

**MEMORANDUM**

**EFIS Case No. SR-2014-0153**  
**Peaceful Valley Service Company**

TO: EFIS File No. SR-2014-0153

FROM: David Spratt, Utility Operations Technical Specialist II - Water & Sewer Unit

<u>/s/ David A. Spratt</u> Water and Sewer Unit	<u>/s/ Kevin Thompson</u> Staff Counsel
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SUBJECT: Water and Sewer Unit Staff Report

DATE: August 15, 2014

**Introduction**

This report is the Water and Sewer Unit's findings regarding Peaceful Valley Service Company's (Peaceful Valley or Company) plan to comply with the Missouri Department of Natural Resources (DNR) regulations. It is being filed to comply with the Commission's Order of July 29, 2014.

**Background of the Issue**

Peaceful Valley provides waste water treatment to approximately 171 customers by using a single-cell lagoon. This facility has been operating properly and discharging treated waste water into a receiving stream nearby in accordance with its Missouri State Operating Permit, issued by DNR, permit no. MO-0041477. A copy of this permit is included as Attachment A. Sewer discharge permits are not perpetual. They normally expire and may be renewed every five years. Peaceful Valley's sewer operating permit was most recently renewed on January 1, 2014. Among its various provisions, the current permit contains a schedule to comply with ammonia discharge from the treatment facility. The ammonia limit will become effective, according to the permit, on January 1, 2018. Prior to the current permit the amount of ammonia discharge had no limit and ammonia had not been required to be monitored. These new ammonia limits that have been prescribed by DNR for Peaceful Valley's treatment facility to become effective on January 1, 2018 are established at 1.3 milligrams per liter (mg/L) from April 1 to September 30, and 2.9 mg/L from October 1 to March 31. Limits for ammonia are being included in discharge permits, generally, because revised water quality criteria were established by the United States Environmental Protection Agency on August 22, 2013. The new criteria required states to lower the allowable amount of ammonia released in treated waste water. Publication 2481, included as Attachment B, published by DNR, discusses the new ammonia criteria and the ability of certain

types of treatment facilities to meet those new limits. Lagoons, like the one presently treating waste water for Peaceful Valley, are deemed “unlikely to meet ammonia limitations” according to this document. The publication also states, “[m]any treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality criteria.” Water pollution protection is becoming increasingly stringent to protect waters of the state and certain wild life.

### **What Projects are Required by DNR?**

Although operation of the present lagoon is permitted by DNR under the current operating permit issued by DNR, and the permit expires on December 31, 2018, the permit states the following on page 7:

The facility shall attain compliance with the timeframe set for the permittee to upgrade the facility in effort to improve the receiving stream water quality, as soon as reasonably achievable or no later than 4 years of the effective date of this permit. The upgrade of the facility shall be technology that is capable of meeting the new effluent limits for Ammonia as N.<sup>1</sup>

In other words, the Company is required to build a new treatment facility to meet new limits for ammonia discharge as prescribed and required by DNR.

### **Documentation of What DNR Requires**

Documentation of DNR’s requirements simply consists of the operating permit that currently is in effect for Peaceful Valley’s treatment facility included as Attachment A. Publication 2481 generally discussing compliance with ammonia discharge limits is included as Attachment B.

### **Records Showing Dates a compliance project must be completed, etc.**

The operating permit, Attachment A, contains a Schedule of Compliance (SOC) on page 7. In that SOC, three dates were included by DNR, as follows:

- December 1, 2013 – Submit an engineering evaluation and plan for upgrading the facility. Alternatively, if the permittee chooses to eliminate the discharge by connection to another facility, submit a closure plan and schedule for eliminating the discharge.

This was completed December 1, 2013. Peaceful Valley caused an engineering report to be prepared by Integrity Engineering, Inc (Integrity), a consulting engineer, in October 2013.

- July 1, 2014 – Submit an application for construction permit.

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<sup>1</sup> N is the chemical symbol for the element Nitrogen. Ammonia is a chemical compound made up of Nitrogen and Hydrogen molecules.

This has not yet been completed. The reason for this date not being met is that the Company is continuing to evaluate its options and to look for funding mechanisms that would allow it to pay for the upgrades. The Company states to Staff that it is keeping DNR updated as to its progress, and DNR has informally extended this date by eighteen (18) months.

- January 1, 2018 – Complete construction and send certificate of work completed. Submit an application to modify the permit.

This is the firm date by which Peaceful Valley is required to meet the limits for ammonia as prescribed by the current permit.

**Documentation showing detailed costs, etc.**

The engineering report written by Integrity is included as Attachment C. Below is a more detailed analysis of the Company's options.

Company's Options

Integrity's report details the scope of the project, and offers a proposal as the best solution to meet the new permit criteria. The engineering report discusses five options available to the Company and the costs associated with each.

The first option is to upgrade the existing lagoon, either by following existing treatment with enhanced additional treatment, or by converting the facility to an aerated facility then follow with additional treatment. Because of the small size of the lagoon, the shallow depth, and the lack of land to expand, this option does not appear viable.

The second option involves land application of treated waste water, meaning treated sewage discharge would be distributed over a large area, would not flow into a water way (waters of the State), and would not require a discharge permit with ammonia and other limits. The engineering report has determined that the Company would need approximately 46 acres of land at an estimated cost of \$5,000 per acre to properly perform land application. The slope of the hills within the Company's certificated area prohibits land application on presently owned property because of the risk of water flowing into the waterway. An adjacent land owner to the lagoon has told the Company that his land is not for sale. The apparent inability to acquire the needed suitable land, along with the cost of acquiring land, developing a discharge field, and constructing a holding facility that would be used during inclement weather when land discharge does not work well, has prevented study of this option from any further consideration.

The third and fourth options involve mechanical treatment plants, of either an extended aeration or biorotator configuration. Although these types of treatment facilities are commonly used elsewhere, mechanical facilities use more electricity and have higher operations and maintenance

costs than some of the other options available to Peaceful Valley, have blower motors that some consider loud, and can produce odors if not maintained properly.

The fifth option, deemed the most feasible option by Integrity, is a recirculating biofilter system. Integrity has a specific product in mind, manufactured by Orenco Systems, Inc., called the Advantex Ax-Max. The engineering report states that there is less maintenance, lower energy costs, no odors, and no noise associated with this process. It also states that the “operation and maintenance of an Advantex system is very simplistic.”

Cost analyses of these alternatives are outlined in the engineering report.

In addition to these alternatives, the Company also explored an option of pumping wastewater to the city of Owensville to be treated on a wholesale basis. But this option is seen as cost prohibitive because it would require three miles of force main along with easement acquisition, and one or more electric-powered lift stations to not only transport the wastewater this distance but also to an elevation approximately 200 feet higher than Peaceful Valley’s lagoon. Also, available treatment capacity of Owensville’s system is questionable.

#### **What Steps has the Company taken to determine available financing?**

On November 20, 2013, the Missouri Public Service Commission (“PSC”) received a letter from Peaceful Valley Service Company, which letter created the subject case, requesting an annual increase in operating revenue in the amount of \$93,840 prior to beginning construction of the facility in attempt to finance the construction. This dollar amount divided evenly among the 180 sewer customers would increase rates by about \$46 per month according to the Company’s rate request. The current tariffed sewer rates are \$33.53 per quarter. The agreed upon amount in the Company/Staff Disposition Agreement will provide the Company with an annual increase of \$2,355, which does not include funding for future plant. Staff’s normal policies are to only include plant that is in service and is “used and useful,” and not include plant that may or may not be constructed at some future time, as the Company had requested.

Staff inquired of the Company about its efforts to secure financing for this project, or look at other options. The Company was unable to secure a loan from a bank that it normally does business with, because of the Company’s current financial picture, which is a similar situation facing many small water and sewer utilities. The bank suggested that the Company apply for state or federal loans.

The Company reports to Staff that it obtained applications for DNR and the United States Department of Agriculture (USDA) loans only to discover that both agencies do not offer loans to “for profit” companies. Peaceful Valley Service Company is considering either transferring assets to the association, or a nonprofit water and sewer utility as provided for in Missouri Statutes, or converting the existing corporation to such a nonprofit utility. Any of these types of

nonprofit utilities would not be regulated by the Commission, and thus they could set rates as they choose including collecting funds for future plant from customers, as well as the possible eligibility for government grants and low interest loans that are not typically available to investor owned utilities.

To expand on the idea of collecting funds from customers for future plant, Staff also suggested that the Company could seek funding for future plant through the Peaceful Valley Property Owners Association, Inc., which presumably could assess members a charge for the purpose of funding future utility plant. Notably, all customers are members of the Association. Many of the Association's members do not have homes and are not utility customers, and presumably the Association would only attempt to impose such a special charge on those members who are Company customers in order to make such a proposal workable for all members. This option has been discussed but apparently has not yet been seriously considered, although Staff believes that if the utility customers wish to impose such a special charge on themselves for this purpose then they could likely do it in some manner through their association or some associated entity created for funding matters.

Finally, in the Company's request, it asked for future plant to be included in rates, based on a twenty-year payback. At this time, the future plant, as contemplated by the Company, is not a substitute for financing because the facility needs to be completed by the end of 2017 and the funds are to be collected over a twenty-year period. Therefore, the funds would not be available to pay the costs of construction as those costs occur.

**Documentation detailing requests or inquiries regarding financing and results of those requests?**

The Company does not have any documentation to provide in regards to the construction permit or financing. The Company states it is unable to issue an engineering contract until financing is available and is unable to apply for a construction permit from DNR until an engineering contract is issued. The Company did not receive documentation from the bank for the loan refusal because the request was verbal. The Company acquired applications for loans from DNR and USDA, but determined it did not qualify as both agencies only offer loans to not-for-profit entities.

**Conclusion**

Peaceful Valley has been given the task of removing ammonia from its waste water effluent to meet new discharge standards and it is unable to do so with its present means of waste water treatment. The Company is looking at options and costs for upgrades to comply with its new permitted effluent limits. The engineering firm has proposed a solution to the Company with an estimated capital cost of \$1,114,880, and a twenty (20) year life cycle estimated cost of \$46.12

per month per customer. The Company has thus far been unable to secure a loan from a bank, DNR or USDA to pay for the upgrades.