ORIGINAL

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BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF H20, INC., FOR AN EXTENTION OF ITS EXISTING CERTIFICATE OF CONVENIENCE AND NECESSITY.	DOCKET NO. W-02234A-00-0371
IN THE MATTER OF THE APPLICATION OF JOHNSON UTILITIES, L.L.C., DBA JOHNSON UTILITIES COMPANY FOR AN EXTENSION FOR ITS CERTIFICATE OF CONVENIENCE AND NECESSITY TO PROVIDE WATER AND WASTEWATER SERVICE TO THE PUBLIC IN THE DESCRIBED AREA IN PINAL COUNTY, ARIZONA	DOCKET NO. WS-02987A-99-0583 DOCKET NO. WS-02987A-00-0618
IN THE MATTER OF THE APPLICATION OF DIVERSIFIED WATER UTILITIES, INC. TO EXTEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY.	DOCKET NO. W-02859A-00-0774
IN THE MATTER OF THE APPLICATION OF QUEEN CREEK WATER COMPANY TO EXTEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY	DOCKET NO. W-01395A-00-0784

NOTICE OF FILING TESTIMONY

Pursuant to the Procedural Order dated October, 16, 2000, the owners of Skyline Ranch, Intervenors in this case, give notice that they are filing the testimony of Eric Laurin. That testimony is attached to this notice. Intervenors reserve the right to supplement or amend this testimony in the future.

DATED this 20th day of February, 2001.

Salmon, Lewis & Weldon, P.L.C.

By _____
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An ORIGINAL and ten copies of the foregoing delivered this 20th day of February, 2001, to:

Docketing Supervisor
Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

A COPY of the foregoing was delivered this 20th day of February, 2001 to:

Teena Wolfe
Legal Division
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A COPY of the foregoing was mailed this 20th day of February, 2001 to:

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TESTIMONY OF ERIC LAURIN ON BEHALF OF THE OWNERS OF SKYLINE RANCH

1. Q: What is your name, your occupation, the company you work for, and your title?

   A: My name is Eric Laurin. I work for Coe & Van Loo, Consultants, Inc. of Phoenix, AZ as a Project Manager.

2. Q: Please briefly explain your experience.

   A: I have 24 years' experience in civil and environmental engineering and approximately 22 years of experience in water and wastewater master planning.

   I have been with Coe & Van Loo, Consultants, Inc. for 3 years.

   The enclosed resume emphasizes my water and wastewater master planning experience (Exhibit I-1). I also have extensive experience in design, contract document preparation, construction phase services, providing treatment, supply, distribution and pumping facilities for water as well as wastewater collection, pumping and treatment facilities.

3. Q: For what purpose did the owners of Skyline Ranch hire you?

   A: Skyline Ranch hired me to investigate the proposed water and wastewater system improvements developed by a water and wastewater service provider that would serve the subject development. A list of water and wastewater standards were prepared at Skyline Ranch's request to be attached to contracts between Skyline Ranch and its water and wastewater service providers.

4. Q: Did you provide those standards?

   A: Yes. Based on my understanding of the demographics of the area and the needs of future homebuilders, I established minimum standards for water and wastewater service that I provided to the Skyline Ranch owners. Those standards are attached as Exhibits I-2 and I-3.

5. Q: Have you had occasion to compare your recommended specifications for water and wastewater service with the minimum specifications required by the Arizona Department of Environmental Quality (ADEQ)?

   A: I have compared my recommended specifications for water and wastewater service with the minimum specifications required by ADEQ as

detailed in Technical Bulletin No. 10 (Water Systems) and Technical Bulletin No. 11 (Wastewater Systems).

6. Q: How do your specifications differ from those of the ADEQ?

A: My specifications are specific to the proposed development and include estimates of population, use factors, water demands and wastewater flows anticipated for this development. I note the following differences:

1. Wastewater System
- *a. I noted that odor control technologies and requirements for wastewater treatment plans have advanced since the Bulletin's publication and should be clearly defined during conceptual design.*
- *b. ADEQ is considering the revision of the setback dimensions for wastewater treatment plants and I proposed that the revisions under consideration be followed.*
- *c. Wastewater treatment plant effluent discharge limits must follow currently allowable concentrations.*

2. Water System
- *a. Currently water quality criteria for source waters must be met. Arsenic and nitrate (as N) were parameters identified in my specifications as critical.*
- *b. Distribution system minimum pressures were recommended to be 25 psi in lieu of the 20 psi identified in Bulletin No. 10.*

7. Q: Why are your recommending different standards?

A: The standards specified by myself, which differ from those of ADEQ, have been modified to reflect the latest agency recommendations. The increase in minimum pressures to 25 psi is recommended to account for variability in system configurations and pressures.

8. Q: In your professional opinion, if a water and wastewater system is designed to satisfy ADEQ's minimum standards, but does not meet your recommended specifications, what would the impact be to Skyline Ranch?

A: ADEQ's minimum standards would require that water and wastewater system meet current regulatory requirements for treatment. That cost would be equal to the cost incurred in meeting my specifications.

There is a potential for lower than acceptable pressures during high demand/fire flow period. If very low pressures occur, risk of cross connections and contamination exists.

9. Q: Have you had occasion to compare your recommended specifications for water and wastewater service with the specifications provided by Johnson Utilities?

A: Yes.

10. Q: How do your specifications for water and wastewater service differ from those of Johnson Utilities?

A: They differ as follows:

1. *Wastewater System*
   a. *Population per dwelling unit was increased to 3.4. Johnson Utilities' population per dwelling unit was 2.6.*
   b. *I increased average day flows per person to 100 gallons from 90 gallons, set by Johnson Utilities.*
   c. *Wastewater treatment plant design criteria were presented on a conceptual basis.*

2. *Water System*
   a. *Population per dwelling unit was increased to 3.4. Johnson Utilities' population per dwelling unit was 2.6.*
   b. *Storage requirements were computed using the maximum day demand plus the highest fire flow for 3 hours compared to Johnson Utilities' average day demand plus a 2 hour fire flow.*
   c. *Fire flows were taken to be a maximum of 3,500 gpm for commercial/school areas. Johnson Utilities calculated storage using residential fire flows of 1,000 gpm only.*
   d. *Dual water transmission lines to the development were recommended to provide emergency water and redundant service.*

11. Q: In your professional opinion, if a water and wastewater system is designed according to Johnson Utilities' specifications and does not meet your recommended specifications, what would the impact be to Skyline Ranch?

A: The impact to Skyline Ranch would be as follows:

1. *Smaller water transmission mains.*

2. *Less redundancy and flexibility in the water system.*

3. *Less storage for fire flows.*

4. *Potential low pressures during periods of high demands and in meeting increased demands from future developments.*

5. *Some trunk sewer lines may be undersized with potential surcharging during high flow periods.*

6. *More frequent or earlier upsizing of pumping equipment in stations.*

12. Q: Does that conclude your testimony?

A: *Yes.*

Exhibit I - 1

Eric Laurin, P.E.

Project Manager

Mr. Laurin has over 24 years of experience in water, wastewater, and environmental engineering. He has been involved in the planning, design, and construction surveillance of many municipal engineering projects, including water/wastewater master planning and population projections, value engineering, sewage systems evaluation surveys, lift stations and collection systems, water system analysis and modeling, financial analysis, system design, and regulatory compliance studies for public and private clients.

Years with Firm

3.0

Education

Master of Science, Environmental Engineering,
University of North Carolina at Chapel Hill, 1976.
Bachelor of Science, Clarkson University, 1974.
Value Engineering Training Workshop, 40 hours, 1981.
Basic Health and Safety Training (OSHA 1910.120),
40 hours, and 8 hours refresher courses.

Professional Registrations

Professional Engineer, Arizona, #14478, 1982
Professional Engineer, New York, #058365, 1981
Professional Engineer, New Jersey, #GE-35912, 1991

Professional Affiliations

Water Environment Federation
American Water Works Association
Arizona Water and Pollution Control Association

Project Experience

Potable Water Systems

McDowell Road 30" Water Main, Phoenix, AZ
Lower Buckeye Transmission Main, Phoenix, AZ
County Water Authority, Monroe County, New York
City of Buffalo, Division of Water, Buffalo, New York
Eastman Kodak Company, Rochester, New York
Seneca Army Depot, Romulus, New York

Various Wastewater Master Plans
Maricopa County
Pinal County

Municipalities require that a sewer master plan be performed or existing plan updated to determine the impact of new developments on existing wastewater collection and treatment systems. Mr. Laurin has performed numerous such studies.

- Project tributary area population and flows at "build-out" using the community's factors. Size the required system using a sewer model acceptable to the municipality having jurisdiction.
- Investigate downstream impacts to existing collectors, trunk sewers, lift stations, and treatment plants and recommend the necessary improvements to integrate anticipated flows in the existing system.
- Assemble all findings in a report with the necessary table and exhibits to describe the work.

A partial list of communities in which Mr. Laurin has performed the above is as follows:

- City of Phoenix
- City of Scottsdale
- City of Glendale
- City of Chandler
- City of Surprise
- City of Casa Grande
- City of Eloy
- Maricopa County
- Pinal County
- Town of Gilbert
- Town of Queen Creek

Wastewater Collection and Treatment

Cottonwood WWTP and Collection System, Cottonwood, Arizona
Fort Dix Army Garrison, New Jersey
Chandler WWTP #1, Chandler, Arizona
NYS Office of General Services, Albany, New York
West Area Water Reclamation Facility, Glendale, Arizona

Water Resource Master-Planning and Design

Water and Sewer Master Planning, Chandler, Arizona (1982 & 1987)
Water Supply Master Planning, Ocean County, New Jersey
Sewer Master Planning, Greece, Monroe County, New York
Storm Drainage Systems Studies, Phoenix, Arizona

Exhibit I - 2

WASTEWATER SYSTEM PERFORMANCE SPECIFICATIONS

Johnson Utilities agrees to provide wastewater services to the Skyline Ranch development. The wastewater collection and treatment system shall be designed in accordance with design criteria established herein and more specifically described below and in Table A-1, attached.

1. The wastewater treatment facility (WWTF) shall be fed by a gravity sewer collection system designed and constructed to give mean velocities, when full-flowing, of no less than 2.0 ft/sec based on Manning's formula using an "n" value of 0.013. (ADEQ Bull No. 11 Chapter IV).

2. The WWTF shall be located, subject to Owner's approval, within Skyline Ranch in an area of low elevation, circa 1420 ft. contour, near Skyline Drive alignment.

3. Should the WWTF hydraulic requirements necessitate an influent raw sewage lift station, that lift station shall be designed in accordance with the applicable requirements of ADEQ Bull No. 11, Chapter V. Odor control shall be provided as further defined in item 4.c below.

4. The WWTF shall have a design capacity of no less than 630,000 gal/day, designed and constructed in accordance with ADEQ Bull No. 11, Chapter 6 with the following clarifications:

   a. Setbacks shall be pursuant to the proposed ADEQ rules to become effective on January 2001. (250 ft setback from nearest property line).

   b. Treatment process shall include a polishing step to reduce discharge parameters to the following levels:

Turbidity	2 NTU (24 Hour Average)
TSS	10 mg/L
BOD_5	10 mg/L
Total N	8 mg/L
Total Coliforms	2.2/100 mL (7 day median)
	25/100 mL (not to exceed)
Chlorine Residual	less than 2.0 mg/L
TTHM	100 micrograms/L
TDS	1,000 mg/L

   Wastewater effluent may be used as a source of irrigation water within Skyline Ranch development. Parameter concentration goals above are taken from ADEQ reuse and recharge regulations.

c. Odor control shall be provided to limit discharge of sulfides, organic odors, and VOC emissions. The proposed WWTF's process facilities shall be fully covered and off-gas treatment of entrapped odors will be performed through wet chemical scrubbers meeting the following design criteria.

Hydrogen Sulfide loading for Headworks & Raw Sewage Lift Station	30 ppm avg. 50 ppm peak
Hydrogen Sulfide loading for Biological Processes	5 ppm peak
Odor Removal Efficiency	99%

d. Sludge and residuals disposal systems shall include provisions for dewatering and stabilizing these products for off site hauling and disposal to an approved facility.

5. The WWTF shall have a compact layout which minimizes land area utilized for treatment processes and appurtenant support facilities. Johnson Utilities shall investigate the cost effectiveness of utilizing a treatment technology know as Sequencing Batch Reactor to accomplish the discharge parameters goals listed in item 4 b above. Obtain all necessary local, county and state permits, including Aquifer Protection Permit, Approval to Construct, Approval to Operate to commission this WWTF.

6. Provide a treated effluent storage and delivery system including the necessary pumps and controls for the green belt irrigation of Skyline Ranch. Design parameters shall be as mandated by the Arizona Department of Water Resources (ADWR) and ADEQ, as applicable. Obtain all necessary permits to store and apply the treated effluent.

Table A-1

Projected Population and Waste Water Demands for the Skyline Ranch Parcel

Skyline Ranch Parcel

Area	Lot Size	Land Use	Area (acres)	# D.U.	capita/D.U.[1]	Capita	Waste Water Flows[2]					
							Avg. Day	Avg. Day	Max. Day	Max. Day	Peak Hour	Peak Hour
							gpm	MGD	gpm	MGD	gpm	MGD
Dwelling Units	varies			1785	3.4	6069	421	0.61	843	1.21	1,264	1.82
-		School	12.09	1000 students			17	0.03	35	0.05	52	0.08
Commercial	n/a	n/a	0.00	n/a	n/a	0	0	0.00	0	0.00	0	0.00
								0.00				
Totals				1,785		6,069	438	0.63	876	1.26	1,489	2.15

[1] Capita per dwelling unit obtained from Paul Gardner at Queen Creek Water Co. (Phone conversation 1/27/99)

[2] Wastewater flows obtained from:

Engineering Bulletin No. 11

- Average day demand = 100 gal/capita/day
- Residential Max. day demand = 2.0 * Avg. Day Demand
- Peak hourly demand = 1.5 * Max. Day Demand
- School (cafeteria, gym, showers) = 25 gpsd

Town of Gilbert Water Resources Master Plan (Nov. 1996):

- Commercial = 1,500 gal/acre/day

Exhibit I - 3

WATER SYSTEM PERFORMANCE SPECIFICATIONS

Johnson Utilities agrees to provide potable water services to the Skyline Ranch development. The potable water transmission and distribution system shall be an urban water system designed in accordance with specifications presented herein and more particularly described below and in Table B-1, attached.

1. Water to be provided by Johnson Utilities for potable water use at Skyline Ranch shall meet the latest water quality criteria known as maximum containment limits (MCLs) promulgated by the US Environmental Protection Agency (EPA) and Arizona Department of Environmental Quality (ADEQ) for all primary and secondary constituents. A special note is made of the following:

   a. Arsenic levels are to meet the USEPA's proposed 5 micrograms/L MCL.
   b. Nitrate (as N) concentrations are to be 5 mg/L maximum to allow for the worst – case treatment analysis.

2. Distribution system pressures shall meet the following criteria:

Maximum Pressure	100 psi
Minimum Pressure at Max Day	40 psi
Min Pressure or Residual during Fire Flows & Max Day Demands	25 psi

3. Johnson Utility shall establish a pressure zone for the Skyline Ranch service area below the 1500' contour to limit static water pressure to the levels noted in item 2 above. Reduction of system pressures to Skyline Ranch shall be accomplished through the design and installation of a pressure reducing valve station. All equipment utilized shall meet latest applicable American Water Works Association (AWWA) standards for valves and piping.

4. The Pressure Reducing Valve station shall be equipped with a flow meter to be placed on the low-pressure side of the station to monitor demand flows. The meter shall be propeller type meeting the requirements of AWWA C704.

5. Delivery of potable water from Johnson Utilities is to be performed through a single transmission main. A storage facility shall be placed within the Skyline Ranch development and fed from the development's distribution system to provide the peak demand and fire flow storage volumes calculated in Table B-1. Tank system design shall be in accordance with ADEQ's Bull No. 10. Steel tanks shall be painted and provided with a cathodic protection system designed in accordance with AWWA D-102.

6. Johnson Utilities shall perform a network analysis to investigate the extension of its existing facilities to serve Skyline Ranch. This analysis shall be performed using Water CAD ® or KY Pipe ® water distribution system software. The results shall be reviewed by Skyline Ranch's engineer prior to final design of the water system improvements.