

REDMON ENGINEERING CO. / RUBICON ENVIRONMENTAL SERVICES, LLC  
189 N. LAPHAM STREET  
OCONOMOWOC, WI 53066  
Phone: 920-988-7756 Email: markraether@rubiconenviro.net

---

RES Quotation: #21-3123R

Date: July 23, 2021

Site: Racine WWTP – Racine, WI

Service: Fine Bubble Diffuser Replacement

**Item #1: Scope of Services (4 Trains) for Diffuser Replacement – Ceramics with Membranes**

The following is a list of materials and services proposed for the diffuser replacement in four (4) Aeration Trains at the Racine WWTP site. Each Aeration Train contains two (2) Passes with a total of four (4) Aeration Grids containing  $\pm 2,100 - 9"$  ceramic disc diffusers. The total number of diffusers to be replaced is approximately 8,400. Four (4) site visits are required to complete the diffuser replacement. The furnished materials & work with a crew of six (6) will include:

- ***Supply & shipment of the 8,400 – 9" Membrane Diffusers and Subplates.***
- Removal of the existing ceramic disc diffusers.
- Installation of new membrane diffusers, new subplates and the existing diffuser retainer rings. Silicone grease application on existing retainer rings as needed.
- Disposal of old ceramic diffusers / "O" rings and related debris by others.
- Correction of minor damage to existing aeration grids. **This will involve the replacement of broken PVC piping, damaged diffuser holders** or fixed joints that have been damaged and modification of any SS support parts that have come disconnected.  
**Note: Major damage will involve a separate work order.**
- Leak and level testing of Grids after tank filled with water (1" over diffusers) and blowers activated. It is anticipated that water will be pumped into the basin and the leak and level test conducted soon after diffuser replacement completion.
- Assistance to operators in restart of the aeration system.
- Supply all necessary tools for work described below (access ladders by others).
- Field Service Report detailing all observations, instructions and necessary corrections submitted within three (3) weeks of work completion.

**Notes:**

1. The draining and cleaning of the Aeration Trains will be by others.
2. Pallets of new membrane diffusers and PVC subplates to be located near the Aeration Train to be worked in.
3. Disposal of the removed diffusers and related debris will be by others. Disposal dumpster to be located near Basins and provided by others.
4. All parts for installation and correction to be supplied by RES.
5. Ladders for access and hoist / davit to the aeration basins will be by the City.
6. Plant operators to fill the Aeration Train for leak test upon request. Based on previous work, the Basin filling should take approximately 3 hours.
7. Some assistance (minimal) will be required by the plant operators as work progresses within the Aeration Basin.

**ITEM #1 Quotation:**

Material & Crew of six (6) on site for all work stated above. . . . . **\$128,500.00\***

\* Expenses included - travel to site, rental car, lodging, meals, etc.

Note: Payment terms for this quotation are “net 30 days” per Invoice.

\$70,000 due upon shipment of the Membrane Diffusers & PVC Subplates

\$58,500 due upon completion of diffuser replacement.

Respectfully submitted,

Mark Raether, P.E.

Rubicon Environmental Services, LLC