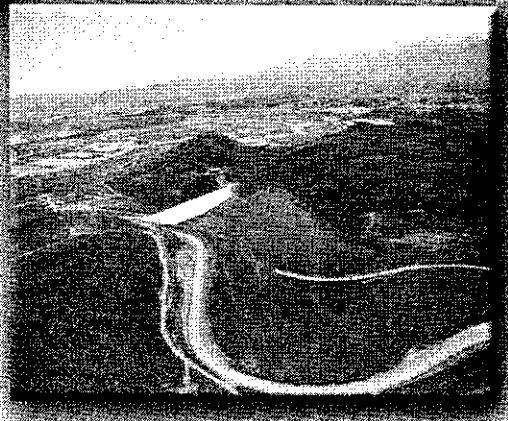
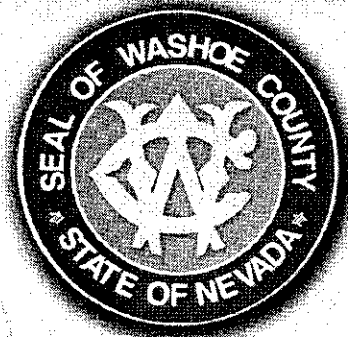


D E D I C A T I O N



2003



South Truckee Meadows Water Reclamation Facility

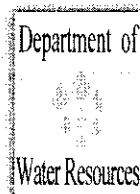
May 13, 2003

EXHIBIT P3 Lands

Document consists of 6 pages.

- ☒ Entire document provided.
- ☐ Due to size limitations, _____ and _____ provided.
A copy of the complete document is available through the
Research Library (775/684-6827) or e-mail
library@lcb.state.nv.us.

Meeting Date: 03-26-04



The Work of a Treatment Facility is Never Done

The South Truckee Meadows Water Reclamation Facility (STMWRF) is located in one of Northern Nevada's fastest growing regions. Washoe County owns STMWRF. The facility's service area includes both unincorporated southern Washoe County and portions of the City of Reno. STMWRF operations are based on regulations enforced by the State of Nevada Division of Environmental Protection (NDEP) under a National Pollutant Discharge Elimination System (NPDES) permit.

STMWRF is one of the few 100 % reclamation facilities in the United States. All of the wastewater treated at the facility is used for irrigation within the South Truckee Meadows. In the wintertime, STMWRF's treated effluent, or reclaimed water, is stored in the County's Huffaker Hills Reservoir. Even waste sludge, which is generated from the many processes, is reclaimed daily. Instead of going to a landfill, the sludge is conveyed to the Truckee Meadows Water Reclamation Facility (TMWRF), where it receives final treatment before it is applied to land in Northern Nevada as part of an EPA award winning soil amendment program.

STMWRF is now capable of treating over 4 million gallons per day (mgd) of wastewater. Besides adding treatment capacity to serve new homes and businesses, the Expansion Project also addressed existing treatment process deficiencies. The previous discharge permit limited flow to 0.75 mgd until solids-handling improvements were completed. Several other treatment processes lacked "reliable capacity," i.e., the ability to keep operating if one component breaks down or is out of service for extended maintenance. Other improvements included hydraulic modifications, electrical and instrumentation upgrades, and a new distributed control computer system.

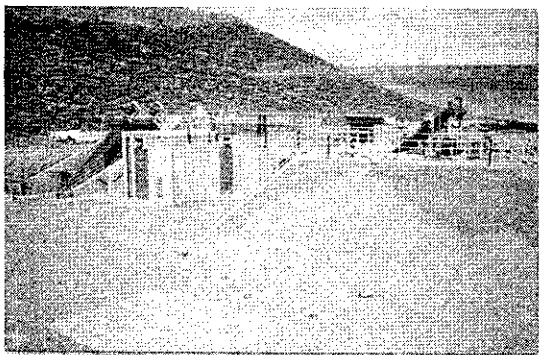
The South Truckee Meadows Water Reclamation Facility Expansion Project has been successful because of the efforts of numerous government entities and the private sector. Staffs from the City of Reno, City of Sparks, Nevada Division of Environmental Protection, TMWRF and many Washoe County departments provided significant input into the planning, design, permitting, and financing components of the Project. The

Department of Water Resources' project team enjoyed a successful partnership with the design engineers, Carollo Engineers PC, and the general contractor, KG Walters Construction.

By providing a cost-effective means of wastewater treatment and producing the highest quality effluent recognized by the State of Nevada for irrigation use, the facility is a tremendous asset to the region. Project funding came from the State of Nevada Revolving Fund Loan Program.

How the South Truckee Meadows Facility Works

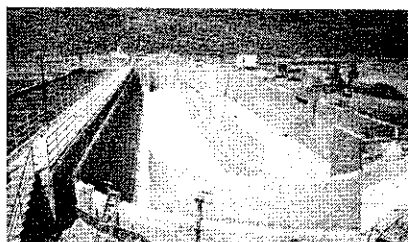
Untreated residential and commercial wastewater goes through the plant's headworks where large debris is screened out and influent flow is measured. Wastewater then passes to the secondary treatment process where bacteria remove most of the pollutants in the water. After a settling process, the treated wastewater is filtered and disinfected. The treatment process takes approximately 30 hours. The treated water or "reclaimed water" is then delivered to Washoe County's South Truckee Meadows Reclaimed Water System for distribution. In the wintertime, the reclaimed water is stored at Washoe County's Huffaker Hills Reservoir. This arrangement allows Washoe County to maintain a zero discharge permit (no effluent is put into surface water bodies) in the sensitive Truckee River Watershed. Waste solids generated throughout the treatment process are pumped to the Truckee Meadows Water Reclamation Facility for additional treatment. Washoe County presently utilizes surface water to augment the reclaimed water supply. Diverted surface water is also filtered and disinfected.



1

Headworks

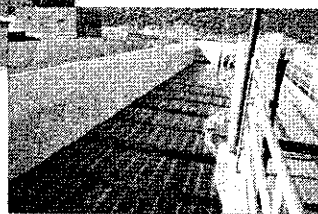
Influent screw pumps were outfitted with variable frequency drives. A fine mesh screen and a new screw compactor were added. Flow metering was upgraded.



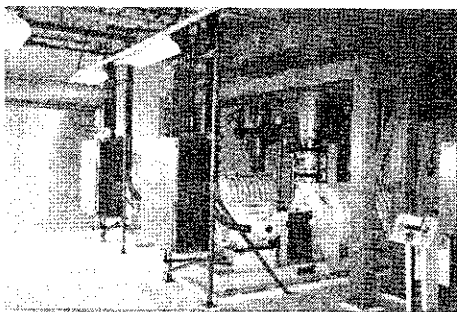
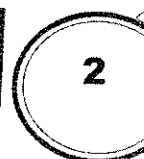
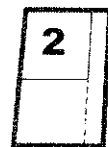
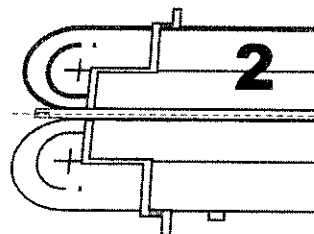
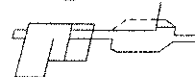
2

Secondary Treatment

A second oxidation ditch was constructed. Fine bubble aeration panels were added to both ditches. Four external secondary clarifiers were added. A return/waste activated sludge pump station was constructed to handle plant solids.



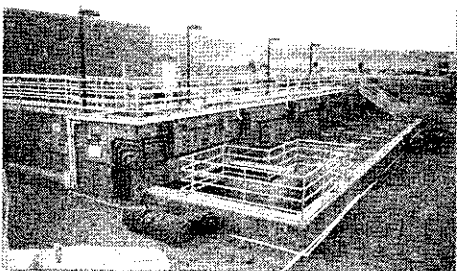
1



3

Electrical/ Blower Building

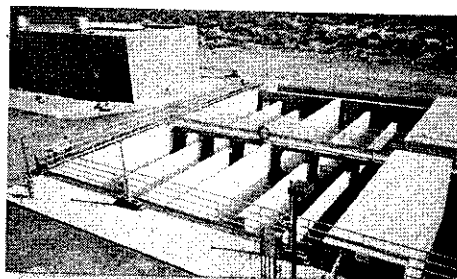
Aeration blower capacity was added to provide the plant with sufficient aeration capacity redundancy. Major electrical improvements were added.



4

Tertiary Filters

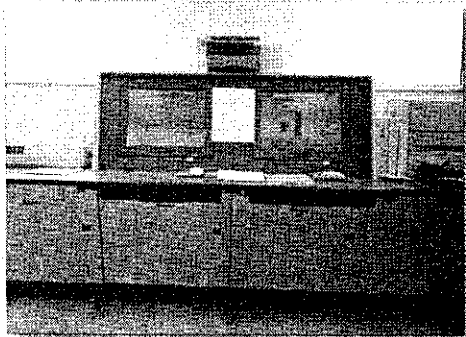
Filters were constructed to provide reclaimed water that meets the highest State of Nevada standard for irrigation water.



5

Chlorine Contact Basin

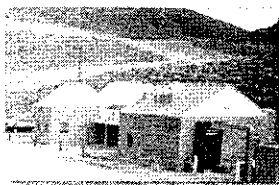
Three additional basins were constructed. The disinfectant was changed from chlorine gas to liquid sodium hypochlorite.



9

Control Building

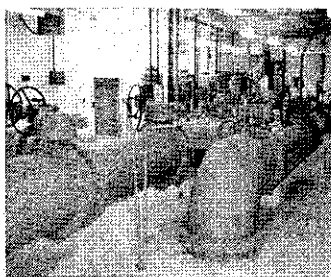
New distributed control computer system was added.



8

Maintenance Building

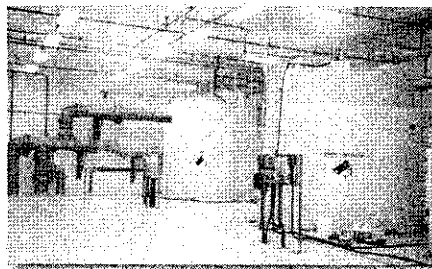
The existing gaseous chlorine system was removed. The chlorine storage building was converted into a maintenance facility.



7

Plant Effluent Pump Station

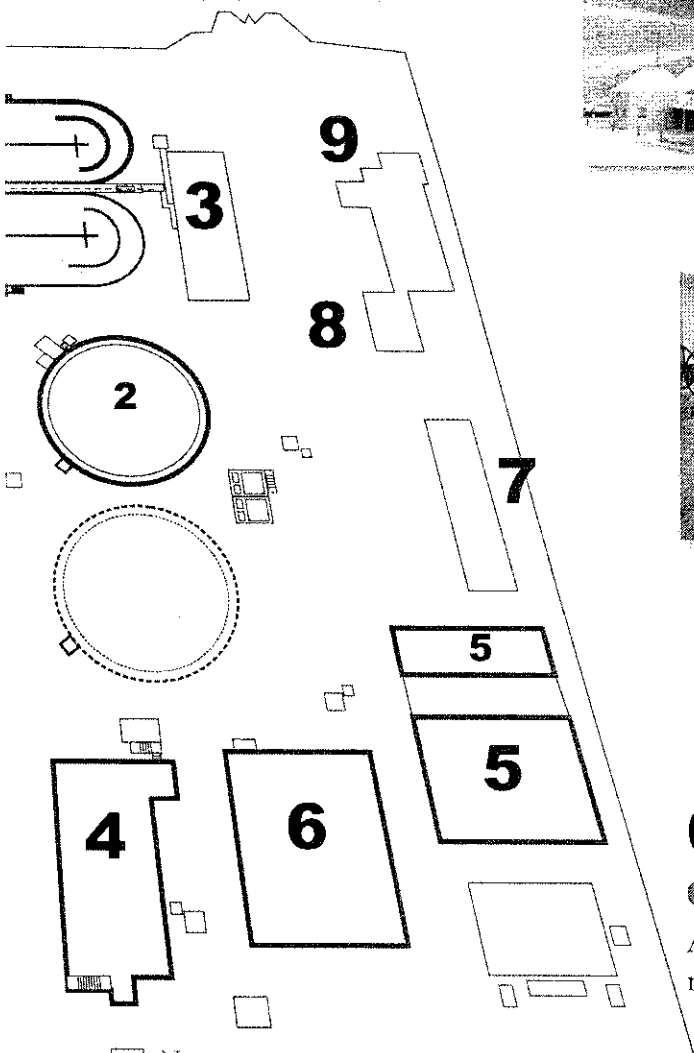
The capacity of the pump station was increased.



6

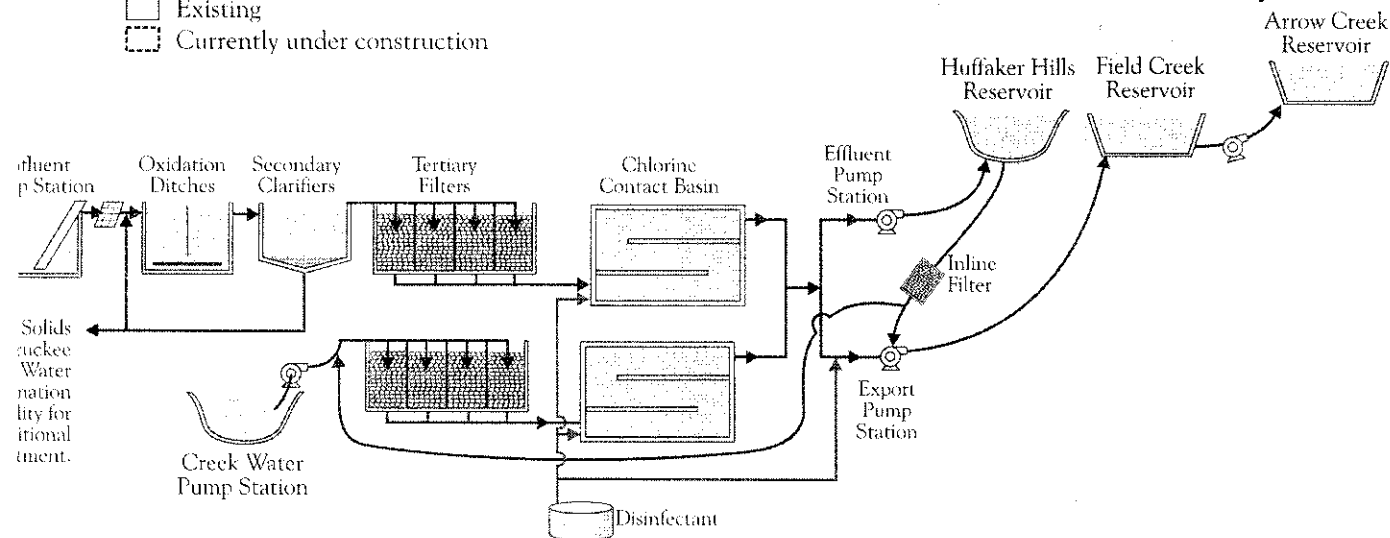
Chemical Building

A new Chemical Building was constructed to house the new sodium hypochlorite and filter chemical systems.



- New
- Existing
- Currently under construction

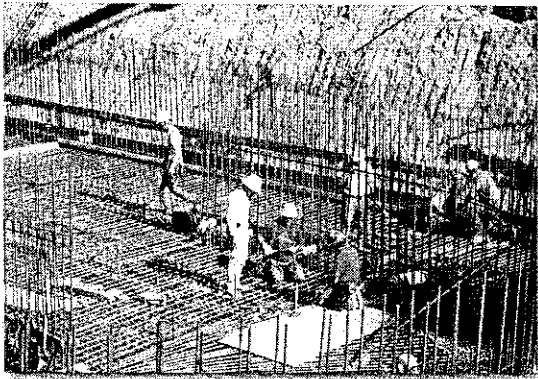
Reclaimed Water System



Satisfying Tomorrow's Needs . . . **Today**

Increased Treatment Capacity

The STMWRF Expansion Project provides the County with sufficient capacity to reliably meet the treatment needs of a fast growing service area. Based upon the recently adopted *South Truckee Meadows Water/Wastewater Facility Plan*, wastewater flow to STMWRF is anticipated to



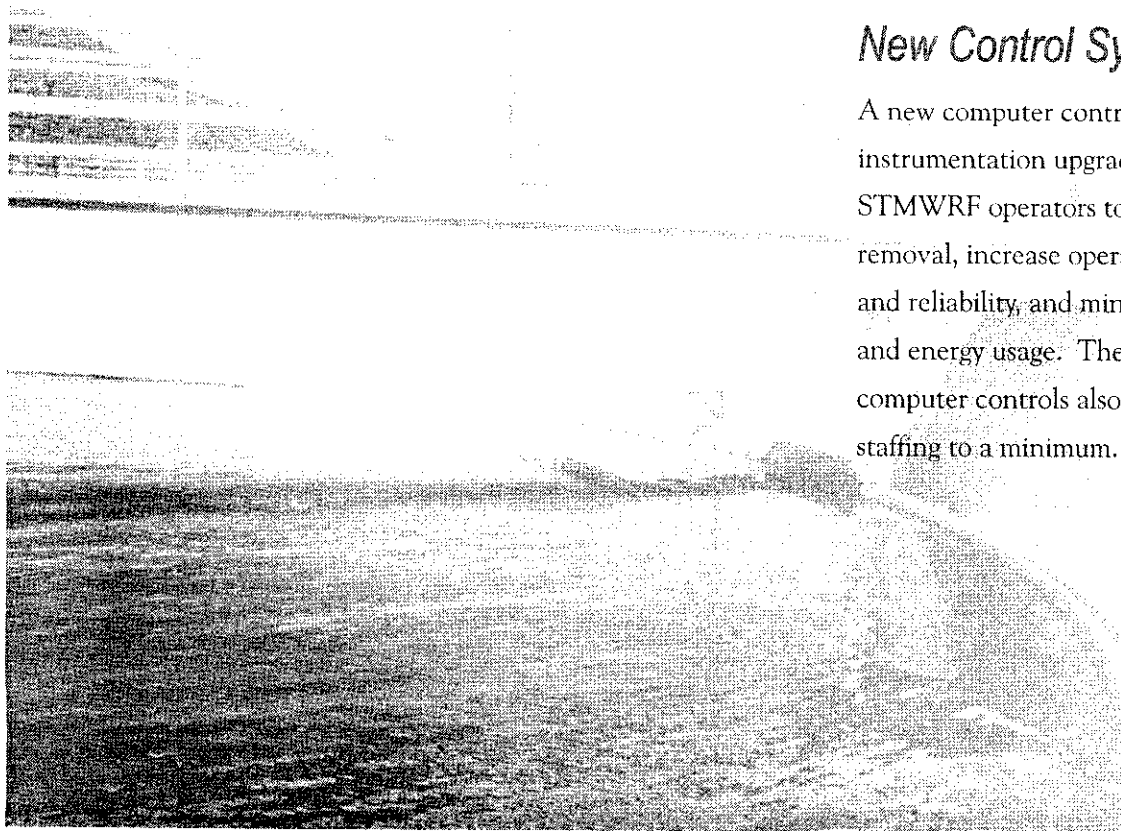
reach 6 million gallons per day (mgd) by 2017. Current influent flow is approximately 1.8 mgd. The Expansion Project increases secondary treatment capacity to 4.1 mgd. The clarification, filtration, disinfection, and effluent pumping systems were all expanded to 6.0 mgd. Many new processes and equipment, such as a fine bubble aeration system, were specifically selected to minimize chemical or power usage.

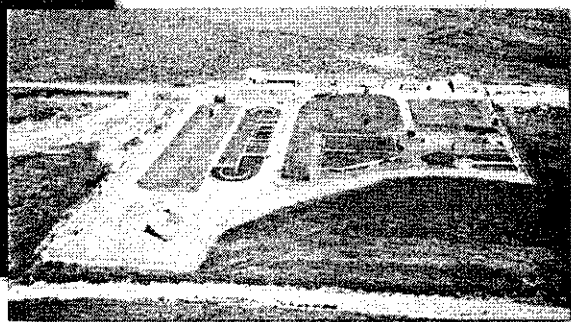
Expanded Water Reuse Options

The Expansion Project has successfully met the objectives to meet more restrictive water quality requirements. By providing tertiary filtration, STMWRF can now provide reclaimed water that has no restrictions for irrigation use. The County's reclaimed water system is now positioned to meet a growing variety of water demands and provide a safe, high quality alternative to using the domestic water supply for non-potable uses.

New Control System

A new computer control system and instrumentation upgrades will assist the STMWRF operators to optimize pollutant removal, increase operating efficiency and reliability, and minimize chemical and energy usage. The extensive use of computer controls also helps keep facility staffing to a minimum.





Design Criteria

Permitted Average Day Maximum Month Flow, mgd	3.0
Bar Screen Capacity, mgd	7
Oxidation Ditches, Capacity, mgd	3.0 permitted
(with completion of clarifiers 3 and 4*)	4.1 *
Secondary Clarifiers, overflow rate, gpd/sf	331
Filter Capacity, mgd	6.0
Filter Hydraulic Loading Rate (gpm/sf)	2.6
Filter Coagulant	Alum
Chlorination System	Sodium Hypochlorite
Chlorine Contact Basins capacity, mgd	6.0

* pending approval from Nevada Division of Environmental Protection

For a tour of STMWRE,
call 775.954.4621

Owner:

Washoe County

Washoe County Commissioners:

David Humke, *Chairman*
Jim Shaw, *Vice Chairman*
Jim Galloway
Pete Sferrazza
Bonnie Weber

Past Washoe County Commissioners:

Joanne Bond
Ted Short

Washoe County Management:

Katy Singlaub, *County Manager*
Michelle Poché,
Assistant County Manager
John Berkich,
Assistant County Manager

Washoe County Department of Water Resources

Steve Bradhurst, *Director*

Design Engineer:

Carollo Engineers PC

Construction Manager:

Carollo Engineers PC

General Contractor:

KG Walters Construction