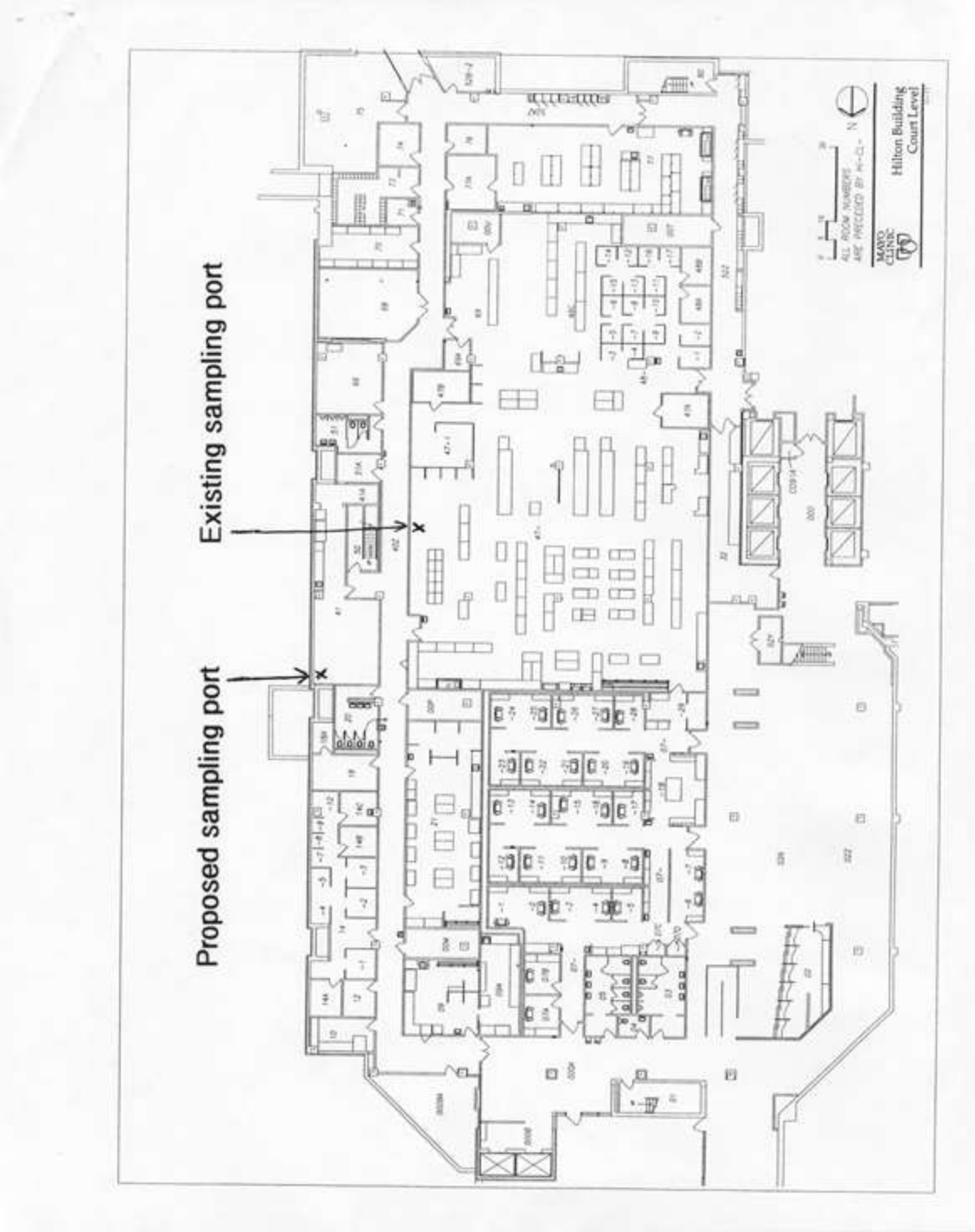
4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.

Appendix A – Sampling Locations

Hilton Building



Gonda Building

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 21N-22

This permit is issued to:

Mayo Clinic - Incinerator

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA:

Company Name: Mayo Clinic - Incinerator

Mailing Address: 200 1st Street SW
Rochester, MN 55905

Address of Premises: 7123 LC Drive SW
Rochester, MN 55902

Contact Name: Jodi M. Larson

Title: Environmental Compliance Coordinator

Address: 200 1st Street SW
Rochester, MN 55905

Phone:(507) 284-4708 FAX: (507) 284-2268

e-mail: Larson.jodi@may.edu

1.1. SIC CODE: 4953

1.2. DESCRIPTION OF PREMISES: Incineration of Medical Waste and General Waste (39,200 pounds per day).

1.3. DESCRIPTION OF PROCESS FLOW: Effluent associated with domestic water, cart wash activities, and wet scrubber.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: Wet scrubber discharge is pre-treated to remove toxic metals prior to discharge. The pre-treatment consists of three flow through mixing tanks for metal reduction, coagulation and flocculation (in that order), followed by precipitation in a Lamella plate clarifier. The clarifier effluent is then filtered with paper before discharge.

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER	DAILY LIMITATION	MONTHLY LIMIT	SAMPLING FREQUENCY	SAMPLE TYPE
Arsenic mg/l	0.14		Semi-annually	24 Hour Composite
Cadmium mg/l	0.26		Semi-annually	24 Hour Composite
Chromium mg/l	1.71		Semi-annually	24 Hour Composite
Copper mg/l	1.0		Semi-annually	24 Hour Composite
Lead mg/l	0.43		Semi-annually	24 Hour Composite
Mercury mg/l	0.009		Semi-annually	24 Hour Composite
Molybdenum mg/l	1.43		Semi-annually	24 Hour Composite
Nickel mg/l	2.38		Semi-annually	24 Hour Composite
Selenium mg/l	0.44		Semi-annually	24 Hour Composite
Silver mg/l	0.24		Semi-annually	24 Hour Composite
Zinc mg/l	1.48		Semi-annually	24 Hour Composite

Abbreviation of terms that may be found in table 2.0

mg/l means milligrams per liter

Semiannually means one sample between January 1 and June 31 and one sample between July 1 and December 31.

3.0. SPECIFIC CONDITIONS

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0. of this permit beginning April 1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: NA

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0. shall be taken at the following location(s): The private manholes located in the yard directly south of the incinerator.

3.4. MONTHLY AVERAGES: NA

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: A self monitoring report shall be submitted Semi-annually according to the following schedule:

Frequency	Period	Due Date
Semi-Annually	Jan 1 - Jun 30	Jul 31
	Jul 1 - Dec 31	Jan 31

Reports shall include all required and any other self monitoring of discharges.

3.7. REQUIRED PRETREATMENT: All wet scrubber discharge water shall be treated as described in section 1.4 of this permit.

3.8. INSTRUMENTATION: In accordance with section 4.10 of this permit and the monitoring requirements required in section 2.0 the user shall calibrate the flow metering system at least annually based on a known flow rate calculated using standard equations. The calibration shall be performed by a third party, qualified and experienced in the calibration of the particular model and style of flow metering system in use. A record of such calibrations shall include the calculated flow, an initial reading before adjustment and final reading after calibration. Records shall be kept for a period of at least three years. The pH metering system shall be calibrated monthly using a seven (neutral) and at least one other certified standard buffer solution. A record of such calibrations shall include the buffers used, the initial reading before adjustment and the final reading after calibration at the known pH's used. Records shall be kept for a period of at least three years.

3.9. SPILL CONTROL PLAN: By March 31, 2018 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms. The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION: The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES: For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0. of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 25N-22

This permit is issued to:

Minnesota Pollution Control Agency (MPCA) - Oronoco Landfill Leachate

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Minnesota Pollution Control Agency
Oronoco Landfill Leachate

Mailing Address: 520 Lafayette Road
St. Paul, MN 55155

Address of Premises: 2683 85th Street
Oronoco, MN 55960

Contact Name: Ben Klismith

Title: Engineer

Address: 520 Lafayette Road
St. Paul, MN 55155

Phone: (651) 757-2497 FAX: (651) 296-8717

e-mail: benjamin.klismith@pca.state.mn.us

1.1. SIC CODE: 9511

1.2. DESCRIPTION OF PREMISES: Oronoco landfill is a closed landfill.

1.3. DESCRIPTION OF PROCESS FLOW: Olmsted (Oronoco) county landfill is a lined landfill with a synthetic cover. Leachate drains by gravity to three sump pumps which is then pumped to a central leachate tank. Leachate is taken by truck to the Rochester Water Reclamation Plant for disposal.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: None

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER	DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING FREQUENCY SAMPLE TYPE
FLOW gallons		Per Load	Ledger
CBOD5 mg/l		Monthly **	Grab
TSS mg/l		Monthly **	Grab
TP mg/l	Monthly **	Grab	
NH4-N mg/l		Monthly **	Grab
Arsenic mg/l	0.14	Semi-Annually	Grab
Cadmium mg/l	0.26	Semi-Annually	Grab
Chromium mg/l	1.71	Semi-Annually	Grab
Copper mg/l	1.0	Semi-Annually	Grab
Cyanide mg/l	0.65	Semi-Annually	Grab
Lead mg/l	0.43	Semi-Annually	Grab
Mercury mg/l	0.009	Semi-Annually	Grab
Molybdenum mg/l	1.43	Semi-Annually	Grab
Nickel mg/l	2.38	Semi-Annually	Grab
Selenium mg/l	0.44	Semi-Annually	Grab
Silver mg/l	0.24	Semi-Annually	Grab
Zinc mg/l	1.48	Semi-Annually	Grab
TTO mg/l	2.13	Semi-Annually	Grab

Abbreviation of terms that may be found in table 2.0

CBOD5	Five Day Carbonaceous Biochemical Oxygen Demand
mg/l	Milligrams per liter
TP	Total Phosphorus
TSS	Total Suspended Solids

TTO Total Toxic Organics as defined by rochester code of ordinance chapter 76A.

** Sampling: The monthly samples required in section 2.0 are to be collected by the user and submitted in a properly preserved container to the Water Reclamation Plant for the analysis of the required parameters.

3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0. of this permit beginning April 1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: NA

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0. shall be taken at the following location(s):

3.4. MONTHLY AVERAGES: NA

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: A self monitoring report shall be submitted Semi-Annually according to the following schedule:

Frequency	Period	Due Date
Semi Annually	Jan 1 - Jun 30	Jul. 31
	Jul 1 - Dec 31	Jan 31

Reports shall include all required and any other self-monitoring of discharges.

In addition the MPCA shall submit a copy of all specifications for work, requests for bids and contracts for services on all work performed at the Oronoco landfill. The MPCA shall inform the WRP of any changes in vendors for site management and leachate hauling. The MPCA shall submit two

keys to the Water Reclamation Plant so that personnel may access the site at any time, with reasonable notice.

3.7 REQUIRED PRETREATMENT:NA

3.8 INSTRUMENTATION: NA

3.9 SPILL CONTROL PLAN: NA

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0. of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in his permit at least 30 days prior to the effective date of change.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 3N-22

This permit is issued to:

Olmsted County Environmental Resources Department - Waste to Energy

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data

2.0 Discharge limits

3.0 Specific Conditions

4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Olmsted County Environmental Resources Waste to Energy Facility

Mailing Address: 2122 Campus Drive SE
Suite 200
Rochester, MN 55904

Address of Premises: 301 Silver Creek Road NE
Rochester, MN 55906

Contact Name: Brian Grzanek

Title: Solids Waste Operations Manager

Address: 301 Silver Creek NE, Rochester, MN 55906

Phone: (507) 328-7070 or 328-7034 Fax: 328-7090

e-mail: grzanek.brian@co.olmsted.mn.us

1.1. SIC CODE: 4953

1.2. DESCRIPTION OF PREMISES: The Olmsted Waste-to-Energy is a municipal waste combustor that converts solid waste into energy. The energy produced at the facility provides heating, cooling and electrical service to a district energy system that serves 35 buildings in the City of Rochester.

Solid waste disposal: 400 Tons per day

Heating and Cooling (steam): 3,228,000 pounds per day

Electricity: 228 megawatt-hours per day

1.3. DESCRIPTION OF PROCESS FLOW: The Olmsted Waste-to-Energy facility (OWEF) is a municipal waste combustor (MWC) that converts solid waste into energy, The energy produced at the facility provides heating, cooling and electrical service to a district energy system (DES) that serves 38 buildings in the City of Rochester. Wastewater from the OWEF is generated from domestic potable water use, reverse osmosis rejection, softener re-generation, cooling tower blow down, and general facility housekeeping practices.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: None

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER	DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING FREQUENCY SAMPLE TYPE
TSS mg/l		Semi Annually	24 Hour Composite
Cadmium mg/l	0.26	Semi Annually	24 Hour Composite
Copper mg/l	1.0	Semi Annually	24 Hour Composite
Lead mg/l	0.43	Semi Annually	24 Hour Composite
Mercury mg/l	0.009	Semi Annually	24 Hour Composite
Silver mg/l	0.24	Semi Annually	24 Hour Composite
Zinc mg/l	1.48	Semi Annually	24 Hour Composite

Abbreviation of terms that may be found in table 2.0

mg/l	Milligrams per liter
TSS	Total Suspended Solids

Semi Annually means one sample between January 1 and June 31 and one sample between July 1 and December 31.

3.0. SPECIFIC CONDITIONS

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0. of this permit beginning April

1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: NA

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0. shall be taken at the following location(s): The manhole on the south side of the Waste-to-Energy Facility, located West of the cellular tower and east of the gas plant.

3.4. MONTHLY AVERAGES: NA

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: A self monitoring report shall be submitted semiannually according to the following schedule:

Frequency	Period	Due Date
Semi-Annually	Jan 1 - Jun 30	Jul 31
	Jul 1 - Dec 31	Jan 31

Reports shall include all required and any other self monitoring of discharges.

3.7. REQUIRED PRETREATMENT: NA

3.8. INSTRUMENTATION: NA

3.9. SPILL CONTROL PLAN: NA

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION: The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5,

shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES: For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples shall consist of a number of discrete samples equal to one per hour for the compositing period. All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0. of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in his permit at least 30 days prior to the effective date of change.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 15N-22

This permit is issued to:

Pace Dairy Foods Company

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of February , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Pace Dairy Foods Company

Mailing Address: 2700 Valleyhigh Drive NW
Rochester, MN 55903

Address of Premises: 2700 Valleyhigh Drive NW
Rochester, MN 55901

Contact Name: Rob Ramer

Title: Plant Engineer

Address: 2700 Valleyhigh Drive NW
Rochester, MN 55901

Phone:(507) 280-5685 FAX: (507) 280-5688

e-mail: rob.ramer@kroger.com

1.1. SIC CODE: 2022

1.2. PRODUCTS PRODUCED:

Product	Maximum Quantity Per Day
Natural Cheese	280,000
Process Cheese	150,000

1.3. DESCRIPTION OF PROCESS FLOW: Cleaning and sanitation water. Clean in Place (CIP) and clean out of place (COP).

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: Alkaline and acid base cleaning chemicals are used. A storage tank is used to neutralize and meter flow into sewer.

2.0. INTERIM LIMITS AND MONITORING REQUIREMENTS

EFFECTIVE FEBRUARY 1, 2015 TO JANUARY 31, 2017.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER SAMPLE TYPE	DAILY LIMITATION		MONTHLY LIMITATION	SAMPLING FREQUENCY
FLOW MGD		0.049	Continuous	Totalizer
PH	5 < pH < 11	NA	Continuous	Recorder
CBOD5 ppd	700	350	Daily **	24 Hour Composite
TSS ppd	650	300	Daily **	24 Hour Composite
TP ppd	60	30	Daily **	24 Hour Composite

Abbreviation of terms that may be found in table 2.0

CBOD5	Five Day Carbonaceous Biochemical Oxygen Demand
MGD	Million Gallons per Day
mg/l	Milligrams per liter
ppd	Pounds Per Day
TP	Total Phosphorus
TSS	Total Suspended Solids

** Daily samples required in table 2.0 are to be collected by the user in a properly preserved container for analysis by the Water Reclamation Plant.

2.0. FINAL LIMITS AND MONITORING REQUIREMENTS.

EFFECTIVE FEBRUARY 1, 20177.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER SAMPLE TYPE		DAILY LIMITATION		MONTHLY LIMITATION	SAMPLING FREQUENCY
FLOW MGD		0.049	Continuous	Totalizer	
PH	5 < pH < 11	NA	Continuous	Recorder	
CBOD5 ppd	700	350	Daily **	24 Hour Composite	
TSS ppd	500	200	Daily **	24 Hour Composite	
TP ppd	60	30	Daily **	24 Hour Composite	

Abbreviation of terms that may be found in table 2.0

CBOD5	Five Day Carbonaceous Biochemical Oxygen Demand
MGD	Million Gallons per Day
mg/l	Milligrams per liter
ppd	Pounds Per Day
TP	Total Phosphorus

TSS	Total Suspended Solids

** Daily samples required in table 2.0 are to be collected by the user in a properly preserved container for analysis by the Water Reclamation Plant.

3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0. of this permit beginning April 1, 2012 and lasting through March 31, 2017. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: A historical ratio of actual TOC to actual CBOD5 measurements will be applied to actual TOC measurement to calculate a CBOD5 loading for the purpose of determining compliance with the limits specified in table 2.0.

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0. shall be taken at the following location(s): The wastewater manhole located under the sampling house as detailed in Appendix A.

3.4. MONTHLY AVERAGES: For the purposes of determining compliance with the monthly limits specified in section 2.0 an average of all daily loadings during any given calendar month will be used.

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: The user shall submit written quarterly reports on its progress towards compliance with final limits. Reports shall be submitted according to the following schedule:

March 31,

June 30,

October 31,

December 31,

Reports should include but are not limited to: a copy of all reports generated by MNTAP. a summary of all meetings held to resolve the non-compliance, summaries of testing waste sources, flow

measurements taken to investigate the source of the waste, any new equipment being purchased to decrease solids loadings or changes in operational procedures being made?

3.7 REQUIRED PRETREATMENT: The user shall maintain and operate the final flush recovery tank and the pH neutralization tank.

3.8 INSTRUMENTATION: In accordance with section 4.10 of this permit and the monitoring requirements required in section 2.0 the user shall calibrate the flow metering system at least annually based on a known flow rate calculated using standard equations. A record of such calibrations shall include the calculated flow, an initial reading before adjustment and final reading after calibration. Records shall be kept for a period of at least three years. The pH metering system shall be calibrated monthly using a seven (neutral) and at least one other certified standard buffer solution. A record of such calibrations shall include the buffers used, the initial reading before adjustment and the final reading after calibration at the known pH's used. Records shall be kept for a period of at least three years.

3.9 SPILL CONTROL PLAN By March 31, 2013 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0. of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

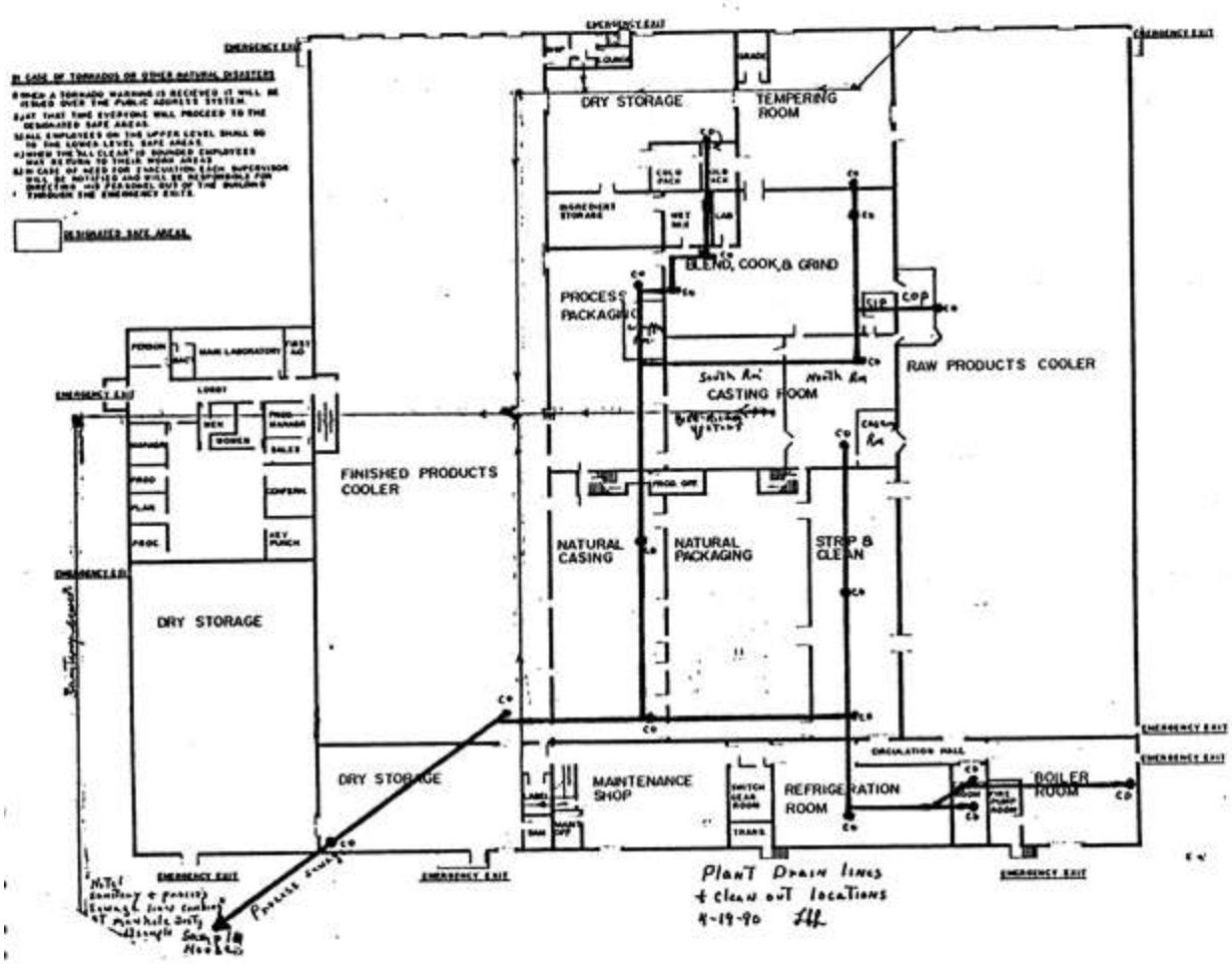
4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.


DRY STORAGE
TEMPERING ROOM
BLEND, COOK, & GRIND
RAW PRODUCTS COOLER
CASTING ROOM
FINISHED PRODUCTS COOLER
NATURAL CASING
NATURAL PACKAGING
STRIP & CLEAN
DRY STORAGE
DRY STORAGE
MAINTENANCE SHOP
REFRIGERATION ROOM
BOILER ROOM
Plant Drain lines & clean out locations
4-19-90

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 11N-22

This permit is issued to:

Seneca Foods Corporation

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Seneca Foods Corporation

Mailing Address: 1217 3rd Avenue SE
Rochester, MN 55904

Address of Premises: 1217 3rd Avenue SE
Rochester, MN 55904

Contact Name: Dave Elfstrand

Title: Plant Manager

Address: 1217 3rd Avenue SE
Rochester, MN 55904

Phone: (507) 280-4531 FAX: (507) 280-4542

e-mail: delfstrand@senecafoods.com

1.1. SIC CODE: 2033

1.2. DESCRIPTION OF PREMISES: Canned and Frozen Vegetables; Peas-500 ton per day, Sweet Corn - 2,200 tons per day, Carrots - 400 tons per day.

1.3. DESCRIPTION OF PROCESS FLOW: Wastewater is derived from processing raw vegetables and cleanup of processing equipment.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: Pretreatment for suspended solids removal is provided by two rotary drum screens: A Rotoshear unit with 0.20 inch openings and a Lyco unit with 0.10 inch openings.

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER		DAILY LIMITATION		MONTHLY LIMITATION	SAMPLING FREQUENCY
SAMPLE TYPE					
FLOW MGD		0.444	Continuous	Totalizer	
PH	5 < pH < 11	NA	Continuous	Recorder	
CBOD5 ppd	13,000	7000	Daily **	24 Hour Composite	
TSS ppd	6600	3300	Daily **	24 Hour Composite	
TP ppd	85	50	Daily **	24 Hour Composite	

Abbreviation of terms that may be found in table 2.0

CBOD5	Five Day Carbonaceous Biochemical Oxygen Demand
MGD	Million Gallons per Day
mg/l	Milligrams per liter
ppd	Pounds per Day
TP	Total Phosphorus
TSS	Total Suspended Solids

** Daily samples required in table 2.0 are to be collected by the user in a properly preserved container for analysis by the Water Reclamation Plant.

3.0. SPECIFIC CONDITIONS.

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0 of this permit beginning April 1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: A historical ratio of actual TOC to actual CBOD5 measurements will be applied to actual TOC measurement to calculate a CBOD5 loading for the purpose of determining compliance with the limits specified in table 2.0.

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0 shall be taken at the following location(s): The composite sampler located in the wastewater metering building which is below the rotary screens. The composite sampler shall draw samples from the wastewater being discharged to the city via the sixteenth avenue connection when process waste is being disposed of and the spray fields are not in operation. The composite sampler shall draw samples from the wastewater being discharged via Third Avenue when the sixteenth avenue valve is closed and process wastes are being discharged via the spray field.

3.4. MONTHLY AVERAGES: For the purposes of determining compliance with the monthly limits specified in section 2.0 an average of all daily loadings during any given calendar month will be used.

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: The user shall submit a written report if any self monitoring of the effluent is conducted. The report is due on January 31 of the following year in which the monitoring was conducted.

3.7 REQUIRED PRETREATMENT: The rotary screen shall be used to remove solids from all wastewater that is being discharged to the City.

3.8. INSTRUMENTATION: In accordance with section 4.10 of this permit and the monitoring requirements required in section 2.0 the user shall calibrate or verify the flow metering system at least annually. The calibration or verification shall be performed by a third party, qualified and experienced in the calibration or verification of the particular model and style of flow metering system in use. A record of such calibrations or verification shall include the method used, the date it was done and who performed the work. Records shall be kept for a period of at least three years. The pH metering system shall be calibrated monthly using a seven (neutral) and at least one other certified standard buffer solution. A record of such calibrations shall include the buffers used, the initial reading before adjustment and the final reading after calibration at the known pH's used. Records shall be kept for a period of at least three years.

3.9. SPILL CONTROL PLAN: By March 31, 2018 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms.

The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS.

4.1. NOTIFICATION: The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES: For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0. of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water

Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

4.13. REVOCATION: The City of Rochester may revoke this permit if the permittee fails to comply with the conditions of this permit, Chapter 76A of the Rochester Code of Ordinances, or applicable State and Federal Regulations.

4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

4.15. WASTEWATER CHANGES: Any significant change in volume or characteristics of industrial wastewater introduced into the Rochester Water Reclamation Plant system shall be immediately reported to the Manager of the Water Reclamation Plant. In such cases this permit may be subject to modification. Notice of any anticipated increase in pollutants contributed shall be given to the City 30 days in advance of such increase, in the form of a new permit application.

4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 10N-22

This permit is issued to:

Saint Mary's Hospital

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April , 2017

Expiration Date: 31st day of March , 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: Saint Mary's Hospital

Mailing Address: Mayo Clinic
200 1st Street SW
Rochester, MN 55905

Address of Premises: 1216 2nd Street SW
Rochester, MN 55905

Contact Name: Jodi M. Larson

Title: Environmental Compliance Coordinator

Address: Mayo Clinic
200 1st Street SW,
Rochester, MN 55905

Phone: (507) 266-6708 FAX: (507) 284-2268

e-mail: Larson.jodi@mayo.edu

1.1. SIC CODE: 8062

1.2. DESCRIPTION OF PREMISES: Medical/Hospital Services

1.3. DESCRIPTION OF PROCESS FLOW: Effluent associated with the following activities: domestic water, food services, medical procedures, and medical laboratories.

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: None

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER SAMPLE TYPE	DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING FREQUENCY
Arsenic mg/l	0.14	None	
Cadmium mg/l	0.26	None	
Chromium mg/l	1.71	None	
Copper mg/l	1.0	None	
Lead mg/l	0.43	None	
Nickel mg/l	2.38	None	
Mercury mg/l	0.009	None	
Molybdenum	1.43	None	
Silver mg/l	0.24	None	
Selenium mg/l	0.44	None	
Zinc mg/l	1.48	None	
Cyanide mg/l	0.65	None	

Abbreviation of terms that may be found in table 2.0

mg/l Milligrams per liter

3.0. SPECIFIC CONDITIONS.

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0. of this permit beginning April 1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: NA

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0. shall be taken at the following location(s): There are two sampling points for Saint Mary's Hospital (Appendix A): For the Mary Brigh building, samples shall be taken from the manhole located NW of the corner of the Francis building (Appendix B). For the Francis, Joseph Domatilla, Alfred and the remainder of the facility including the power plant, samples shall be taken

from the manhole located on the south side of the sidewalk on Second Street and east of the driveway to the former emergency room turnaround (Appendix C).

3.3. MONTHLY AVERAGES: NA

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: The user shall submit a written report if any self monitoring of the effluent is conducted the report is due on January 31 of the following year in which the monitoring was conducted.

3.7 REQUIRED PRETREATMENT: NA

3.8 INSTRUMENTATION: NA

3.9 SPILL CONTROL PLAN: By March 31, 2018 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms. The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS.

4.1. NOTIFICATION: The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES: For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected in either:

a. A volume consistently proportional to the flow rate at the time of collection.

b. A fixed volume taken at equal time intervals within the compositing period.

All composite samples shall consist of a number of discrete samples equal to one per hour for the compositing period. All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0. of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit.

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4.14. PENALTY: In the event of an industrial users noncompliance the user shall be subject to penalty in accordance with Rochester Code of Ordinances 76A.18 through 76A.28.

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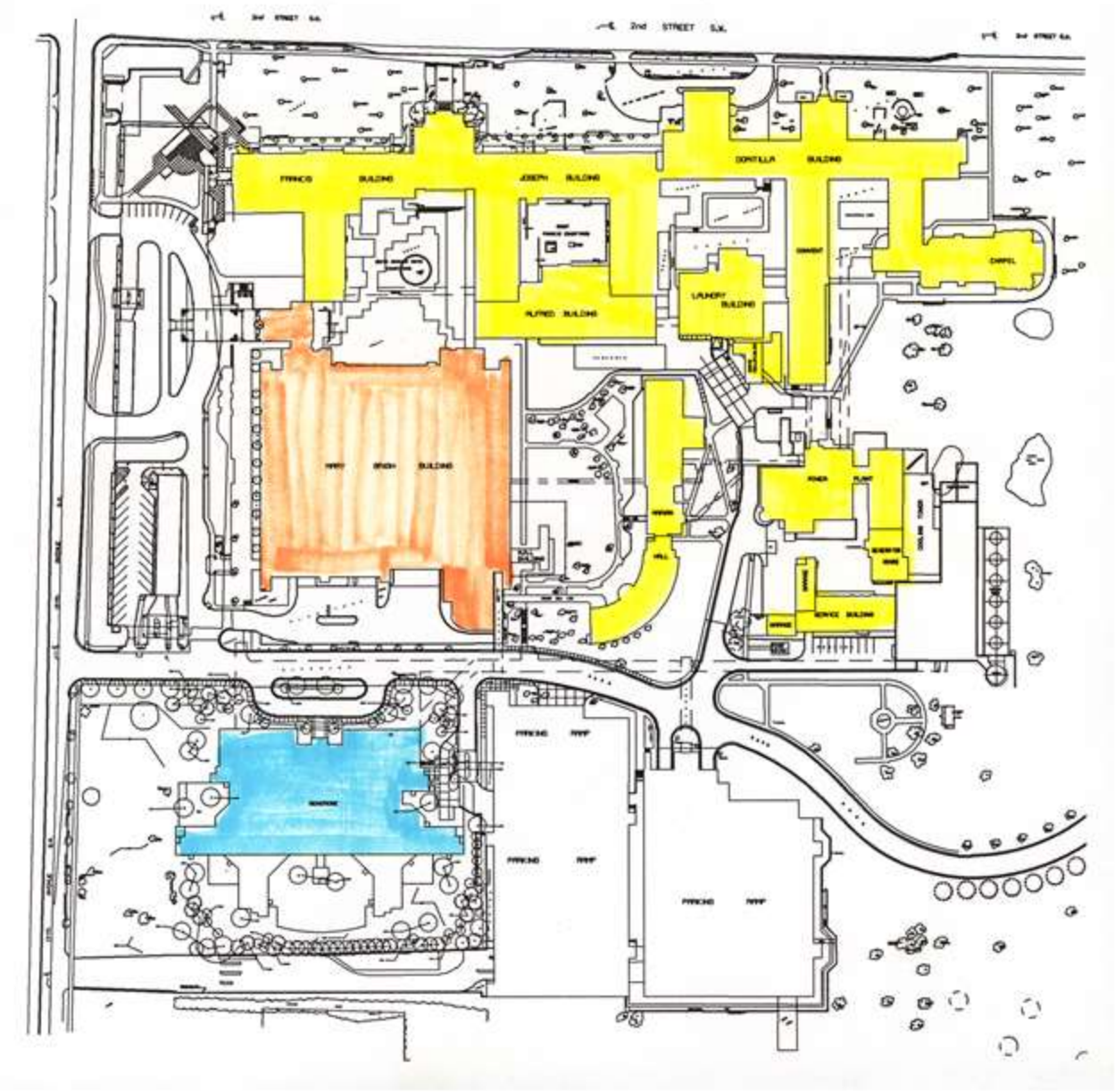
4.16. MODIFICATION: The terms and conditions of the permit may be subject to modifications by the City of Rochester during the term of the permit as limitations or requirements are modified or other just cause exists. The user shall be informed of any proposed changes in this permit at least 30 days prior to the effective date of change.


2nd STREET S.W.
FRANCIS BUILDING
JOSEPH BUILDING
DONTILLA BUILDING
CHAPEL
LAUNDRY BUILDING
RUFINO BUILDING
MARY BRUSH BUILDING
POWER PLANT
SERVICE BUILDING
PARKING
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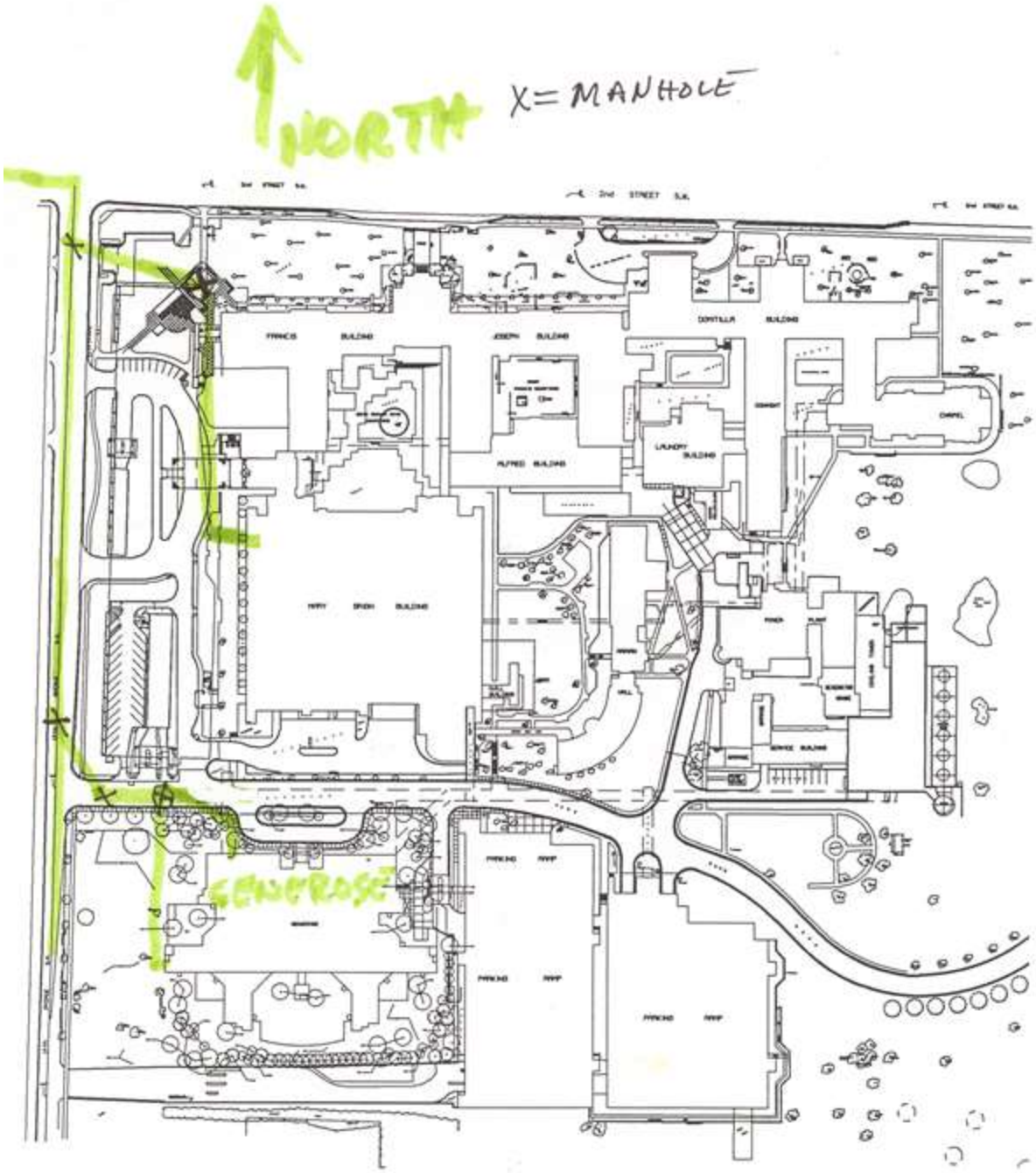
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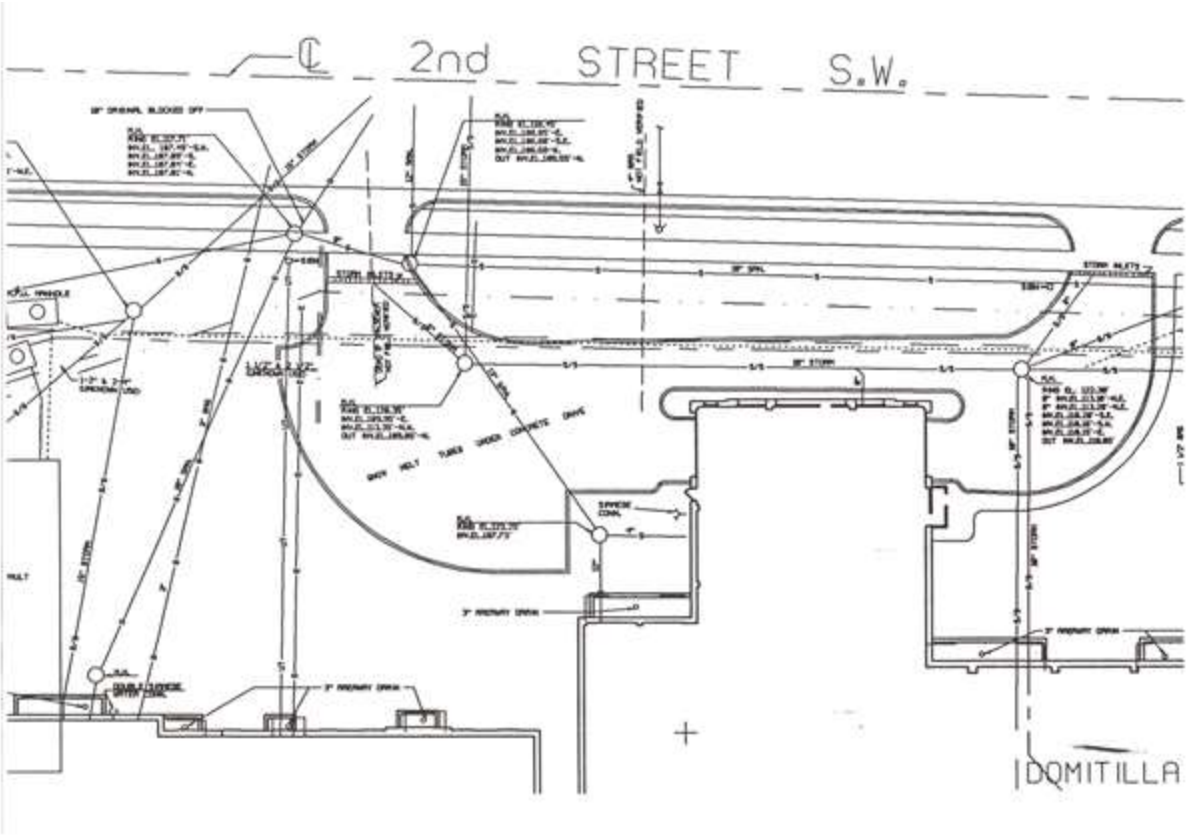
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DOMITILLA

PERMIT

FOR

INDUSTRIAL USER DISCHARGE TO THE

ROCHESTER, MINNESOTA MUNICIPAL SANITARY SEWER SYSTEM

Permit No: 13N-22

This permit is issued to:

Textile Care Services

and permits the discharge of industrial wastes to the Rochester, Minnesota Municipal Sanitary Sewer System from the address and facilities described herein. This permit contains the following sections:

1.0 Background Data
2.0 Discharge limits
3.0 Specific Conditions
4.0 General Conditions

This permit is issued in accordance with Chapter 76A.11 of the Rochester Code of Ordinances.

This permit supersedes any previous permit.

Effective Date: 1st day of April, 2017

Expiration Date: 31st day of March, 2022

Issued By: _____ Date: Richard Freese, City Engineer

1.0. BACKGROUND DATA.

Company Name: T.C Business.
dba Textile Care Services

Mailing Address: 225 Woodlake Drive SE
Rochester, MN 55904

Address of Premises: 225 Woodlake Drive SE
Rochester, MN 55904

Contact Name: Paul Jewison

Title: President-C.E.O

Address: 225 Woodlake Drive SE
Rochester, MN 55904

Phone: (507) 252-7500 FAX: (507) 252-7550

e-mail: paulj@textilecs.com

1.1. SIC CODE:

1.2. DESCRIPTION OF PREMISES: Commercial Laundry - 112,835 pounds per day.

1.3 DESCRIPTION OF PROCESS FLOW: Nine small washer extractors discharge through two stainless steel lint screen inserts. Three 250 lb washer extractors discharge through another series of lint screen inserts. 550 lb. washer extractors add to the above washer extractors. The water from all washer extractors and tunnel washers is combined in a holding tank in the mechanical room. Water is pumped from this tank through a rotary lint screen unit, then through a plate heat exchanger. From here the water goes to the sampling pit and to the drain

1.4. DESCRIPTION OF PRETREATMENT PROVIDED: Using polyurethane lint screens with 7/16" holes in all washer drain troughs. Also use rotary lint screen for all washer wastewater.

2.0. LIMITS AND MONITORING REQUIREMENTS.

SPECIFIC LIMITS AND MONITORING REQUIRED BY THIS PERMIT

PARAMETER	DAILY LIMITATION	MONTHLY LIMITATION	SAMPLING FREQUENCY SAMPLE TYPE
Arsenic mg/l	0.14	None	
Cadmium mg/l	0.26	None	
Chromium mg/l	1.71	None	
Copper mg/l	1.0	None	
Lead mg/l	0.43	None	
Nickel mg/l	2.38	None	
Mercury mg/l	0.009	None	
Molybdenum mg/l	1.43	None	
Silver mg/l	0.24	None	
Selenium mg/l	0.44	None	
Zinc mg/l	1.48	None	
Cyanide mg/l	0.65	None	

Abbreviation of terms that may be found in table 2.0

mg/l	Milligrams per liter

3.0. SPECIFIC CONDITION

3.1. AUTHORIZATION: The permittee is authorized to discharge process wastewater in compliance with the limits and monitoring requirements specified in Section 2.0 of this permit beginning April 1, 2017 and lasting through March 31, 2022. No discharge may take place under this permit after the above expiration date unless the user receives written authorization. In order to receive authorization to discharge after the above expiration date the user shall file a permit application, including any appropriate fees, with the City Engineer or designated representative. Applications will be made in accordance with Rochester Code of Ordinances, Section 76A.11, § 5.

3.2. SURROGATE MONITORING: NA

3.3. SAMPLING LOCATION: Samples collected in compliance with the monitoring requirements specified in Section 2.0 shall be taken at the following location(s): Sampling vault located in the boiler room.

3.3. MONTHLY AVERAGES: NA

3.5. COMBINED WASTE STREAM FORMULA: NA

3.6. REPORTS: The user shall submit a written report if any self monitoring of the effluent is conducted the report is due on January 31 of the following year in which the monitoring was conducted.

3.7 REQUIRED PRETREATMENT: Lint screens with 7/16" holes shall be kept in place on all washer troughs. Rotary lint screen will be used to treat all washer wastewater.

3.8 INSTRUMENTATION: NA

3.9 SPILL CONTROL PLAN The user shall submit, by March 31, 2018 the user shall develop, implement and submit an up to date written Spill Control Plan. The plan should outline procedures to prevent accidental spills and slug loads of process wastes, which could adversely impact the Water Reclamation Plant or the Environment. Procedures should include active and passive measures. Active measures include (but are not limited to) things like training, inspections and routine maintenance. Passive measures include (but are not limited to) things like secondary containment, double wall vessels and alarms. The plan shall be acceptable to the City Engineer or their designated representative. The user shall have 30 days from the time of notification to correct any deficiencies as noted by the City Engineer.

4.0. GENERAL CONDITIONS

4.1. NOTIFICATION The permittee, upon detection of any violations of the limits or monitoring requirements specified in Section 2.0., shall notify the Rochester Water Reclamation Plant. The permittee, upon detection of any violations of the Supplemental Limitations specified in Section 4.5, shall notify the Rochester Water Reclamation Plant. Notification shall be made within 24 hours of detection. The permittee shall also resample for the violated parameter within 30 days. Detection shall include all required and any other self monitoring.

4.2. COMPOSITE SAMPLES For the purposes of the monitoring requirements specified in 2.0., a composite sample shall consist of a series of discrete samples collected using flow proportional techniques unless the user can demonstrate that it is unfeasible.

If the Water Reclamation Plant waives the flow proportional requirement, time proportional composite samples may be used. In either case (flow or time proportional) composite samples must consist of at least one discreet aliquot per hour or every five percent of the total facility flow on the day of sampling.

All samples will be analyzed by a laboratory certified by the Minnesota Department of Health. Analytical methods and sample holding times shall conform to Section 304(h) of the Clean Water Act. All self monitoring conducted by the user shall include the following: The date and time of the sampling. The name of the person conducting the sampling. The dates and times of all analyses. The name of the analyst.

4.3. DISCHARGE PROHIBITIONS: In addition the permittee shall comply with General Discharge Prohibitions as stated in the Rochester Code of Ordinances, Section 76A.03.

4.4. HAZARDOUS WASTES: The permittee shall also notify the Rochester Water Reclamation Plant, in writing, of any discharge of a substance that would, if otherwise disposed of, be considered a hazardous waste under 40 CFR Part 261. Notification shall take place at least 30 days before the date of discharge and conform to 40 CFR Section 403.12(p). No discharge of any hazardous wastes may take place without prior approval of the Rochester Water Reclamation Plant.

4.5. SUPPLEMENTAL LIMITATIONS: Industrial wastewater discharges from the permittee shall not exceed the supplemental limitations as stated in section 76A.07 nor the specific limits as specified in section 2.0. of this permit whichever is lesser.

4.6. FALSIFICATION: The permittee shall not knowingly make a false statement, representation or certification in any record, report, or plan required to be submitted to the Rochester Water Reclamation Plant under the provisions of Chapter 76A of the Rochester Code of Ordinances, or this Permit.

4.7. TRANSFERABILITY: This Permit is non transferable.

4.8. RECORD KEEPING: The permittee shall maintain and retain plant records relating to wastewater discharge as specified by the City for a minimum of three years.

4.9. ACCIDENTAL DISCHARGE: The permittee shall notify the Rochester Water Reclamation Plant immediately of any slug or accidental discharge of a substance or wastewater in violation of Chapter 76A of the Rochester Code of Ordinances or this Permit.

4.10. SAMPLING AND MONITORING DEVICES: The permittee shall install, operate, and maintain sampling and monitoring devices in proper working order at the permittee's own expense, if required by this Permit. A copy of the operating manuals for all sampling and monitoring devices shall be submitted to the Water Reclamation Plant.

4.11. INSPECTION: The permittee shall allow the City of Rochester personnel to enter upon the permittee's premise to inspect the monitoring point, collect samples, and determine compliance with Chapter 76A of the Rochester Code of Ordinances, the Federal Pretreatment Regulations, and this permit.

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LOWER ENERGY // CLEAN DESIGN
DECREASED MAINTENANCE // INNOVATIVE PROCESSES

Technical Memorandum 1	Influent Flows and Loadings
Technical Memorandum 2	Wastewater Characterization and BioWin Calibration
Technical Memorandum 3	Plant Hydraulic Evaluation
Technical Memorandum 4	Primary Clarifier Computational Fluid Dynamics Modeling
Technical Memorandum 5	Final Clarifier Computational Fluid Dynamics Modeling
Technical Memorandum 6	Liquid Stream Alternative Evaluation
Technical Memorandum 7	Solids Alternative Evaluation
Technical Memorandum 8	Digester Gas Management
Technical Memorandum 9	Disinfection and Outfall Evaluation
Technical Memorandum 10	Whole Plant Evaluation
Technical Memorandum 11	Heat Recovery Loop Alternative
Technical Memorandum 12	NPDES Permitting Process
Technical Memorandum 13	Industrial Discharge Wasteloads and Practices