

TO: James L. App, City Manager
FROM: Doug Monn, Public Works Director
SUBJECT: Mobile Water Treatment Lease for Ronconi Wells
DATE: April 15, 2008

NEEDS: For the City Council to consider authorizing a short-term lease agreement with Pall Corporation for a mobile water treatment unit at the Ronconi Wells.

FACTS:

1. The City has 19 production wells which pump groundwater from the Paso Robles Groundwater Basin and the Salinas River underflow. These wells are currently in operation 24 hours a day, 7 days a week in order to meet peak summer demands.
2. The City's current maximum summertime production capacity is roughly equivalent to summertime demands and there is almost no excess production capability. If the City's production is reduced do to mechanical or electrical failures there is a direct impact on system storage. During a heat wave last season, City reservoirs dropped 16 feet in a 6 day period. Additionally a 6-hour power outage in the Sherwood Park area resulted in an additional storage reduction of 2.5 feet.
3. Ronconi Wells #1 and #4 are located along the Salinas River at the southern end of the City. Due to the proximity of these wells to the Salinas River, they are classified as Groundwater Under the Influence of Surface Water. The wells require treatment to comply with turbidity and the secondary MCL (maximum contaminant level) for manganese
4. The Ronconi Wells would add approximately 800 gallons per minute, about 10% of the City's current production.
5. Pall Corporation has a mobile microfiltration unit, with pretreatment oxidation, which will provide effective treatment for the Ronconi wells that satisfies DHS requirements. This will allow the Ronconi water to be integrated into the City's water distribution system to help meet peak demands.
6. Minimum tank levels required to provide emergency and fire protection in the Golden Hills Reservoirs is 18.6 feet. Without the production contribution from the Ronconi wells it is very likely that the reservoirs will fall below this level.
7. Pall allows for short-term leases, 3 to 6 months, to meet peak summer demands. The unit is returned to Pall at the end of the lease, and the wells taken off-line.

ANALYSIS &

CONCLUSION: The City's water demands often outpace production capabilities during peak season. Water conservation outreach will continue, but thus far has not yielded significant decreases in demand.

The mobile treatment unit lease is a way of meeting seasonal peak demands until Nacimiento water deliveries begin in summer 2010, or until additional wells are developed. An additional benefit of reactivating the Ronconi Wells would be to help establish beneficial use of the full 4,600 acre-feet allotment in the City's Salinas Water Rights Permit. In 2005, the City filed a 4-year extension to allow the City additional time to establish beneficial use of the allotment. Last year, the City pumped only 4,023 acre-feet of the allotment.

The mobile units are available on a "first come, first serve" basis. Water Division Staff have conveyed the City's interest in leasing a unit for beginning in June (the earliest a system will be available) through October. The project cost summary is provided below:

Five Month Rental of Pal Mobile Treatment Unit.....	\$ 160,000
Site security and temporary fencing:	\$ 19,010
Process Chemicals (based on last years actual O&M costs).....	\$ 10,000
 Total Project Cost.....	 \$ 189,010

Based on the total project costs and the anticipated production volume of water, this project will add approximately \$360 per acre-foot of water produced.

POLICY

REFERENCE: Integrated Water Resource Management Plan and Title 22 CCR

FISCAL

IMPACT: Total project cost for five months of operation will be approximately \$189,010. Over the coming year Staff will aggressively pursue options for new river well that will help satisfy summertime demand and simultaneously assist in perfecting the City's river underflow entitlement. There are sufficient resources in available the Water Operations Fund to cover the cost of this effort.

OPTIONS:

- A. Adopt Resolution No. 08-xx authorizing:
 - 1. A purchase order to Pall Corporation for an amount not to exceed \$160,000.
 - 2. Authorizing a purchase order for Inhouse Security Services for an amount not to exceed \$17,850.
 - 3. A purchase order to Central Coast Fence for an amount not to exceed \$1,160, and
 - 4. Additional staff expenditure of \$10,000 for additional chemical expenses.
- B. Amend, modify or reject the above option.

Prepared by: Christopher Alakel, Water Resources Manager

Attachments: (4)

- 1) Quotation from Pall Corporation
- 2) Quotation from In-house Security Services
- 3) Quotation from Central Coast Fence
- 4) Resolution



Inhouse Security Service
 PO Box 1884
 Paso Robles, CA 93447
 805-238-7728 / 805-782-9624

Security Service Proposal

Proposal Date	3/18/2008	Proposal #	143
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To: Name / Address
Paso Robles Water Division Attn: Mike Maaser 1230 Paso Robles St Paso Robles, CA 93446



PP0.15794

Proposal Void Date	Inhouse Security Service Rep	Proposed Payment Terms	Proposed Site Location			
12/31/2008	Shawn Withey	Net 30	330 Paso Robles St			
Proposed Service Description			Officers	Est. Hrs	Rate	Est. Total
Security Foot Patrol Service from 9:00pm to 5:00am Monday - Thursday and 9:00pm Friday to 5:00am Monday			1	88	18.50	1,628.00
4 Random Security Mobile Patrol Service Drive Through per day based on hours site is unoccupied.			Mobile		700.00	700.00
Discounted Rate for City Contract			Disco...	88	-1.50	-132.00
Proposal is Based on Weekly Hours. Starting Date June 7th for Approximately 150 Days						
			Est. Total	\$2,196.00		

Above you will find our company's detailed proposal that you have requested. Our Security Management Team's over 20 years of Experience in the field and Unequaled Personnel can develop a program that will consistently meet or exceed your Security protection needs. If you should have any questions or require more information, please feel free to contact us.

To except this proposal, please sign, date and return to us before the proposal void date or start date.

Authorized Signature

Printed Name

Date Signed

We thank you for the opportunity to serve you with the best! Security team in the industry

Fax #

805-238-8982

E-mail

shawn@inhousesecurity.biz

Web Sites

www.inhousesecurity.biz (or) www.inhouse...

540 S 4th St, Grover Beach, CA 93433

Ph (805)481-1460 Fx (805)481-2405

Acct/Admid/Temp Fence Fx (805)574-1018

Contractors License #463992

Central Coast Fence**Temporary Fence Quote Contract**

To: City of Paso Robles	Job Name: Ranconi Well
Phone: 237-3866	Job Address: 330 Paso Robles Street
Fax: 237-6596	Todays Date: March 18, 2008
Attn: Aaron	Estimator: Nancy Kendrick per Chris Lundberg

Proposal to drop off and pick up as follows;

Approximately 400' of temporary fence panels for a term of 5 months

Price: \$570.00

This quote may be withdrawn if not accepted within 10 days

By signing below, customer understands and accepts the following terms and conditions:

- A) This quote does not include sand bags for stability of panel style fence. They can be provided for an additional charge of \$10 per bag. Customer is responsible for maintaining fence, and any damages caused by fence tipping or blowing over.
- B) The price quoted includes one trip for delivery, and one trip for pick up. Any additional trips to the jobsite will be billed to the customer at a rate of \$125/hour.
- C) Contractor/Owner is responsible for all permits and code requirements, and compliance with any subdivision CCR's.
- D) Fence materials are installed in fair condition. Customer is responsible for any and all damage to fence materials while in their possession. Damaged materials will be billed at the end of the rental term.
- E) The price quoted above is the one 6 month term, unless stated on this contract. The price for a second 6 month term shall be 1/2 the original 6 month term price, if paid prior to the expiration of the rental term. Central Coast Fence does not pro-rate
- F) This quote does not include tension wire, corner braces, gate post reinforcements, or extra bracing of any kind. If you require any extra bracing, please contact the estimator above. I/we understand that should we require/request any bracing we will be charged labor and material costs, above and beyond the price quoted above.

Customer Signature

Date of Acceptance

**Pall Corporation
Budgetary Proposal**

Pall Aria™ Mobile MF System



CITY OF PASO ROBLES, CA



March 11, 2008

Submitted to:

**Mike Maaser
City of Paso Robles, CA**

Submitted by:

**Pall Corporation
25 Harbor Park Drive
Port Washington, NY 11050**

March 11, 2008

Pall ARIA Mobile Microfiltration System

Pall Microfiltration System

City of Paso Robles, CA

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- to avoid publication or other disclosure of this document or the information it contains to any third party without the prior approval of Pall Corporation.
- to make only those copies needed for recipient's internal review, and
- to return this document and any copies thereof when they are no longer needed for the purpose for which furnished or upon the request of Pall Corporation.

Pall ARIA Mobile Microfiltration System
City of Paso Robles, CA

Pall Microfiltration System

PALL ARIA™ MOBILE MICROFILTRATION SYSTEM

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Pall ARIA Mobile Microfiltration System

Pall Microfiltration System

City of Paso Robles, CA

SECTION ONE

Process Description

1.1 Pall Aria™ Mobile Microfiltration System Description Overview

The Pall ARIA Mobile Microfiltration (MF) System is a self-contained mobile filtration plant capable of operating at a maximum 800 GPM. Setup of the system will be by others with construction technical advice provided by Pall. The system includes the components as identified in our Scope of Supply.

Parameters	Pall Aria™ Mobile Microfiltration System
	Process Flow To Be Determined (TBD)
Percent Recovery	> 95%
# of Racks	2
Number of Modules (Treated)	TBD
Number of Modules (Untreated)	TBD
CIP Interval (Days)	TBD

Pall ARIA Mobile Microfiltration System
 City of Paso Robles, CA

Pall Microfiltration System

Microfiltration Module Description

The Microza Microfiltration modules are specially designed for municipal drinking and wastewater processing applications. These modules use proprietary, 0.1 micron rated PVDF (Polyvinylidene fluoride) hollow fiber membrane technology that support high and stable flux rates and constructed with advanced bonding techniques for an exceptionally strong module design.

The Microza Microfiltration Modules operate in an outside-in mode with a small amount of recirculation. In conventional filtration or single pass filtration, the membrane filter is perpendicular to feed flow direction. Solids are dead end filtered by the media and are generally removed when the filters are backwashed. For Microza modules, the membranes are placed parallel to the feed direction and only clean liquid passes through the membrane. Two exit streams are produced during filtration: filtrate or permeate and the recirculation. The filtrate is the processed water and the recirculation is a small portion of the flow that is returned to the feed stream. This flow stream is taken from the top of the module and ensures complete utilization of the available filter area by increasing the velocities in the upper end of the module. Solids retained on the filter are removed via periodic backwashing, air scrubbing and chemical cleaning.

Microza Microfiltration (hollow fiber) membranes provide:

- ❑ A very high filter area (50m²) per module
- ❑ A small footprint,
- ❑ Low energy requirements,
- ❑ Low system hold-up and efficient regeneration.
- ❑ High porosity membranes

1.3 Mobile Microfiltration System Operation

Water is pumped through strainers into the system then through the supply manifold to the module rack holding Microza Microfiltration Modules. Each module rack is fed an equivalent flow rate.

- Forward Flow
The feed pumps are controlled to maintain a variable feed pressure. As water flows through each module, the module filaments will gradually foul, and the pump speed will increase automatically to increase feed pressure as required to maintain the filtrate flow set point. At the same time a control valve at the inlet to the unit adjusts to maintain appropriate flow to the rack.

- Reverse Filtration & Air Scrub (Typical)
Periodically, the module racks will go through a combined reverse filtration (RF), air scrub (AS) cycle that cleans the modules. First isolation valves are closed. The RF backwash valves open. The RF pump, which takes filtrate from the filtrate header, modulates to maintain the RF flow setpoint, at which time clean filtrate is pumped through the module filaments in the reverse direction. This flow is combined with compressed air and is maintained for a short period of time and is diverted to the drain. As the air bubbles up the outside of the fibers, the air shakes them vigorously, loosening particulate adhering to the fiber skin. At the end of this time period, the RF pumps speed up and flush the system. At the end of this cycle, the valves revert and the control block goes back on line.

- Enhanced Flux Maintenance (EFM)
To further enhance the performance of our system, we have developed a new step in the operation of our system. We now incorporate a short chemical soak with chlorine or acid depending on the water source and have called it an Enhanced Flux Maintenance (EFM). The EFM or chemical soak reduces the daily TMP rise and assists with reducing the system's transmembrane-pressure. The Chemical soak is an automated procedure and can be utilized on a daily basis or a weekly depending on the solids loading and quality of feed water.

Below outlines the typical steps involved with the procedure.

400-ppm Chlorine Soak (EFM):

- Add 400-ppm of Chlorine to the module
- Allow to soak for 30-minutes with filtrate
- Reverse Flush system with water
- Return back to forward flow – back on-line

Complete EFM takes less than 90-minutes.

▪ **Clean In Place (CIP)**

Every so often the system will require a more thorough cleaning than RF/AS can provide. This can occur as maintenance clean or a full CIP. Cleaning chemicals will be added to the system and circulated as required to regenerate the modules. Even though the clean in place (CIP) operation is required infrequently, it is designed to be an automatic operation, which the operator manually initiates when indicated by the control system. The CIP system is designed to clean one unit at a time, while the second unit stays on line, producing water. Included in this section is a more detailed description of the cleaning procedure.

▪ **Integrity Test**

Integrity testing of hollow fiber microfiltration modules specified in the proposed water filtration system is conducted in accordance with standardized procedures developed at Pall Corporation. These methods have been optimized for modular installations and have proven successful in detecting an integrity breach in system modules consisting of over a half of a million hollow fibers.

In operation, the filtrate quality is constantly monitored to immediately detect a performance change at the system level while an off line *pressure hold test* provides the ability to isolate and identify a questionable module. These automatically implemented procedures ensure system reliability without adding an extensive cost (capital or operating) and maintenance burden on users.

Cleaning Procedures for Pall Microza* MF Filtration System

Pall specifies Clean-In-Place (CIP) procedures to maintain proper hollow fiber membrane operation. The frequency, duration and chemicals will vary, depending on the feed water quality. The following is our standard CIP procedure:

Required chemicals:
100% citric acid
40% solution NaOH
12.5% solution NaOCl

The following procedure involves two steps:

Citric Acid Procedure:

Make up a 2% citric solution (e.g. 16 lbs 100% citric acid in 100 gal 30° C water)

- a. Recirculate at 75% system flow rate for 20 min.
- b. Perform air scrub (AS) and reverse filtration (RF) – make sure no chlorine is injected during RF.
- c. Soak for 20 min.
- d. Flush with water until pH is neutral (5-10 min).

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Caustic Procedure:

- a. Create a 0.4% NaOH with 300 ppm NaOCl solution
- b. Recirculate at 75% system flow rate for 20 min
- c. Perform air scrub (AS) and reverse filtration (RF)
- d. Soak for 20 min
- e. Flush with water for 5-10 min

- Microza is a trademark of ASAHI CHEMICAL INDUSTRY CO. LIMITED



***For more information on
Pall Water Products contact:***

PALL Water Processing
2200 Northern Boulevard
East Hills, New York 11548-1289
(516) 484-5400 (800) 645-6532
Telex: 968855 Fax: (516) 484-6164

Pall ARIA Mobile Microfiltration System

Pall Microfiltration System

City of Paso Robles, CA

1.4 Process Design and Equipment Selection

We propose our standard mobile microfiltration membrane system consisting of an 800 GPM maximum flow Pall ARIA™ Mobile Microfiltration System.

The equipment proposed is designed for simplicity of operation. All plant operations are automatically controlled via a PLC. There are no routine operations that require manual operation of valves etc. The system design philosophy is to reduce as far as possible the potential for system problems caused by operator error.

Pall Microfiltration System Components

The following outlines the general scope of supply for the proposed mobile microfiltration system: (See section 3.1.1 for complete Scope of Supply)

- One 48' or 53' Trailer (Dependent on trailer availability.)
- HVAC environmentally controlled interior
- One Pall ARIA™ Mobile Microfiltration System containing two (2) trains
- Hollow-Fiber Modules
- Feed Strainers
- Reverse Filtration System Components
- 30 hp Filtrate Pump
- Instrumentation
- Automated Enhanced Flux Maintenance System
- (2) Turbid Meters:
 - Hach 1720E for the Inlet and Effluent
- Start-up and Training Services (5 Days)

1.5 Features & Benefits of the Pall Microfiltration System

- **High Quality Treated Water**

Pall's Microfiltration System is a cost effective method for the removal of micro-solids and is particularly recommended for treatment of the following contaminants in water:

Feed Water Element	Treated Water Quality
<i>Giardia</i> and <i>Cryptosporidium</i>	Undetectable
Suspended Solids	Undetectable
Turbidity	< 0.1 NTU

- **Filtered Water Quality**

Pall has successfully completed the test program for certification by California Department of Health Services of its 0.1 micron microfiltration system. NSF has also certified our microfiltration system under **Standard 61**.

- **Advantages of Microza Microfiltration (MF) "Outside-In" Membrane**

1. The 0.1-micron rating of the medium assures the finest protection for the downstream systems, reduced downtime and maintenance costs and extended service life of the possible future reverse osmosis modules. Provides narrow pore size distribution for excellent effluent quality.
2. The hollow fiber membranes have extremely high permeability, which facilitates automated, clean-in-place regeneration via reverse flushing, and permits operation at high flux thereby reducing equipment cost.
3. The membranes permit operation at high chlorine residuals to minimize biofouling rates and extend process time between chemical cleanings.

- **Chemical Resistance**

The MF membrane is resistant to chlorine in concentrations as high as **5,000 mg/L** during cleaning. Pre-chlorination of the raw water is acceptable. This precludes the need for adding chemical such as bisulfite in a subsequent de-chlorination step. Chlorine resistance also allows for easy disinfection of the membrane and the system should this be required.

Pall Microfiltration / Membrane Compatibility

Chemical	Condition		Compatibility
	Concentration	Temperature	
Sodium hypochlorite	1 %	25	Excellent
Hydrogen peroxide	2 %	25	Excellent
Formaldehyde	3 %	25	Excellent
Ethanol	100 %	25	Good ¹
Caustic soda	1 N	25	Excellent ²
Caustic soda and sodium hypochlorite	NaOH (1N) NaOCl (0.5%)	25	Excellent
Nitric acid	1 N	25	Excellent
Hydrochloric acid	1 N	25	Excellent
Sulfuric acid	1 N	25	Excellent
Glycerin	100 %	25	Excellent
Chlorinated solvents		25	Not compatible
Aromatic base solvent		25	Not compatible
Ester base solvents		25	Not compatible
Ether base solvents		25	Not compatible
Ketone base solvents		25	Not compatible

NOTE: 1 Compatible up to 30 days exposure.

2 Use of caustic soda alone will result in the slight discoloration of the membrane and extraction of F⁻ ion, however, there is no deterioration in the physical properties of membrane. Therefore, the cleaning of module by caustic soda alone should be limited and use of caustic soda with sodium hypochlorite is recommended.

Pall ARIA Mobile Microfiltration System
City of Paso Robles, CA

Pall Microfiltration System

SECTION TWO



Technical Specifications

2.0 TECHNICAL SPECIFICATIONS

2.1 Scope of Supply

2.1.1 Scope of Supply - PALL

PALL's scope of supply includes the following items:

The main equipment included with the Mobile Membrane Water Treatment Plant System is listed briefly as follows. Detailed equipment specifications are included in Section 3.2 of this proposal.

The MF System includes:

- (1) Mobile ARIA Microfiltration System
- Microfiltration Hollow Fiber Modules
- One 48' or 53' Trailer (Dependent on trailer availability.)
- HVAC environmentally controlled interior
- EFM and CIP Transfer System
- Air Compressor System
- Feed Pumps with VFDs (built into the Microfiltration Unit)
- Pre-filter System (built into the Microfiltration Unit)
- RF Pumps with VFDs (built into the Microfiltration Unit)
- 30 hp Filtrate Pump and Optional Spare Backup
- Optional Pre or Post Chemical Injection System (Note: Pre-Injection contact time is <10s prior to entering modules.)
- Controls & Monitoring Equipment
- Equipment Layout Drawing
- Operating & Maintenance Manuals
- Field Service Assistance & Training (5 Days)
- Start-Up Assistance

Pall ARIA Mobile Microfiltration System

Pall Microfiltration System

City of Paso Robles, CA

2.1.2 Scope of Supply - OTHERS

The following items are for supply by others and includes but is not limited to:

- Overall plant design.
- Feed Booster Pumps (supply water to unit – 5 to 30 psig max.)
- MF Trailer Delivery To & Return From Jobsite
- Chemicals for CIP/EFM
- Unloading of delivered equipment mutually agreed FOB point.
- Receiving and safe storage of equipment until ready for installation.
- Raw water piping to MF feed header and treated water discharge piping from MF system filtrate header.
- Drain water piping from the systems to disposal.
- Electrical wiring, conduit and other appurtenances required to provide power connections as needed from the electrical power source to the PALL customer connection box.
- Conduit and other appurtenances required to provide connections as needed.
- Installation of Pall supplied field mounted valves and instruments, including wiring and tubing.
- Installation of Pall supplied equipment.
- Pipe supports for external pipe connections.
- Raw materials, chemicals, and utilities during equipment start-up and operation.
- Laboratory Services, Operating and Maintenance Personnel during equipment Checkout, Start-Up and Acceptance Testing.
- Approval Permits

2.2 Equipment Scope

The following sections provide a description and specifications of major components incorporated into the Pall Aria™ Mobile Microfiltration system.

2.2.1 Membrane Systems

The membrane system sub-component consists of the membrane modules, module rack, Membrane Aria Units, and all necessary gauges, monitoring and control devices, and local instrumentation for each individual block.

The Aria mobile units are supplied complete with pre-filters, filtrate and CIP/EFM tanks, feed and RF pumps, valves, controls, instrumentation and other associated ancillary equipment and instruments.

Standard Components:

- Painted Carbon Steel Frame
- 316 SSH Pumps w/TEFC Motors and VFDs
- Keystone Butterfly Valves (manual & air operated)
- Chemical Pumps
- Strainers
- HDPE Tanks & Piping
- PLC Software & Controls
- NEMA 4 electrical enclosures
- UL Certification
- NSF-61 Certified
- EFM / CIP Transfer Skid
- Air Compressor System
- HVAC Unit

Aria Specifications

Type:	Aria Mobile Microfiltration Package Plant
Manufacturer:	Pall Corporation
Model:	Mobile ARIA MF System
Quantity:	1
Maximum Flow:	800GPM

Strainer Specifications:

Pall ARIA Mobile Microfiltration System
City of Paso Robles, CA

Pall Microfiltration System

Type: 300um Auto-Self Cleaning
Manufacturer: Amiad
Model: 6in. SAF-4500
Quantity: 1 per train

Pall ARIA Mobile Microfiltration System

Pall Microfiltration System

City of Paso Robles, CA ---

Feed Pumps Specifications:

Type: 316L Stainless Steel SSH
Manufacturer: Goulds
Model: 23SH
Quantity: 1 per Aria unit
Horsepower: 20
Voltage: 460 V, 3 phase, 60 Hz.

RF Pumps Specifications:

Type: 316L Stainless Steel SSH
Manufacturer: Goulds
Model: 6SH
Quantity: 1 per Aria unit
Horsepower: 7.5
Voltage: 460 V, 3 phase, 60 Hz.

Filtrate Pumps Specifications:

Type: 316L Stainless Steel SSH
Manufacturer: Goulds
Model: 23SH
Quantity: 1(optional spare available)
Horsepower: 30
Voltage: 460 V, 3 phase, 60 Hz.

Filtrate & CIP/EFM Tank Specifications:

Type : HDPE
Manufacturer: Corrosion Products
Quantity: 1 each
Volume: 1500gal Filtrate, 1250gal (53')/600gal (48') CIP/EFM

Analyzers:

Turbid Meter: 1720E Hach, (2) Feed and Filtrate

Module Racks

Mobile ARIA MF System

- (2) Module Rack
Material: HDPE and NSF listed PVC wetted piping

Microza Microfiltration Modules

Dimensions: **6" diameter** x 80" long

Removal Rating: 0.1 µm

Membrane Material: PVDF

Air Compressor System

Manufacturer: Atlas Copco
Type: Oil Flooded, Rotary Screw
Model: GX11
Horsepower: 15hp
Voltage: 460VAC, 3 phase
Capacity: 39 scfm @ 145psig
Receiver: 240 gallon, epoxy lined, 200 psi rated, ASME code stamp

HVAC Specifications:

Type: Electric (460V3Ph)

Manufacturer: Bard

Heater Size: 15kw

AC: 5T

2.2.2 Control & Monitoring Equipment

Pall's standard ARIA™ controls package is designed to offer flexibility, and robustness. The system is designed around automation hardware and software from a standard manufacturer to reduce compatibility issues and eliminate confusion with technical support issues. Pall has invested heavily in developing this architecture and standardized software for the PLC and HMI. A team of Pall's Controls Engineers and Field Service personnel are familiar with this standardized design, thereby allowing the best possible customer support fastest commissioning and startup, and minimized down time. The following describes the architecture, hardware, and software of Pall's standard membrane filtration system.

1. Control System Overview

Pall ARIA Mobile Microfiltration System

Pall Microfiltration System

City of Paso Robles, CA

Control System Architecture – Process control of within each Pall ARIA™ mobile membrane filtration (MF) trailer is based on a single programmable logic controller (PLC) with modular process I/O for ease of maintenance. The PLC controls all aspects of system operation including pumps, valves, VFD's, and other ancillary process equipment and instrumentation as required. For multiple mobile trailer configurations, a separate, externally located Master Control Panel with a separate PLC is available to coordinate operation of the individual MF systems.

1.1 Information level communications – Information level communications is defined as communications that is not absolutely critical to operation of the filtration system. Small interruptions in this communication link will not cause the filtration system to stop processing. Typically, communication between the Process Control PLC, HMI and supervisory control system (if applicable) is considered information level communications. The protocol used is Ethernet.

2. Control System Hardware – For the ARIA™ mobile membrane filtration trailers, Pall has design systems around both the GE Fanuc and Allen-Bradley platforms for programmable logic controllers (PLC), human machine interfaces (HMI), distributed I/O, and industrial networking equipment. This approach helps assure compatibility between hardware and software within each manufacturer and allows Pall to better support the filtration system.

2.1. Programmable Logic Controllers –The control hardware used in the Pall mobile MF system are either Allen-Bradley ControlLogix family or GE Fanuc PAC RX3I series programmable logic controllers. Network communications cards reside in the PLC chassis whereas process I/O is located both in the PLC chassis and on external modules linked to the PLC through an industrial fieldbus. Each PLC system includes an industrial computer touchscreen HMI by the same manufacturer to provide local operator monitoring and control, as well as to provide graphical trending and process historian functions.

2.1.1. I/O hardware – Various types of analog and digital I/O modules are installed in either the GE Fanuc or AB PLC chassis or outside of the chassis and linked to the PLC processor using Devicenet. High-density I/O cards are used as necessary reduce electrical panel size and wiring. I/O system design philosophy is focused on ease of maintenance, robustness and reliability.

2.2. Control Enclosures (UL/CSA Inspected Panels)

2.2.1. Main Control Panel (MCP)– The main control enclosure will house the PLC and local touchscreen HMI and handles all I/O not directly associated with another control enclosure.

2.2.2. 460V Panel – The 460V Panel will handle distribution of the main power bus feeding the mobile trailer, including electricity to the Main Control Panel, pump motor VFDs, strainer motors, EFM/CIP heater, air compressor and the trailer HVAC system.

2.2.3. UPS Panel – All Pall mobile MF trailers incorporate an uninterruptible power supply (UPS) to temporarily maintain the PLC control system and HMI functionality should power to the trailer be lost. The GE Fanuc based systems houses the UPS in an enclosure separate from the Main Control Panel (MCP). On systems using Allen-Bradley ControlLogix, the UPS is located inside of the MCP.

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3. Control System Software – To assure the best compatibility with the GE Fanuc PAC RX31 PLC, Pall has chosen GE Fanuc Proficy Machine Edition software for PLC control program development software along with GE Fanuc Cimplicity HMI software for process graphics. Mobile trailers incorporating the Allen-Bradley ControlLogix PLC have control programs developed using Rockwell RSLogix5000 programming software and HMI graphics written under Rockwell RSView32. Both the GE Cimplicity and Rockwell RSView32 graphics programs offer a high level SCADA system for process trending and historical data-logging through the local touchscreen HMI in each trailer.
4. Communications with customer equipment – The GE Fanuc PLC and HMI communicate using Ethernet, which also can be used to interface the control system with compatible customer equipment. This type of access is typically used for process data monitoring of the mobile trailer performance.
5. Remote Access - The Microsoft Windows XP based touchscreen HMI in each trailer is equipped with a 56K analog modem which allows remote dial-up access through conventional telephone lines. This capability may be used for process data transfer from the PLC SCADA system or remote process troubleshooting by authorized plant personnel or Pall Field Service engineering

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2.3 MICROFILTRATION SYSTEM PRICING SUMMARY

2.3.1 Equipment Pricing

The price to lease the supply equipment and services as described in this proposal is listed in the table below. Payments to be made on a monthly basis.

No. Of Units	Monthly Lease Price	Minimum No. Of Months
1	\$32,000	3

2.3.2 Terms & Conditions

Validity

Pricing is valid for 15 days. If a formal purchase order is not received within the stated period, both the pricing and delivery schedule are subject to review and adjustment. Lease units are available on a 'first come, first serve' basis.

Customer Agrees to Follow Decommissioning Procedure:

- PAM Decommissioning Procedure DIR 10000012017

Taxes

No taxes or duties are included in the above pricing. Any taxes, duties, tariffs of any type are for the account of the Purchaser.

Freight

Freight cost to and from job site is the customer's responsibility.

Terms of Payment

The Terms of Payment is based on the payment schedule provided:

- ◆ Monthly
- ◆ **Customer** is responsible for return and condition of all Pall provided equipment.

Equipment Shipment and Delivery

A typical drawing submission and equipment shipment schedule is indicated below. Equipment shipment periods are quoted from date of receipt of a formal signed purchase order or acknowledgement of award:

- Preliminary Design Info Submittal: TBD
- P&ID and GA Drawings are for information purposes only.
- Equipment Shipment: TBD
- Operator Training: Included in 5 day service

If a formal purchase order is not received within the period of validity of this proposal, the delivery schedule is subject to review and adjustment.

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Pall Standard Terms and Conditions of Lease

1. **Generally.** These terms and conditions (these "terms") shall apply to your lease from Pall Corporation or its subsidiaries ("Lessor") of certain equipment (the "Equipment"). Any additional or different terms proposed by you ("Lessee") are specifically rejected.
2. **Delivery, Price and Payment.** Delivery of the Equipment is ex factory; claims for damages to the Equipment in shipment must be made directly to the freight carrier. Payment shall be made in U.S. Dollars monthly, in advance, unless otherwise agreed in writing by Lessor. A monthly interest charge at the rate of 11/2 percent or the maximum legal rate allowed by applicable law, whichever is lower, will be assessed on all past due payments. In addition, should Lessee fail to pay when due or breach any other obligations of Lessee hereunder, Lessor shall have the immediate right to enter Lessee's premises to take possession of and remove the Equipment. If Lessee denies or interferes with Lessor's right of entry, removal and possession, Lessor may enforce said right in a court of law and in such proceeding the only matter to be considered shall be the right of entry, possession and removal. In any undertaking required pursuant to such an enforcement, the levying officer as authorized shall promptly deliver possession of the Equipment to Lessor and Lessee shall be liable for all costs including reasonable attorney's fees. Except as otherwise stated, the prices provided to Lessee do not include any taxes applicable to the lease of the Equipment.
3. **Warranty, Limitation of Liability and Remedies.**
 - (a) THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE WITH RESPECT TO THE EQUIPMENT. NOR IS THERE ANY OTHER WARRANTY, EXPRESS OR IMPLIED, MADE BY LESSOR, EXCEPT AS PROVIDED FOR HEREIN.
 - (b) At the time of its delivery to Lessee, the Equipment is in good operating condition.
 - (c) Lessor's liability under any warranty contained herein is limited solely, in Lessor's discretion, to replacing, repairing or issuing credit, provided, that Lessee promptly notifies Lessor in writing of any claims and provides Lessor with an opportunity to inspect the Equipment.
 - (d) In no event shall Lessor be liable for any piece of Equipment (and any claim or loss relating thereto) which is improperly maintained by Lessee, altered outside of Lessor's factory by someone other than Lessor, or subjected to misuse, abuse, improper installation or use, improper operation, accident, negligence in use, storage, transportation or handling.
 - (e) In no event shall Lessor be liable for any claim or loss arising as a result of Lessee's improper or negligent installation, use, storage, handling or maintenance of the Equipment.
 - (f) In no event shall Lessor be liable for any damages, indirect, incidental, consequential, special, or otherwise, whether arising out of or in connection with the manufacture,
- (c) Prior to the delivery of the Equipment to Lessee, Lessee shall deliver to Lessor a current certificate of insurance reflecting the above referenced coverages, in a form and substance satisfactory to Lessor, acknowledging that Lessor has been named as an additional insured on all referenced policies with respect to liability arising out of Lessee's activities or omissions. No such policy will be cancelled or materially changed without at least 30 days prior written notice to and the consent of Lessor.
5. **Indemnification by Lessee.** To the fullest extent permitted by law, Lessee shall indemnify and hold harmless Lessor and its affiliates, agents and employees from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from (i) Lessee's, or any of Lessee's direct or indirect employees, agents or representatives, or any third party on Lessee's premises, direct or indirect use of the Equipment, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (including injury to or destruction of the Equipment) and is not caused by the grossly negligent acts or willful misconduct of the Lessor or (ii) patent or other intellectual property infringement related solely to the use of the Equipment and not to the Equipment itself as supplied by Lessor. Such obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity that otherwise would exist as to a party or person described in this paragraph. This indemnity shall survive any termination or expiration of this Equipment lease.
6. **Termination.** Lessor may, at any time, terminate this Equipment lease for convenience by delivering 30 days' prior written notice. Lessor may also terminate (i) with effect immediately, if Lessee becomes insolvent or makes any arrangement or composition with its creditors or enters into a liquidation or winding up (whether voluntary or compulsory) or has a receiver appointed; or (ii) Lessee breaches any of its obligations hereunder and such failure is not cured within a period of 10 calendar days after receipt of written notice from Lessor specifying such breach. Upon such termination (or upon expiration of this lease), Lessee shall promptly return to Lessor the Equipment at Lessee's cost and pay to Lessor any and all amounts due Lessor as of the date of such termination (or expiration).
7. **Assignment.** Lessee shall not assign any rights or obligations hereunder without the prior written consent of Lessor. Any assignment made in violation of this provision shall be null and void.
8. **Entire Agreement.** These terms and Lessor's confidentiality agreement, if any, are the entire agreement of the parties and may not be modified except in writing signed by Lessor.
9. **Confidentiality.** If Lessor discloses or grants Lessee access to any research, development, technical, economic, or other business information or know-how of a confidential nature, whether reduced to writing or not, Lessee shall not use or

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packaging, delivery, storage, use, misuse or non-use of the Equipment or any other cause whatsoever.

- (g) In no event shall Lessor be liable hereunder after the termination or expiration of this Equipment lease or in excess of amounts received by Lessor from Lessee in connection with the lease of the Equipment.

4. Maintenance of Equipment; Insurance.

- (a) Lessee shall use the Equipment in accordance with its specifications and for its designated use and shall comply with all requirements contained in documentation delivered by Lessor to Lessee with respect to the Equipment. Lessee shall, at its own expense, maintain the Equipment in good working condition and in good repair, including providing at its sole cost replacement parts which shall become part of the Equipment. Lessor shall assist Lessee in obtaining replacement parts. Lessee shall keep the Equipment separate from its own equipment and shall mark it to indicate that it is the property of Lessor.
- (b) Lessee shall, for the longer of (i) the term of the Equipment lease or (ii) the period in which the Equipment is at the premises of Lessee or in route to Lessor's premises, maintain: (i) Commercial General & Products Liability (written on ISO occurrence based form) with a bodily injury and property damage combined single limit in the amount of \$1,000,000 per occurrence (or such higher amounts as may be required in order to obtain the umbrella liability coverage described below); (ii) Commercial Umbrella Liability in the amount of \$5,000,000 per occurrence; and (iii) Broad Form Property Insurance for the value of the Equipment (as disclosed by Lessor to Lessee). Lessor shall be named as additional insured on the foregoing liability policies and loss payee on the foregoing property policies. Each of the above mentioned policies shall contain waivers of the insurer's subrogation rights against Lessor. Insurance companies used for the above policies must have an A.M. Best rating of A- or better.

disclose any such information to any other person or company at any time, without Lessor's prior written consent. Such obligation shall continue for 5 years after said disclosure regardless of a termination or expiration of these terms or the Equipment lease. In the event that Lessor and Lessee have entered into a separate confidentiality agreement, the terms and conditions of such agreement shall take precedence over these terms.

10. **No Waiver.** Lessor's failure to insist on Lessee's strict performance of these terms at any time shall not be construed as a waiver of performance in the future.

11. **Governing Law.** The laws of the State of New York shall govern these terms and the lease of the Equipment. Sole jurisdiction and venue for actions related to these terms and the lease of the Equipment shall be the state and federal courts located in Nassau County, New York and Southern District of New York. Both parties consent to the jurisdiction of such courts and agree that process may be served in the manner allowed by either U.S. federal law or New York law. LESSOR AND LESSEE EACH UNCONDITIONALLY AND IRREVOCABLY WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL WITH RESPECT TO ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF, DIRECTLY OR INDIRECTLY, THESE TERMS, THE LEASE OF THE EQUIPMENT AND/OR THE RELATIONSHIP BETWEEN THE PARTIES. In the event of any dispute or legal proceeding between the parties relating to these terms, the prevailing party shall be entitled to recover from the other party all of its reasonable attorneys' fees, and costs.

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RESOLUTION NO. 08-xx

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES
AUTHORIZING A PURCHASE ORDER TO PALL CORPORATION FOR THE LEASE OF A
MOBILE WATER TREATMENT UNIT

WHEREAS, the City has been unable at times to meet peak water demand during heat waves and power outages, and operations do not allow for repairs or servicing of equipment during peak season; and

WHEREAS, the Ronconi Wells #1 and #4 could be used to supply an additional 800 gallons per minute of Salinas River Underflow production with appropriate treatment; and

WHEREAS, Pall Corporation has a mobile treatment unit which meets the City's treatment needs and can be leased short-term.

THEREFORE, BE IT RESOLVED AS FOLLOWS:

SECTION 1. The City Council of the City of El Paso de Robles does hereby appropriate \$189,000 from Water Operations Fund to Budget Account No. 600-310-5224-165.

SECTION 2. The City Council of the City of El Paso de Robles does hereby authorize a Purchase Order to Pall Corporation for the five-month lease of the Pall Aria Mobile Microfiltration Treatment Unit in an amount not to exceed \$160,000.

SECTION 3. The City Council of the City of El Paso de Robles does hereby authorize a Purchase Order to Inhouse Security Services for \$17,850.

SECTION 4. The City Council of the City of El Paso de Robles does hereby authorize a Purchase Order to Central Coast Fence \$1,160.

SECTION 5. The City Council of the City of El Paso de Robles does hereby authorize staff to expend \$10,000 for additional chemical expenses required for operation of the treatment system.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 15th day of April 2008 by the following votes:

AYES:
NOES:
ABSTAIN:
ABSENT:

Frank R. Mecham, Mayor

ATTEST:

Deborah D. Robinson, Deputy City Clerk