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Metro

June 10, 2004

TO: BOARD OF DIRECTORS

THROUGH: ROGER SNOBLE
CHIEF EXECUTIVE OFFICER

FROM: JOHN B. CATOE, JR.
DEPUTY CHIEF EXECUTIVE OFFICER

SUBJECT: REVERSE OSMOSIS (RO) AND BOTTLED WATER SERVICES

ISSUE

At the May 2004 Operations Committee meeting, Item #37 Reverse Osmosis and Bottled Water Services was presented to the Committee and not approved. This procurement was to award a five-year contract to D.S. Waters to install and maintain reverse osmosis water purification systems and to deliver bottled drinking water to Metro Bus and Rail operating divisions in an amount not exceed $493,227. The Committee requested staff to report back with additional details regarding the item before it could be considered for approval.

DISCUSSION

Providing purified drinking water to division operational staff has been in effect for nearly twenty years at the MTA although this is not required by any of the union collective bargaining agreements. Currently, 5,000 water bottles are delivered each month. Deliveries are made on a bi-weekly basis to all the operating divisions. The bottled water is dispensed through 377 rental water dispensers located in lunchrooms, training rooms, dispatch offices and various workstations. The water bottles are typically stored near the dispensers or in a central storage area away from the dispensers due to lack of space.

Before the bus and train operators begin their daily rollout, many fill their personal water containers with the delivered water before they board their buses. There is no convenient source of water for our operators after they leave the division. On average, each division consumes nearly 40 gallons (8 bottles) each day. This means that the water bottles on the dispenser that the operators are using must be replaced frequently by either the operators or by others. In addition, the water bottles are stored at each location and take up too much space, create clutter and pose tripping, stacking and lifting hazards if not properly stacked or stored.

Currently, the bottled purified water service is provided through multiple purchase orders. Management of these purchase orders is inefficient because it takes considerable staff time and does not lend itself to economies of scale.

The proposed reverse osmosis units to be installed at the divisions will provide the same quality drinking water as the bottled purified water we currently procure. Each unit has a self-contained water purification system assembly that consists of filters, RO membranes, booster pump and an auxiliary tank and has a compact space saving design compared to the clutter and large space requirement of bottled water service. A picture of a typical RO unit and its specification is shown in attachment A. The RO systems will help reduce safety hazards and free-up storage that can be utilized for other equipment.

The existing bottled water purchase orders are scheduled to expire on June 30, 2004, which is at an estimated annual cost of $169,000. The cost of the new service, including amortized cost of the installed reverse osmosis equipment is $89,677 per year. This is a 47% savings compared to the existing service cost. In light of the fiscal constraints that the agency is currently facing, substantial staff time was spent in procuring this new contract to achieve these savings.

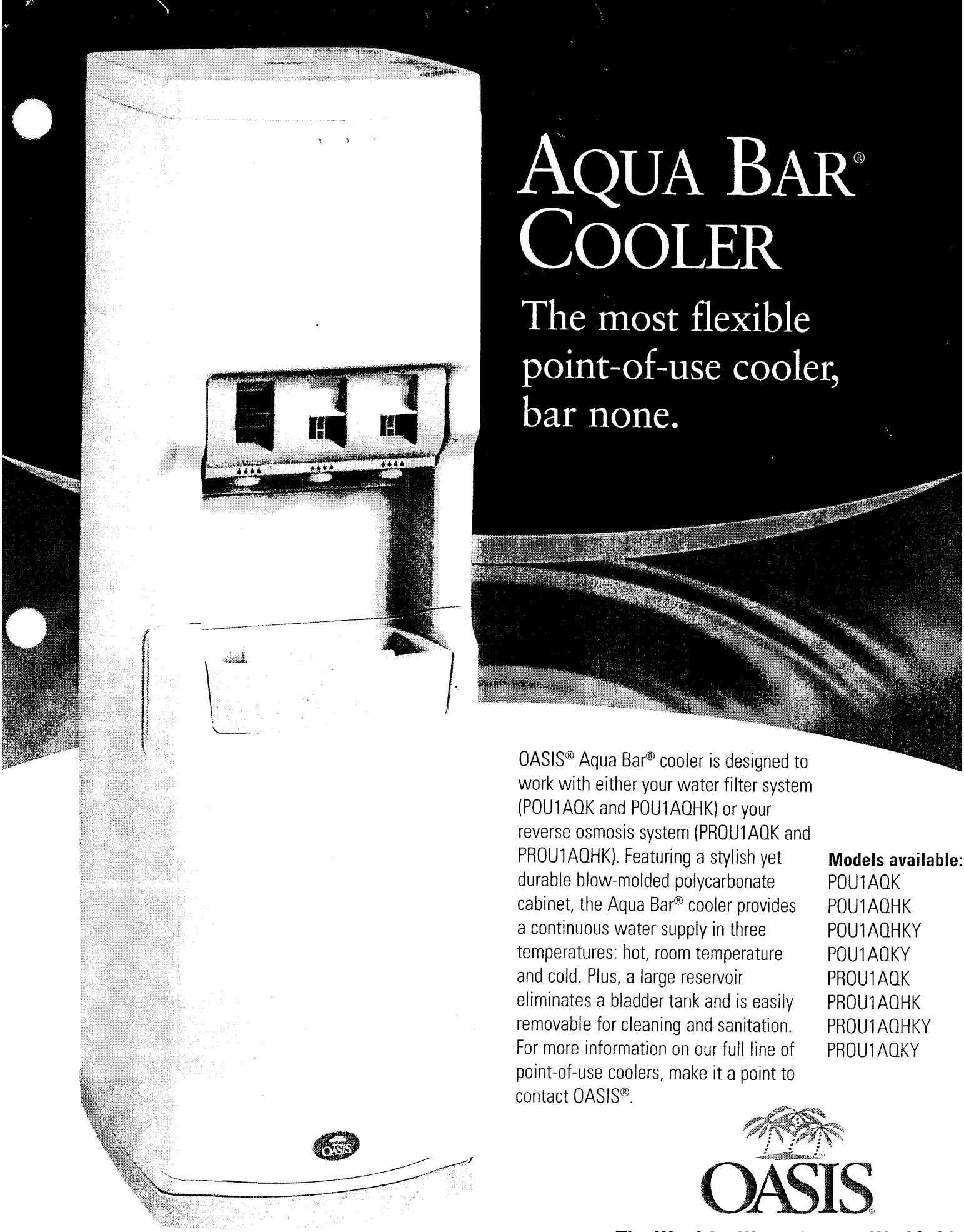
A recent survey conducted by staff has shown that five other agencies provide bottled and/or reverse-osmosis filtered water for their work force. The five agencies that provide this service for their employees are: San Francisco Transit (BART), Foothill Transit, SCRRA (Metrolink), Municipalities (Bay Area) and Orange County Transit (OCTA). San Diego Transit provides vending machines only at the employees work locations.

NEXT STEPS

If this item is approved, staff will direct D.S. Waters to begin the removal of excess bottled water coolers from the divisions and immediately begin the installation of reverse osmosis units. If the item is not approved, staff will begin to demobilize the usage of bottled water service and direct the vendor to recover their equipment and discontinue the service altogether. Staff will notify the workforce of the discontinuation of the service.

ATTACHMENT

A. RO Water Purification Unit



AQUA BAR® COOLER

The most flexible point-of-use cooler, bar none.

OASIS® Aqua Bar® cooler is designed to work with either your water filter system (POU1AQK and POU1AQHK) or your reverse osmosis system (PROU1AQK and PROU1AQHK). Featuring a stylish yet durable blow-molded polycarbonate cabinet, the Aqua Bar® cooler provides a continuous water supply in three temperatures: hot, room temperature and cold. Plus, a large reservoir eliminates a bladder tank and is easily removable for cleaning and sanitation. For more information on our full line of point-of-use coolers, make it a point to contact OASIS®.

Models available:
POU1AQK
POU1AQHK
POU1AQHKY
POU1AQKY
PROU1AQK
PROU1AQHK
PROU1AQHKY
PROU1AQKY

OASIS®

The Word for Water Coolers Worldwide

SQC™ Series

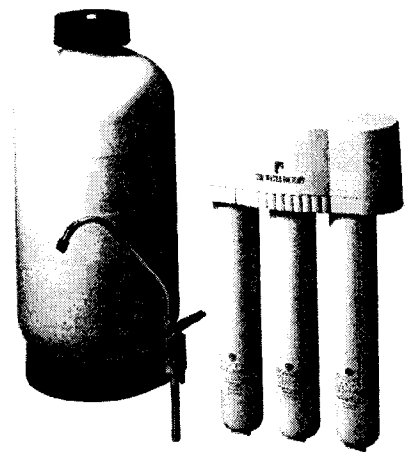
Reverse Osmosis System

WATER FACTORY SYSTEMS®

Description
- Under-the-counter reverse osmosis drinking water system

Application
- May be used on municipal and private water supplies
- Recommended for residential applications

Features
- NSF certified and listed
- *Sanitary Quick Change* filter cartridges for easy installation and service — no spills, no mess
- 5 micron graded density sediment pre-filter for optimal dirt holding capacity
- Granular activated carbon pre-filter to protect membrane*
- High Flux TFC or CTA RO Membrane
- Radial flow block carbon polishing filter for highest faucet output
- Patented stealth flow control
- Slim profile, space saving design
- Installation kit includes feedwater valve, 2.5 gallon (9.5 liter) storage tank, long reach air gap faucet
- High performance automatic shut-off valve



SQC Series

SQC Series Specifications

Model	Part#	Membrane	Membrane Capacity**	Application Guidelines
SQC CTA	04-041	CTA	13-19 GPD (49-72 LPD)	chlorinated water
SQC 2	04-043	TFC	22-33 GPD (83-125 LPD)	non-chlorinated water
SQC 3	04-045	TFC	22-33 GPD (83-125 LPD)	chlorinated or non-chlorinated water
SQC 4	04-063	TFC	22-33 GPD (83-125 LPD)	chlorinated or non-chlorinated water

NOTES: * For SQC3 and SQC4 models

** Capacity based upon water feed of 350 ppm (mg/l) TDS @ 60 PSI (413.7 kPa) @ 77°F (25°C)
Recommended feed water pressure 40-100 PSI (275.8-689.5 kPa)

SQC CTA, SQC 2, SQC 3 Dimensions 16"H x 11"W x 4.2"D (41cm H x 28cm W x 10.7cm D). **Shipping weight** 24 lbs. (10.9 Kg)

SQC 4 Dimensions 26"H x 17"W x 16"D (66cm H x 43cm W x 41cm D). **Shipping weight** 21 lbs. (9.5 Kg)

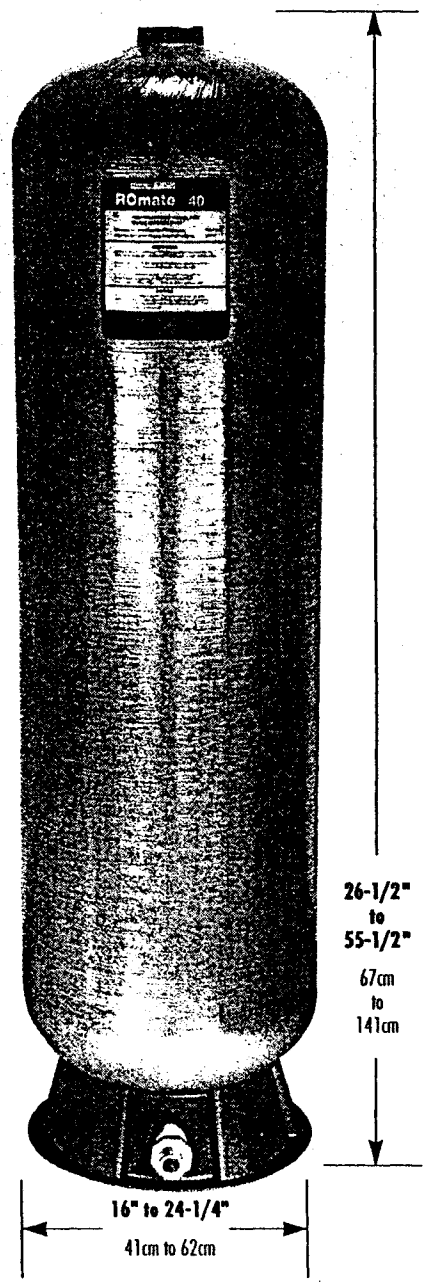
Feed Water Requirements

Parameter	Limits	Parameter	Limits
pH-CTA	5.5-8	Hydrogen Sulfide	none allowable
pH-TFC	4-11	Temperature-CTA	40-85°F (4.4-30°C)
Hardness	<350 ppm (mg/L)	Temperature-TFC	40-100°F (4.4-30°C)
Iron (Fe)	<0.1 ppm (mg/L)	Total Dissolved Solids-CTA	up to 1,500 ppm (mg/L)
Turbidity	<1 NTU	Total Dissolved Solids-TFC	up to 2,000 ppm (mg/L)
Manganese	<0.05 ppm (mg/L)	Water Pressure	40-100 PSI (275.8-689.5 kPa)

CAUTION: Do not use where water is microbiologically unsafe or with water of unknown quality. Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts. Water supplies that exceed limits for hardness, iron, manganese, hydrogen sulfide require pre-treatment.

Water at its Finest!™

Reverse Osmosis Permeate Storage Vessels



100% nonmetallic, seamless vessels will never chip, rust, dent or leak.

Removable air cell allows for easy service and sanitization, or replacement as needed.

All materials used in construction are FDA-approved.

125 psig maximum operating pressure; 120° F maximum operating temperature.

Five-year warranty from the date of manufacture.

Model No.	Capacity (gal./liter)	Height (in./cm.)	Diameter (in./cm.)	System Connection	Assembly Wt. (lbs./kg.)
ROmate 15	14.5 55.1	26-1/2 67	16 41	1" male NPT	15 6.8
ROmate 20	19.8 75.2	32-1/4 82	16 41	1" male NPT	19 8.6
ROmate 30	29.5 112.1	44 112	16 41	1" male NPT	23 10.5
ROmate 40	40.3 153.1	56-3/4 144	16 41	1" male NPT	30 13.6
ROmate 80	86.7 329.5	55-1/2 141	24-1/4 62	1-1/4" male NPT	58 26.4

Model No.	PSI Precharge	System Shutoff Pressure (gal./liter)							
		30	40	50	60	70	80	90	100
ROmate 15	10	6.5 24.6	8.0 30.1	9.0 33.9	9.7 36.7	10.3 38.9	10.7 40.6	11.1 41.9	11.4 43.1
	20	3.2 12.3	5.3 20.1	6.7 25.4	7.8 29.4	8.6 32.4	9.2 34.8	9.7 36.7	10.1 38.3
ROmate 20	10	8.9 33.5	10.9 41.1	12.2 46.3	13.3 50.2	14.0 53.1	14.6 55.4	15.1 57.3	15.5 58.8
	20	4.4 16.8	7.2 27.4	9.2 34.7	10.6 40.1	11.7 44.2	12.5 47.5	13.2 50.1	13.8 52.3
ROmate 30	10	13.2 50.0	16.2 61.2	18.2 69.0	19.7 74.7	20.9 79.1	21.8 82.5	22.5 85.3	23.1 87.6
	20	6.6 25.0	10.8 40.8	13.7 51.8	15.8 59.8	17.4 65.9	18.7 70.7	19.7 74.7	20.6 77.9
ROmate 40	10	18.0 68.2	22.1 83.7	24.9 94.3	27.0 102.1	28.5 108.1	29.8 112.8	30.8 116.6	31.6 119.7
	20	9.0 34.1	14.7 55.8	18.7 70.7	21.6 81.7	23.8 90.0	25.5 96.6	26.9 102.0	28.1 106.4
ROmate 80	20	19.4 73.4	31.7 120.0	40.2 152.2	46.4 175.7	51.2 193.7	54.9 207.9	58.0 219.4	60.5 228.9
	30	X X	15.9 60.0	26.8 101.4	34.8 131.8	40.9 155.0	45.8 173.3	49.7 188.1	52.9 200.3

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