

NPDES Permit No. IL0031593

Notice No. TTL:10120601.bah

Public Notice Beginning Date: **January 28, 2011**

Public Notice Ending Date: **February 28, 2011**

National Pollutant Discharge Elimination System (NPDES)
Permit Program

PUBLIC NOTICE/FACT SHEET
of
Draft Reissued NPDES Permit to Discharge into Waters of the State

Public Notice/Fact Sheet Issued By:

Illinois EPA
Division of Water Pollution Control
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
217/782-0610

Name and Address of Discharger:

City of Vienna
205 North 4th Street
Vienna, Illinois 62995

Name and Address of Facility:

City of Vienna - STP
West Main Street
Vienna, Illinois 62995
(Johnson County)

The Illinois Environmental Protection Agency (IEPA) has made a tentative determination to issue a NPDES Permit to discharge into the waters of the state and has prepared a draft Permit and associated fact sheet for the above named discharger. The Public Notice period will begin and end on the dates indicated in the heading of this Public Notice/Fact Sheet. All comments on the draft Permit and requests for hearing must be received by the IEPA by U.S. Mail, carrier mail or hand delivered by the Public Notice Ending Date. Interested persons are invited to submit written comments on the draft Permit to the IEPA at the above address. Commentors shall provide his or her name and address and the nature of the issues proposed to be raised and the evidence proposed to be presented with regards to those issues. Commentors may include a request for public hearing. Persons submitting comments and/or requests for public hearing shall also send a copy of such comments or requests to the Permit applicant. The NPDES Permit and notice numbers must appear on each comment page.

The application, engineer's review notes including load limit calculations, Public Notice/Fact Sheet, draft Permit, comments received, and other documents are available for inspection and may be copied at the IEPA between 9:30 a.m. and 3:30 p.m. Monday through Friday when scheduled by the interested person.

If written comments or requests indicate a significant degree of public interest in the draft Permit, the permitting authority may, at its discretion, hold a public hearing. Public notice will be given 45 days before any public hearing. Response to comments will be provided when the final Permit is issued. For further information, please call Todd Lamm at 217/782-0610.

The following water quality and effluent standards and limitations were applied to the discharge:

Title 35: Environmental Protection, Subtitle C: Water Pollution, Chapter I: Pollution Control Board and the Clean Water Act were applied in determining the applicable standards, limitations and conditions contained in the draft Permit.

The applicant is engaged in treating domestic wastewater for the City of Vienna.

The length of the Permit is approximately 5 years.

The main discharge number is 001. The seven day once in ten year low flow (7Q10) of the receiving stream, Little Cache Creek is 0 cfs.

The current design average flow (DAF) for the facility is 0.14 million gallons per day (MGD) and the design maximum flow (DMF) for the facility is 0.35 MGD. Treatment consists of two cell lagoon with rock filter.

The proposed design average flow (DAF) for the facility is 0.4 million gallons per day (MGD) and the design maximum flow (DMF) for the facility is 1.0 MGD. Treatment consists of screening, two cell, covered, aerated lagoon, and submerged, attached growth media reactor.

This reissued Permit increases the facility's DAF, DMF, concentration limits, and/or load limits.

Pursuant to the waiver provisions authorized by 40 CFR § 123.24, this draft permit is within the class, type, and size for which the Regional Administrator, Region V, has waived his right to review, object, or comment on this draft permit action.

This Permit recognizes and continues the year-round disinfection exemption approved by the IEPA on August 3, 1992 and included in past NPDES permit actions since that date. It is the IEPA's tentative decision that under Illinois Pollution Control Board regulations, the following reach of waterbody is not classified for primary contact use activities and is not subject to the fecal coliform water quality standard of 35 Ill. Adm. Code 302.209.

This draft permit does not contain requirements for disinfection of the discharge from discharge numbers(s) 001. Little Cache Creek from the point of discharge and thence to 1000 feet downstream has been determined to be unsuited to support primary contact activities (swimming) due to physical, hydrologic or geographic configuration. Anyone knowing of primary contact activities occurring within this water segment is invited to submit comments to the IEPA. Comments should give the nature of the activities (i.e swimming, fishing, canoeing, etc.), the location and months of the year when these activities have been observed. The IEPA is also interested in obtaining information on the proximity of residential dwellings and the accessibility of the public to this water segment. Anyone with such information is asked to submit comments to the IEPA on this draft permit action. Instructions for submitting comments are contained earlier in this document.

Application is made for the existing discharge(s) which is (are) located in Johnson County, Illinois. The following information identifies the discharge point, receiving stream and stream classifications:

<u>Discharge Number</u>	<u>Receiving Stream</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Stream Classification</u>	<u>Integrity Rating</u>
001	Little Cache Creek	37° 24' 47" North	88° 53' 30" West	General Use	C

To assist you further in identifying the location of the discharge(s) please see the attached map.

The stream segment(s), ADDB02 receiving the discharge from outfall(s) 001 is (are) on the 303(d) list of impaired waters.

The following parameters have been identified as the pollutants causing impairment:

<u>Uses Impaired</u>	<u>Potential Causes</u>
<u>2006 list -</u>	
aquatic life	dissolved oxygen (non-pollutant) and sedimentation/siltation
<u>Partially approved 2008 list -</u>	
aquatic life	dissolved oxygen (non-pollutant) and sedimentation/siltation

The discharge(s) from the facility is (are) proposed to be monitored and limited at all times as follows:

Discharge Number(s) and Name(s): STP Outfall 001

Load limits computed based on a design average flow (DAF) of 0.14 MGD (design maximum flow (DMF) of 0.35 MGD).

From the date of issuance of this Permit until the initiation of operation of the STP expansion, the effluent of the above discharge(s) shall be monitored and limited at all times as follows:

Parameter	LOAD LIMITS lbs/day DAF (DMF)			CONCENTRATION LIMITS mg/L			Regulation
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	
CBOD ₅	29 (73)		47 (117)	25	40		35 IAC 304.120 40 CFR 133.102
Suspended Solids	43 (108)		53 (131)	37	45		35 IAC 304.120 40 CFR 133.102
pH	Shall be in the range of 6 to 9 Standard Units						35 IAC 304.125
Fecal Coliform	Monitor and Report only (May through October)						35 IAC 309.146
Chlorine Residual						0.05	35 IAC 302.208
				Monthly Avg. not less than	Weekly Avg. not less than	Daily Minimum	
Dissolved Oxygen							
March-July				NA	6	5	35 IAC 302.206
August-February				5.5	4	3.5	

*Load Limits are calculated by using the formula: $8.34 \times (\text{Design Average and/or Maximum Flow in MGD}) \times (\text{Applicable Concentration in mg/L})$.

Load limits computed based on a design average flow (DAF) of 0.4 MGD (design maximum flow (DMF) of 1.0 MGD).

From the initiation of operation of the STP expansion until the expiration date of this Permit, the effluent of the above discharge shall be monitored and limited at all times as follows:

<u>Parameter</u>	<u>LOAD LIMITS lbs/day</u> <u>DAF (DMF)</u>			<u>CONCENTRATION</u> <u>LIMITS mg/L</u>			<u>Regulation</u>
	<u>Monthly</u> <u>Average</u>	<u>Weekly</u> <u>Average</u>	<u>Daily</u> <u>Maximum</u>	<u>Monthly</u> <u>Average</u>	<u>Weekly</u> <u>Average</u>	<u>Daily</u> <u>Maximum</u>	
CBOD ₅	33 (83)		67 (167)	10		20	35 IAC 304.120 40 CFR 133.102
Suspended Solids	40 (100)		83 (209)	12		25	35 IAC 304.120 40 CFR 133.102
pH	Shall be in the range of 6 to 9 Standard Units						35 IAC 304.125
Fecal Coliform	Monitor and Report only (May through October)						35 IAC 309.146
Chlorine Residual						0.05	35 IAC 302.208
Ammonia Nitrogen: March-May/Sept.-Oct.	8.7 (22)	22 (54)	50 (125)	2.6	6.5	15	35 IAC 355 35 IAC 302
June-August	7.0 (18)	18 (44)	50 (125)	2.1	5.3	15	
Nov.-Feb.	17 (42)	42 (104)	48 (120)	5.0	12.5	14.4	
				Monthly Avg. not less than	Weekly Avg. not less than	Daily Minimum	
Dissolved Oxygen March-July				NA	6	5	35 IAC 302.206
August-February				5.5	4	3.5	

*Load Limits are calculated by using the formula: $8.34 \times (\text{Design Average and/or Maximum Flow in MGD}) \times (\text{Applicable Concentration in mg/L})$.

This draft Permit also contains the following requirements as special conditions:

1. Reopening of this Permit to include different final effluent limitations.
2. Operation of the facility by or under the supervision of a certified operator.
3. Submission of the operational data in a specified form and at a required frequency at any time during the effective term of this Permit.
4. More frequent monitoring requirement without Public Notice in the event of operational, maintenance or other problems resulting in possible effluent deterioration.
5. Prohibition against causing or contributing to violations of water quality standards.
6. Effluent sampling point location.
7. Controlling the sources of infiltration and inflow into the sewer system.
8. A requirement to monitor and a limit of 0.05 mg/L for residual chlorine when it is used.
9. Submission of annual fiscal data.
10. Recording the monitoring results on Discharge Monitoring Report Forms using one such form for each outfall each month and submitting the forms to IEPA each month.
11. Incorporation of 40 CFR 122.41 (m)&(n) by reference.
12. A minimum of 85% removal of CBOD₅ and suspended solids requirement for the current facility.

**Antidegradation Assessment for Vienna STP
NPDES Permit No. IL0031593 Johnson County**

The subject facility has applied for an NPDES permit for a new treatment plant with a DAF increasing from 0.14 to 0.4 MGD. The proposed plant is an aerated lagoon system with nitrification capability. The existing plant is a lagoon system that has reached its design capacity. The new plant will be more efficient in removing pollutants from the wastewater. The discharge will remain to Little Cache Creek.

Identification and Characterization of the Affected Water Body.

Little Cache Creek (segment ADDB-02) has a 7Q10 flow of zero cfs and is a General Use water. Little Cache Creek is listed on the draft 2010 Illinois Integrated Water Quality Report and Section 303(d) as impaired for aquatic life uses. The potential causes given are dissolved oxygen (non-pollutant) and sedimentation/siltation. Little Cache Creek is not listed as a biologically significant stream in the 2008 Illinois Department of Natural Resources Publication *Integrating Multiple Taxa in a Biological Stream Rating System*; it is given an integrity rating of "C" at this location. Little Cache Creek is not designated as an enhanced water pursuant to the dissolved oxygen water quality standard. The IDNR WIRT system does not list any state threatened or endangered aquatic species as residing in Little Cache Creek.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.

The treated domestic waste that characterizes this proposed effluent would be similar to other treated effluents of largely domestic origin. Ammonia limits in the permit will be set at water quality standards; however, ammonia loading to the receiving stream may increase over existing background levels. Ammonia is not currently regulated in the permit. Any increases in ammonia loading are likely to be small, however, given the increase in efficiency of the new treatment plant over the old. Biochemical oxygen demand (BOD) permit limits will be set at the most stringent effluent standards present in 35 IAC 304.120. Based on this limit (10 mg/L) the new loading of BOD will be 33.4 ppd whereas the existing loading is 29.2 ppd (at 25 mg/L). This slight increase in loading should have no adverse impact on the receiving stream given the marked reduction in concentration. Total suspended solids will undergo a decrease in loading, from 43.2 ppd to 40.0 ppd.

Phosphorus loading may increase but it is impossible to determine the extent. The new treatment plant effluent will definitely have lower phosphorus concentrations than the existing plant due to more efficient removal of suspended particles. This increased efficiency may even result in less phosphorus loading to the receiving stream. Any increase in loading will be small. The Illinois Nutrient Standards Workgroup has been convened to develop nutrient standards and will strive to keep NPDES permitted dischargers aware of its findings, allowing them to anticipate future nutrient permit limits. A future NPDES permit for this facility may be subject to limits based on these yet to be developed standards.

Fate and Effect of Parameters Proposed for Increased Loading.

The BOD and ammonia discharged by this facility will decay into simpler and harmless byproducts by naturally occurring organisms in the receiving stream. Some of the nitrogen originating in the ammonia will remain in the stream in the form of nitrates or organic nitrogen. Ammonia and dissolved oxygen standards will not be exceeded by this discharge.

Purpose and Social & Economic Benefits of the Proposed Activity.

The existing treatment plant is hydraulically overloaded and is at the end of its useful life. The larger proposed plant will provide for growth in the community.

Assessments of Alternatives for Less Increase in Loading or Minimal Environmental Degradation.

The Village considered regionalization with neighboring communities but this alternative was rejected due to the cost of transmitting sewage over long distances.

Land application was also considered. This option was more expensive than construction of the proposed plant given the increased land requirements for land application.

Several other types of treatment plants were considered, but were found to be more expensive than the chosen aerated lagoon system design. An affordability analysis was conducted according to the USEPA Interim Economic Guidance for Water Quality Standards. This concluded that even the most economical alternative (the chosen option) was not affordable by the community.

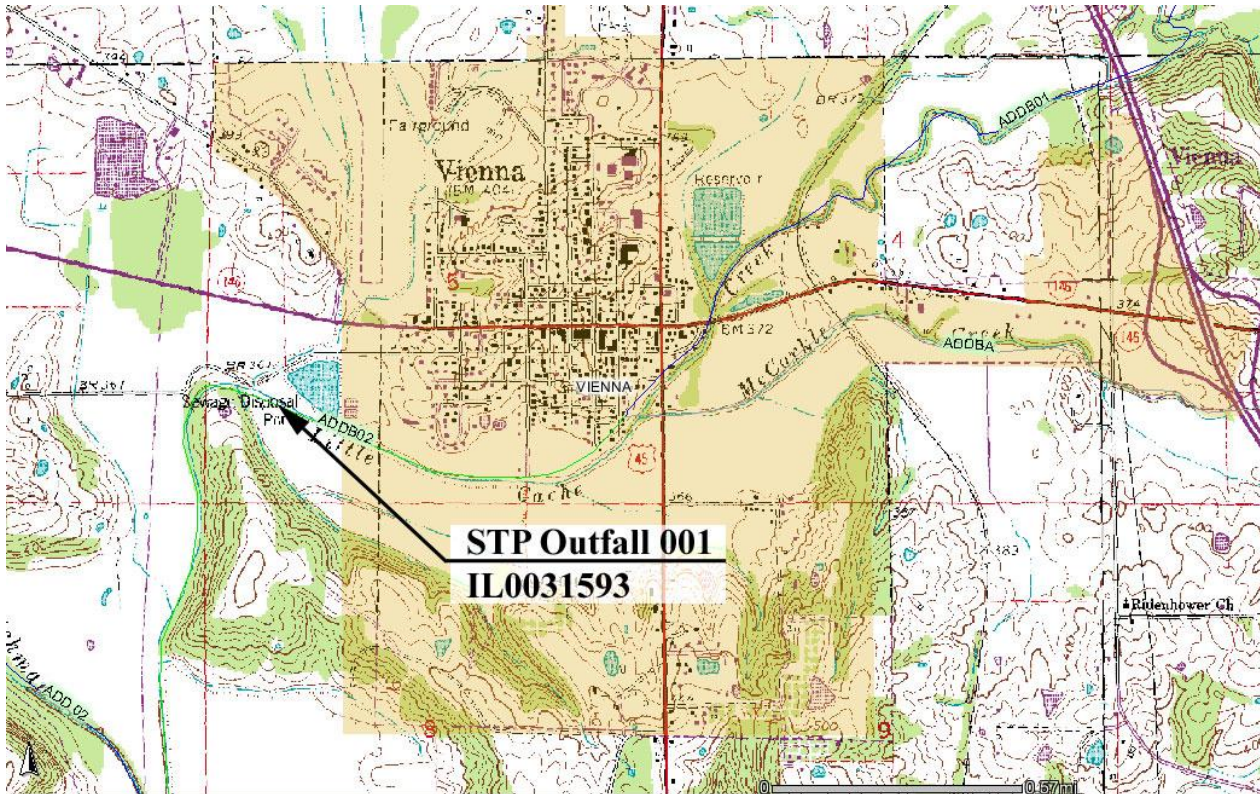
An oxidation ditch plant was an option investigated and was shown in the document Antidegradation Report for Vienna Water Reclamation Plant, July 2010, by Clarida & Ziegler Engineering Co., to cost \$100,000 more than the aerated lagoon system. The design of the oxidation ditch in this estimate did not include the ability to remove nutrients. Adding nutrient removal would add to this cost. Also not considered in the capital cost would be increased electricity usage by the oxidation ditch over the aerated lagoon and the need for a more skilled, full time plant operator. Given that even the aerated lagoon system chosen as the replacement plant by the community was not found to be affordable according to the USEPA method referenced above, the oxidation ditch alternative would be even less affordable.

Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards or Other Entities

The Illinois Department of Natural Resources was consulted regarding threatened and endangered species issues via the EcoCAT system on June 3, 2010. It was immediately determined that no threatened or endangered species reside in the receiving stream and consultation was terminated.

Agency Conclusion.

This preliminary assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard) and was based on the information available to the Agency at the time the draft permit was written. We tentatively find that the proposed activity will result in the attainment of water quality standards; that all existing uses of the receiving stream will be maintained; that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity; and that this activity will benefit the community at large by providing sewage treatment capabilities that allow for future growth. Comments received during the NPDES permit public notice period will be evaluated before a final decision is made by the Agency.



NPDES Permit No. IL0031593

Illinois Environmental Protection Agency

Division of Water Pollution Control

1021 North Grand Avenue East

Post Office Box 19276

Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Reissued (NPDES) Permit

Expiration Date:

Issue Date:

Effective Date:

Name and Address of Permittee:

City of Vienna
205 North 4th Street
Vienna, Illinois 62995

Facility Name and Address:

City of Vienna - STP
West Main Street
Vienna, Illinois 62995
(Johnson County)

Receiving Waters: Little Cache Creek

In compliance with the provisions of the Illinois Environmental Protection Act, Title 35 of the Ill. Adm. Code, Subtitle C, Chapter I, and the Clean Water Act (CWA), the above-named Permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the Permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:TTL:10120601.bah

NPDES Permit No. IL0031593

Effluent Limitations, Monitoring, and Reporting

FINAL

Discharge Number(s) and Name(s): STP Outfall 001

Load limits computed based on a design average flow (DAF) of 0.14 MGD (design maximum flow (DMF) of 0.35 MGD).

Excess flow facilities (if applicable) shall not be utilized until the main treatment facility is receiving its maximum practical flow.

From the effective date of this Permit until the initiation of operation of the STP expansion, the effluent of the above discharge shall be monitored and limited at all times as follows:

Parameter	LOAD LIMITS lbs/day <u>DAF (DMF)</u>			CONCENTRATION <u>LIMITS mg/L</u>			Sample Frequency	Sample Type
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum		
Flow (MGD)							Continuous	
CBOD ₅	29 (73)		47 (117)	25	40		2 Days/Month	Composite
Suspended Solids	43 (108)		53 (131)	37	45		2 Days/Month	Composite
pH	Shall be in the range of 6 to 9 Standard Units						2 Days/Month	Grab
Fecal Coliform***	Monitor and Report (May through October)						2 Days/Month	Grab
Chlorine Residual***						0.05	2 Days/Month	Grab
				Monthly Average not less than	Weekly Average not less than	Daily Minimum		
Dissolved Oxygen March-July				NA	6	5	2 Days/Month	Grab
August-February				5.5	4	3.5	2 Days/Month	Grab

*Load limits based on design maximum flow shall apply only when flow exceeds design average flow.

**Carbonaceous BOD₅ (CBOD₅) testing shall be in accordance with 40 CFR 136.

***See Special Condition 8.

Flow shall be reported on the Discharge Monitoring Report (DMR) as monthly average and daily maximum.

Fecal Coliform shall be reported on the DMR as a daily maximum value.

pH shall be reported on the DMR as minimum and maximum value.

Chlorine Residual shall be reported on DMR as daily maximum value.

Dissolved oxygen shall be reported on the DMR as a minimum value.

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Effluent Limitations, Monitoring, and Reporting

FINAL

Load limits computed based on a design average flow (DAF) of 0.4 MGD (design maximum flow (DMF) of 1.0 MGD).

Excess flow facilities (if applicable) shall not be utilized until the main treatment facility is receiving its maximum practical flow.

From the initiation of operation of the STP expansion until the expiration date of this Permit, the effluent of the above discharge shall be monitored and limited at all times as follows:

Parameter	LOAD LIMITS lbs/day			CONCENTRATION LIMITS mg/L			Sample Frequency	Sample Type	
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum			
Flow (MGD)							Continuous		
CBOD ₅	33 (83)		67 (167)	10		20	2 Days/Month	Composite	
Suspended Solids	40 (100)		83 (209)	12		25	2 Days/Month	Composite	
pH	Shall be in the range of 6 to 9 Standard Units							2 Days/Month	Grab
Fecal Coliform***	Monitor and Report (May through October)							2 Days/Month	Grab
Chlorine Residual***						0.05	2 Days/Month	Grab	
Ammonia Nitrogen:									
As (N)									
March-May/Sept.-Oct.	8.7 (22)	22 (54)	50 (125)	2.6	6.5	15	2 Days/Month	Composite	
June-August	7.0 (18)	18 (44)	50 (125)	2.1	5.3	15	2 Days/Month	Composite	
Nov.-Feb.	17 (42)	42 (104)	48 (120)	5.0	12.5	14.4	2 Days/Month	Composite	
				Monthly Average not less than	Weekly Average not less than	Daily Minimum			
Dissolved Oxygen									
March-July				NA	6	5	2 Days/Month	Grab	
August-February				5.5	4	3.5	2 Days/Month	Grab	

*Load limits based on design maximum flow shall apply only when flow exceeds design average flow.

**Carbonaceous BOD₅ (CBOD₅) testing shall be in accordance with 40 CFR 136.

***See Special Condition 8.

Flow shall be reported on the Discharge Monitoring Report (DMR) as monthly average and daily maximum.

Fecal Coliform shall be reported on the DMR as a daily maximum value.

pH shall be reported on the DMR as minimum and maximum value.

Chlorine Residual shall be reported on DMR as daily maximum value.

Dissolved oxygen shall be reported on the DMR as a minimum value.

NPDES Permit No. IL0031593

Influent Monitoring, and Reporting

The influent to the plant shall be monitored as follows:

Parameter	Sample Frequency	Sample Type
Flow (MGD)	Continuous	RIT* or as Hardware Allows
BOD ₅	2 Days/Month	Composite
Suspended Solids	2 Days/Month	Composite

Influent samples shall be taken at a point representative of the influent.

Flow (MGD) shall be reported on the Discharge Monitoring Report (DMR) as monthly average and daily maximum.

BOD₅ and Suspended Solids shall be reported on the DMR as a monthly average concentration.

*RIT = Recording, Indicating, Totalizing.

Special Conditions

SPECIAL CONDITION 1. This Permit may be modified to include different final effluent limitations or requirements which are consistent with applicable laws, regulations, or judicial orders. The IEPA will public notice the permit modification.

SPECIAL CONDITION 2. The use or operation of the current facility shall be by or under the supervision of a Certified Class 4 operator. The use or operation of the expanded facility shall be by or under the supervision of a Certified Class 3 operator.

SPECIAL CONDITION 3. The IEPA may request in writing submittal of operational information in a specified form and at a required frequency at any time during the effective period of this Permit.

SPECIAL CONDITION 4. The IEPA may request more frequent monitoring by permit modification pursuant to 40 CFR § 122.63 and Without Public Notice in the event of operational, maintenance or other problems resulting in possible effluent deterioration.

SPECIAL CONDITION 5. The effluent, alone or in combination with other sources, shall not cause a violation of any applicable water quality standard outlined in 35 Ill. Adm. Code 302.

SPECIAL CONDITION 6. Samples taken in compliance with the effluent monitoring requirements shall be taken at a point representative of the discharge, but prior to entry into the receiving stream.

SPECIAL CONDITION 7. This Permit may be modified to include requirements for the Permittee on a continuing basis to evaluate and detail its efforts to effectively control sources of infiltration and inflow into the sewer system and to submit reports to the IEPA if necessary.

SPECIAL CONDITION 8. For Discharge No. 001, any use of chlorine to control slime growths, odors or as an operational control, etc. shall not exceed the limit of 0.05 mg/L (daily maximum) total residual chlorine in the effluent. Sampling is required on a daily grab basis during the chlorination process. Reporting shall be submitted on the DMR's on a monthly basis.

SPECIAL CONDITION 9. During January of each year the Permittee shall submit annual fiscal data regarding sewerage system operations to the Illinois Environmental Protection Agency/Division of Water Pollution Control/Compliance Assurance Section. The Permittee may use any fiscal year period provided the period ends within twelve (12) months of the submission date.

Submission shall be on forms provided by IEPA titled "Fiscal Report Form For NPDES Permittees".

SPECIAL CONDITION 10. The Permittee shall record monitoring results on Discharge Monitoring Report (DMR) Forms using one such form for each outfall each month.

In the event that an outfall does not discharge during a monthly reporting period, the DMR Form shall be submitted with no discharge indicated.

The Permittee may choose to submit electronic DMRs (eDMRs) instead of mailing paper DMRs to the IEPA. More information, including registration information for the eDMR program, can be obtained on the IEPA website, <http://www.epa.state.il.us/water/edmr/index.html>.

The completed Discharge Monitoring Report forms shall be submitted to IEPA no later than the 25th day of the following month, unless otherwise specified by the permitting authority.

Permittees not using eDMRs shall mail Discharge Monitoring Reports with an original signature to the IEPA at the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attention: Compliance Assurance Section, Mail Code # 19
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

SPECIAL CONDITION 11. The provisions of 40 CFR 122.41 (m)&(n) are applicable to this permit and are hereby incorporated by reference.

SPECIAL CONDITION 12. For the existing facility, Discharge No. 001 BOD₅ and Suspended Solids (85% removal required): The arithmetic mean of the values for effluent samples collected in a period of one calendar month shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same time during the same period, except during those periods when the influent is diluted because of high flows if the tributary sewer system is combined. The percent removal need not be reported to the IEPA on DMR's but influent and effluent data must be available, as required elsewhere in this Permit, for IEPA inspection and review. For measuring compliance with this requirement, 5 mg/L shall be added to the effluent CBOD₅ concentration to determine the effluent BOD₅ concentration.