

NPDES Permit No. IL0079464

Notice No. FRB:11031001.bah

Public Notice Beginning Date: **April 27, 2011**

Public Notice Ending Date: **May 27, 2011**

National Pollutant Discharge Elimination System (NPDES)  
Permit Program

PUBLIC NOTICE/FACT SHEET  
of  
Draft New 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:

Village of Big Rock  
P.O. Box 128  
Big Rock, Illinois 60511

Name and Address of Facility:

Village of Big Rock - STP  
Extension of Fourth Street  
Big Rock, Illinois 60511  
(Kane 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 Francis Burba 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 Village of Big Rock.

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, Big Rock Creek is 0.35 cfs.

The design average flow (DAF) for the facility is 0.056 million gallons per day (MGD) and the design maximum flow (DMF) for the facility is 0.225 MGD. Treatment consists of septic tanks, a recirculating sand filter, and UV disinfection.

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.

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

Discharge Number	Receiving Stream	Latitude	Longitude	Stream Classification	Integrity Rating
001	Big Rock Creek	41° 45' 20" North	88° 33' 20" West	General Use	B

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

The stream segment(s) receiving the discharge from outfall(s) 001 is not on the 303 (d) list of impaired waters.

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): 001 STP Outfall

Load limits computed based on a design average flow (DAF) of 0.056 MGD (design maximum flow (DMF) of 0.225 MGD).

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 <sub>5</sub>	4.7 (19)		9.3 (38)	10		20	35 IAC 304.120 40 CFR 133.102
Suspended Solids	5.6 (23)		11 (45)	12		24	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	Daily Maximum shall not exceed 400 per 100 mL						35 IAC 304.121
Ammonia Nitrogen: March-May/Sept.-Oct.	0.70 (2.8)	1.8 (7.1)	2.3 (9.2)	1.5	3.8	4.9	35 IAC 355 and 35 IAC 302
June-August	0.61 (2.4)	1.5 (6.2)	3.2 (13)	1.3	3.3	6.8	
Nov.-Feb.	1.9 (7.5)		3.1 (12)	4.0		6.6	
Phosphorus	Monitor Only						35 IAC 304.123
				Monthly Avg. not less than	Weekly Avg. not less than	Daily Minimum	
Dissolved Oxygen March-July				----	6.25	5.0	35 IAC 302.206
August-February				6.0	4.5	4.0	

\*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. A requirement to monitor and a limit of 0.05 mg/L for residual chlorine when it is used.
8. Submission of annual fiscal data.
9. 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.
10. Notify IEPA upon completion of the proposed STP.
11. Provisions of 40 CFR Section 122.41 (m) & (n).
12. Monitoring the effluent prior to the constructed wetland.

**Antidegradation Assessment for Big Rock STP  
NPDES Permit No. IL0079464 Kane County**

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The subject community has applied for an NPDES permit for a new treatment plant with a DAF of 0.0563 MGD. This is currently an unsewered community, population 351, with tile drains collecting sewage from poorly functioning septic systems. The tile drains are discharging poor quality water to Big Rock Creek in the south and Welch Creek in the north. The proposed plant is a recirculating sand filter system and will discharge to Big Rock Creek via a constructed wetland.

**Identification and Characterization of the Affected Water Body.**

Big Rock Creek (segment DTC-03) has a 7Q10 flow of 0.35 cfs and is a General Use water. Big Rock Creek is not listed as impaired on the draft 2010 Illinois Integrated Water Quality Report and Section 303(d) List. Illinois EPA assessment indicates that this stream segment is fully supporting aquatic life uses. Big Rock 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 "B" at this location. Big Rock Creek is 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 this segment of Big Rock 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. Ammonia is currently discharged in the tile drain effluent at loads believed to be higher than the load from the proposed treatment plant. 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 4.7 ppd whereas the existing loading from the tile drains is estimated to be 15.0 ppd (at 140 mg/L). Likewise, total suspended solids loading is estimated to be higher in the existing tile drains than it will be in the proposed effluent.

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 tile drain effluent 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. Likewise, total nitrogen loading in the proposed effluent may be less than what is currently discharged. 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. Phosphorus discharged will remain in the stream continuum except for that removed by aquatic and terrestrial plants.

### **Purpose and Social & Economic Benefits of the Proposed Activity.**

The proposed project will provide a sewage collection and treatment system for the Village to replace the failing septic systems that are currently discharging poorly treated wastewater to area streams. The residents of the community will enjoy increased protection of local wells, removal of unsanitary septic systems and cleaner streams.

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

The Village provided details of the alternative assessment in a document titled Information for Antidegradation Assessment, NPDES Application, Village of Big Rock.

The Village considered regionalization with neighboring communities but this alternative was rejected due to the cost of transmitting sewage over long distances. The Village's sewage would have to be pumped over five miles to the nearest neighboring sewer system, Fox Metro WRD. The cost of the pipeline and connection fees made this the most expensive option.

Land application was also considered. This option was more expensive than construction of the proposed plant given the increased land requirements for land application. Approximately 72 acres of farm land would be necessary to employ land application including treatment lagoons, storage lagoons and fields.

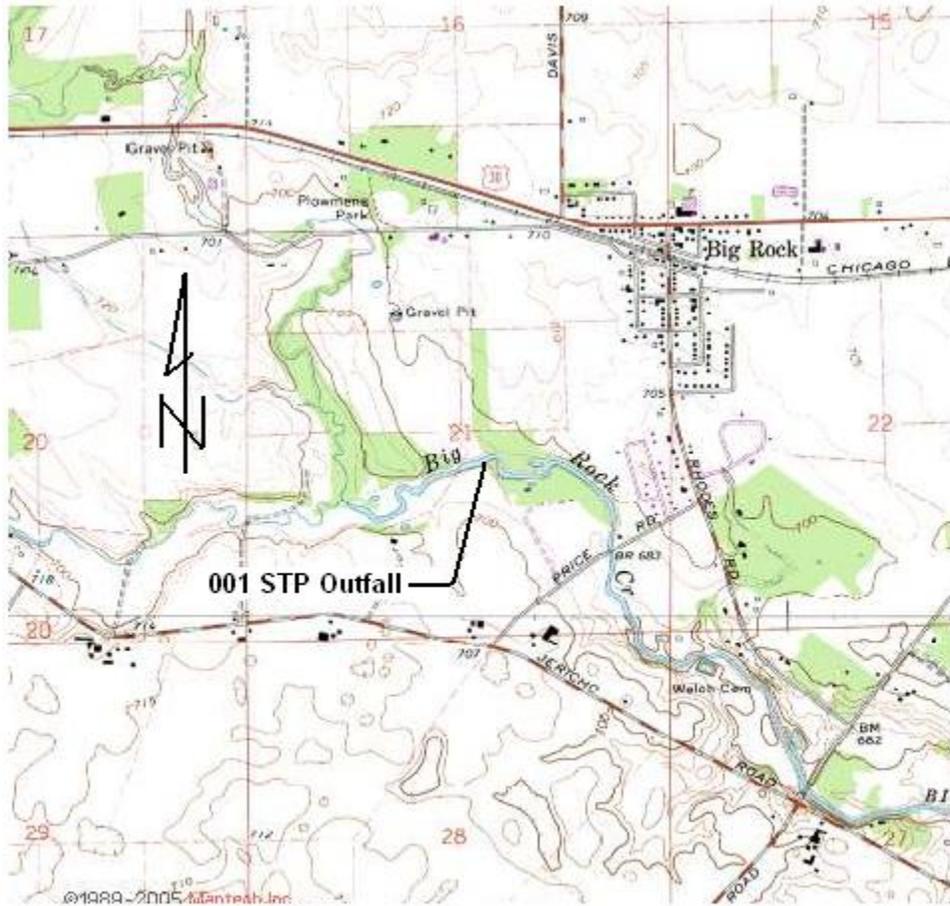
Several other types of treatment plants were considered, but were found to be more expensive than the chosen recirculating sand filter system design. The chosen treatment system was the most economical design and has a high degree of reliability while being easy to maintain and operate.

### **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 December 14, 2009. 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 a sewage collection and treatment system that will replace the unsanitary situation now present. Comments received during the NPDES permit public notice period will be evaluated before a final decision is made by the Agency.



**Village of Big Rock STP  
NPDES No. IL0079464  
Kane County**

NPDES Permit No. IL0079464

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

New (NPDES) Permit

Expiration Date:

Issue Date:

Effective Date:

Name and Address of Permittee:

Village of Big Rock  
P.O. Box 128  
Big Rock, Illinois 60511

Facility Name and Address:

Village of Big Rock - STP  
Extension of Fourth Street  
Big Rock, Illinois 60511  
(Kane County)

Receiving Waters: Big Rock 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

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## NPDES Permit No. IL0079464

Effluent Limitations, Monitoring, and Reporting

FINAL

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

Load limits computed based on a design average flow (DAF) of 0.056 MGD (design maximum flow (DMF) of 0.225 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 expiration date, 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			Sample Frequency	Sample Type
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum		
Flow (MGD)							Continuous	
CBOD <sub>5</sub> **	4.7 (19)		9.3 (38)	10		20	1 Day/Month	Composite
Suspended Solids	5.6 (23)		11 (45)	12		24	1 Day/Month	Composite
pH	Shall be in the range of 6 to 9 Standard Units						1 Day/Month	Grab
Fecal Coliform	Daily Maximum shall not exceed 400 per 100 mL						1 Day/Month	Grab
Ammonia Nitrogen: As (N) March-May/Sept.-Oct.	0.70 (2.8)	1.8 (7.1)	2.3 (9.2)	1.5	3.8	4.9	1 Day/Month	Composite
June-August	0.61 (2.4)	1.5 (6.2)	3.2 (13)	1.3	3.3	6.8	1 Day/Month	Composite
Nov.-Feb.	1.9 (7.5)		3.1 (12)	4.0		6.6	1 Day/Month	Composite
Phosphorus***	Monitor Only						1 Day/Month	Composite
				Monthly Average not less than	Weekly Average not less than	Daily Minimum		
Dissolved Oxygen March-July				----	6.25	5.0	1 Day/Month	Grab
August-February				6.0	4.5	4.0	1 Day/Month	Grab

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

\*\*Carbonaceous BOD<sub>5</sub> (CBOD<sub>5</sub>) testing shall be in accordance with 40 CFR 136.

\*\*\* See Special Condition 12.

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.

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

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

NPDES Permit No. IL0079464

Influent Monitoring, and Reporting

The influent to the plant shall be monitored as follows:

<u>Parameter</u>	<u>Sample Frequency</u>	<u>Sample Type</u>
Flow (MGD)	Continuous	
BOD <sub>5</sub>	1 Day/Month	Composite
Suspended Solids	1 Day/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.

BOD<sub>5</sub> and Suspended Solids shall be reported on the DMR as a monthly average concentration.

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 this 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. 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 8. 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 9. 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 10. The Permittee shall notify the IEPA in writing once the proposed treatment plant expansion has been completed. A letter stating the date that the expansion was completed shall be sent to the following address within fourteen (14) days of the expansion becoming operational:

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 Section 122.41 (m) & (n) are applicable and are hereby incorporated by reference.

SPECIAL CONDITION 12. The Permittee is planning to employ a constructed wetland at this facility. The Permittee shall monitor the effluent prior to the constructed wetland for compliance with the effluent limitations. The Permittee shall monitor for phosphorus before and after the constructed wetland.

