



**Date:** January 3, 2013

**To:** Thomas J. Bonfield, City Manager

**Through:** W. Bowman Ferguson, Deputy City Manager

**From:** Donald F. Greeley, Director, Water Management

**Subject:** Sole Source Purchase Agreement with I. Krüger Inc. for the Purchase of the ANITA Mox Ammonia Removal System

### Executive Summary

The Falls Lake and Jordan Lake rules that become effective in 2016 will require significant reductions in the amounts of nutrients discharged from the North and South Durham Water Reclamation Facilities (NDWRF and SDWRF). The recent Water Reclamation Facility Master Plan developed by Hazen and Sawyer recommended that the Department utilize the patented and proprietary ANITA Mox nitrogen removal system (“ANITA Mox System”) owned by I. Krüger Inc. (Krüger) as the preferred approach to meet the stringent nutrient limits at SDWRF. There is no competitive process that performs at the same level of the ANITA Mox System, and Krüger is the only source and vendor of the ANITA Mox System. Staff recommends the direct purchase of the system equipment from Krüger. The equipment will be installed in an upcoming construction contract at the SDWRF.

Additionally, Krüger and the City have negotiated a 10-year right-of-entry agreement that will allow Krüger to access the site to add or remove “seeded” biological media at the plant. In return for this right of entry agreement, Krüger has agreed give the City a discount on the purchase price for the ANITA Mox System.

### Recommendation

The Department of Water Management recommends that the City Council:

1. Receive a presentation on the Krüger ANITA Mox Side Stream Removal Process
2. Authorize the City Manager to execute a purchase contract with I. Krüger Inc. for the purchase, delivery, startup and monitoring services for the ANITA Mox System in the total amount not to exceed \$647,100.00; and
3. Authorize the City Manager to enter into a 10-year right-of-entry agreement allowing I. Krüger Inc. access to the site to harvest “seeded” media.

### Background

The City’s two water reclamation facilities, North Durham WRF and South Durham WRF, were built and have been modified over the years to treat wastewater according to regulatory requirements. During preparation of the Water Reclamation Facility Master Plans, Hazen and Sawyer identified an opportunity to control and reduce the facility’s influent ammonia load through the use of an emerging side stream technology referred to as ANITA Mox Nitrogen Removal. This process relies on patented and proprietary technology that incorporates various methods of fixing and maintaining a slow growing biological organism capable of removing nitrogen from the plants’ waste stream with as much as a 70% overall energy and cost saving per pound of nitrogen. Of all the available side stream technologies, only the ANITA Mox System would achieve the highest reduction of nitrogen at

the lowest cost over time. In other words, none of the other available nitrogen reducing side stream technologies could perform at the level of the ANITA Mox System. The ultimate selection of the ANITA Mox System requires that we also select the sole vendor and company authorized to sell the ANITA Mox System. The SDWRF Master Plan recommends the ANITA Mox system as being the best suited technology for the SDWRF application.

The City has entered into a design contract for the detailed design of the ANITA Mox system with Hazen and Sawyer (Engineer). This was authorized by council under Amendment #1 of the Hazen and Sawyer Master Plan contract on September 4, 2012. The Engineer has assisted the City in negotiating the agreement with Krüger.

**Issues/Analysis**

The Department requests is entering into a direct procurement-only contract with Krüger and a separate agreement for the long term utilization of the SDWRF as a harvesting site for the ANITA Mox biological media. The procurement contract will purchase the equipment necessary for the process and the City will have it installed by a contractor. State bidding law requires that the City grant an exception to competitive bidding requirements before any purchase agreement is entered into. Further, State law provides exceptions to competitive bidding applied to the purchase of apparatus, supplies, materials, or equipment when a) performance or price competition for a product are not available, or b) a needed product is available from only one source of supply. The selected technology performs more efficiently than other available technologies and will realize a greater cost savings over time. Additionally, the selected technology is patented and no other vendors are licensed to provide the ANITA Mox system. The Department has requested and received an exemption from the City fiscal policy (FP 501) from the City Manager as an additional step to conform to the City’s bidding policy.

**Alternatives**

Not moving ahead with the contracts with the Krüger contracts would endanger the City’s ability to comply with the Jordan Lake rules. The City would also lose a unique opportunity for cost savings on the proposed nutrient treatment processes. The City has already entered into an engineering contract for the design of the identified system. The City could also choose to move forward with an alternative technology; as noted, other less costly alternatives would not achieve the desired levels of nutrient reduction and therefore were not recommended by the Engineer.

**Financial Impacts**

This project is funded in the CIP Wastewater Process Rehab and the Enhanced Nitrogen Removal Capital Improvement Projects. See below for further information.

Capital Project	Account Code	Amount
Enhanced Nitrogen Removal	4100P765-731000-P2131	\$647,100.00

**SDBE Summary**

This item was not reviewed by the Department of Equal Opportunity/Equity Assurance for compliance with the Ordinance to Promote Equal Business Opportunities in City Contracting

**Attachments**

Attachment 1 – ANITA Mox Recommendation by Hazen and Sawyer

Attachment 2 – Procurement Contract between the City of Durham and Krüger  
Attachment 3 – ANITA Mox Scope of Supply by Krüger  
Attachment 4 – Long term Farming Contract between the City of Durham and Krüger  
Attachement 5 – Presentation Kruger Contract; ANITA Mox Side Stream Treatment