

## Norman Gaume, P.E. (ret.)

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### TESTIMONY

| Revised May 17, 2015; references revised May 28, 2015

TO: Board of County Commissioners, Bernalillo County, New Mexico

RE: South Valley Regional Association of Acequias and Center for Social Sustainable Systems Appeal No. ZCOA2015-0009, Original Case No. SPR-20130004, Bernalillo County planning staff request for written testimony in advance of May 11 continued BCC Santolina hearing

SUBJECT: Water Supply Reasons to Disapprove the Santolina Master Plan

This testimony supersedes my written testimony dated May 4, 2015.

I am an expert in the matters of the Albuquerque metropolitan area's water supplies and the water supplies legally available within the Middle Rio Grande as limited by the Rio Grande Compact. My qualifications and experience are summarized in the attachment. I am the architect of the 1997 Albuquerque Water Resources Management Strategy. My directly pertinent water resources management experience includes service as Water Resources Manager for the City of Albuquerque, Director of the New Mexico Interstate Stream Commission, and Engineer-Adviser to the New Mexico Commissioner, Rio Grande Compact.

### INTRODUCTION

Water to meet Santolina's large proposed new annual water demands is not legally available for two reasons: (1) ABCWUA does not have the water rights to supply Santolina, and (2) existing consumptive uses of water in the Middle Rio Grande exceed the legally available supply.

Neither Bernalillo County nor the ABCWUA have provided a basis for any finding that water for Santolina is physically available. An ABCWUA water budget is required, per ABCWUA policy established in 1997. The ABCWUA water budget must recognize practical limits to performance of the ABCWUA Drinking Water Project, reflect creation and maintenance of the groundwater drought reserve and establish the groundwater safe yield taking into account contamination that has rendered large portions of the Albuquerque area regional aquifer off-limits, recognize the overarching limits on consumptive use of water and the excessive current depletions in the Middle Rio Grande, and plan for curtailment of the junior priority ABCWUA water rights portfolio.

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Consulting Engineer (ret.)

Water Resources Management and Planning

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While these constraints reasonably might be ignored for a normal subdivision-scale water availability commitment, it would be irresponsible for Bernalillo County to ignore them in Santolina's case due to the magnitude of Santolina's new water supply request. The County Planning Commission reduced Santolina request for water service to 14,380 acre-feet per year. That amount of water is approximately equivalent to Rio Rancho's current use. It is about 150% of Santa Fe's annual use but would serve a new Santolina population about the size of Santa Fe's. It is about 300% of Intel's historical peak annual use. Santolina's new proposed water use is huge and very significant.

Because Santolina and its agents have neglected to address their proposed consumptive use of water, which is crucial to evaluation of water rights requirements, I estimated Santolina's new consumptive use of water to be 40% of the CPC recommended supply limit, or about 5,600 acre-feet per year. This is equal to the City of Santa Fe's and Santa Fe County's San Juan-Chama water, which cost them about a quarter billion dollars to develop as a drinking water supply.

Santolina's 5,600 acre-feet per year of new consumptive uses would increase by about 15% the approximately 40,000 acre-feet per year of current excess depletions of water in the Middle Rio Grande that exceed the legally available supply. Santolina's additional depletions would substantially increase the difficulties of New Mexico's Rio Grande Compact compliance, the risk of non-compliance, the ABCWUA's associated risk of curtailment of its junior water rights, and the impact of such a curtailment on ABCWUA's existing customers. Others in the Middle Rio Grande also would be adversely affected.

The public and ABCWUA's existing customers deserve full public disclosure of the direct and the cumulative adverse impacts of ABCWUA's providing this large new water service and the required mitigation. These disclosures deserve the BCC's and the ABCWUA's informed consideration before Bernalillo County agrees to Santolina's proposed land uses or ABCWUA commits to serve any new water demand the size of Santolina's.

My professional comments herein are limited to legal and physical water availability for Santolina from ABCWUA in the context of: (1) ABCWUA water supply limits and policies, and (2) the Middle Rio Grande's legal water supply limits that will constrain ABCWUA's future water supply operations to meet Santolina's new water demand.

#### SUMMARY OF TESTIMONY

My testimony below presents evidence pertaining to two technical topics:

- The applicant and its agents have misrepresented that sufficient water supply for the proposed land uses is legally and physically available through the ABCWUA, and

- The County Planning Commission's finding 17 is false. It is not true that "...the County has taken water supply availability and cumulative impacts into account in making a land use development decision and determining the legal and physical availability of water for the Santolina Master Plan."

Three policy issues before you seem especially important:

- The applicant by appealing the County Planning Commission's conditions 8 through 11 seeks to obviate the Planned Communities Criteria requirement that demonstration of water supply availability is a prerequisite to approval of a Level A planned communities master plan.
- Your approval or even conditional approval of the Santolina Master Plan without prior substantive demonstration that water supply from ABCWUA is physically and legally available would contravene Bernalillo County, City of Albuquerque, and ABCWUA policies. Land use decisions are to be informed by water supply availability and cumulative impacts of the new demands.
- Bernalillo County and ABCWUA should work cooperatively pursuant to the BCC's 2012 re-adoption of the 1991 Planned Communities Criteria so that the BCC's consideration for approval of Santolina's proposed land uses and the associated huge new water uses is informed by ABCWUA's substantive public determination of water supply availability and cumulative impacts of providing that water supply in accordance with ABCWUA policies.

#### DIRECTLY APPLICABLE ABCWUA POLICIES

The ABCWUA must publicly consider legal and physical water availability to meet Santolina's new water demand in the context of the Water Resources Management Strategy.<sup>1</sup> Its water resources management policies establish the context required to properly inform both the ABCWUA's water availability decision and BCC's future reconsideration of Santolina's proposed land uses based on a substantive statement from the ABCWUA that it has physically and legally available water for Santolina.

Three of the Water Resources Management Strategy policies are essential to inform ABCWUA's decision to provide Santolina's large new water demands. Various ABCWUA statements that it is capable of providing water to Santolina are made in a vacuum with respect to these policies, which are of critical importance to ABCWUA's existing customers and the resilience of the ABCWUA future public water supply.

- Policy A: ABCWUA is to develop, "update and maintain a water budget" that "shall be the reporting, planning, and management basis for water resources management for the Authority." "To the extent possible, all future water budgets and alternatives shall be developed within the framework of the regional water budget accepted by the Authority." The ABCWUA budget must

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<sup>1</sup> Albuquerque Bernalillo County Water Utility Authority, Water Resources Management Strategy, October 2007.

consider relevant constraints if it is to be meaningful, including recognition of the practical limits that have prevented full use and may preclude future full direct use as drinking water of all the ABCWUA's San Juan-Chama water, contaminated groundwater that constrains its use and adjacent pumping, and the portion of the ABCWUA water rights portfolio that is junior and subject to curtailment for compliance with limits to legally available water.

- Policy B: ABCWUA is to "balance demand with renewable supply using San Juan-Chama water as the primary source of supply." "The Authority shall limit the use of ground water except to meet peak demands or during times of drought." The Authority should develop "the safe yield of the regional groundwater supplies."
- Policy C: "The Authority shall establish a ground-water drought reserve that maintains sufficient water in storage in the aquifer to provide water supply during a prolonged drought. Water levels in the aquifer shall be maintained so that a drought reserve shall be accessible without causing adverse, irreversible impacts to the aquifer."

Other policies of the Water Resources Management Strategy are directly applicable because Santolina's new depletions of water will aggravate the Middle Rio Grande's current water budget deficit, the associated trend toward New Mexico's failure to comply with Rio Grande Compact delivery requirements, and the impacts of non-compliance on the ABCWUA water rights portfolio. Those impacts could severely constrain ABCWUA's ability to provide water to existing customers and meet its considerable commitments for future water supply. Cumulative impacts include the potential massive regional impacts of non-compliance with Rio Grande Compact water delivery requirements due to excessive depletions of water in the Middle Rio Grande aggravated by additional Santolina depletions.

- Policy E: ABCWUA is to "work in partnership with federal and state agencies in coordinating and promoting sound water management in the Middle Rio Grande" and "work cooperatively with federal, state, and local entities to quantify water rights in the Middle Rio Grande."
- Policy G: ABCWUA is to "develop and implement a long-term water acquisition plan" that gives full consideration "to the regional context and consideration of agricultural and environmental issues."
- Policy J: ABCWUA is to "protect valued environmental and cultural resources of the region."
- Policy L: ABCWUA is to "link land use planning with water management." "Developments outside the service area should provide water rights or funding for the purchase of new water rights as a condition of service in accordance with the no-net-expense policy." "The Authority should request that member governments take water supply availability and cumulative impacts into account when making land use development decisions..."

These policies are pertinent to and especially important for the BCC's Santolina land use decision, given Santolina's aggravation of the Middle Rio Grande's current unsustainable excess depletions with respect to Rio Grande Compact limits. New Mexico has been and currently remains in compliance with the Rio Grande Compact's Middle Rio Grande water delivery requirements but the trend, which recently has consumed all of New Mexico's large accrued delivery credits, is ominous.

The BCC's 2012 reauthorization without substantive change of the 1991 Planned Communities Criteria recognizes the new roles of the ABCWUA and does nothing to change the obligation of the applicant to show the legal and physical availability of water, quantity and quality. This change in government structure requires a cooperative approach by the BCC and the ABCWUA to comply with their policies that establish the need for the BCC's land use decisions to be informed by water supply availability and cumulative impacts. The BCC should not approve Santolina contingent on ABCWUA's subsequent determination of requirements to provide Santolina with water. ABCWUA should not refuse to address the conceptual details and associated direct and indirect costs of providing Santolina's water supply until after BCC has approved the Santolina land uses. The BCC's and the ABCWUA's separate roles and interrelated decisions require an integrated, cooperative approach.

ABCWUA must not donate its water supply planning services to Santolina in any case. Due to the direct and cumulative impacts, ABCWUA's considerations must be public and approved by the ABCWUA Board.

#### RECOMMENDATIONS

The Bernalillo County Board of County Commissioners must disapprove the Santolina Master Plan because it fails to meet the Planned Communities Criteria threshold requirement of showing that water is legally and physically available and that the master planned community will be self-sufficient.

The BCC could provide for its future reconsideration after the ABCWUA governing board has made a policy determination that the major new water supply for which Santolina seeks an availability commitment is physically and legally available in accordance with ABCWUA and Bernalillo County policies and requirement to satisfy that criterion. The ABCWUA in accordance with its policies also must disclose the direct and cumulative effects for BCC's consideration and acceptance.

Alternately, Santolina can develop a self-sufficient water supply solution and subsequently reapply for the Santolina Master Plan approval.

## TECHNICAL TESTIMONY

The applicant and its agents have misrepresented that sufficient water supply for the proposed land uses is legally and physically available.

1. The applicant's engineer, Bohannon-Huston, Inc., prepared a revised water master plan and a revised wastewater master plan, both dated November 4, 2014, and a memorandum dated March 16, 2015, attached to Consensus Planning's March 17, 2015 letter<sup>2</sup> to BCC Chair Maggie Hart Stebbins. Each of these Santolina documents indicates that the ABCWUA has stated it has the capacity to supply Santolina's water. Bohannon-Huston's assertions that ABCWUA has said it has the capacity to supply Santolina's water are false. ABCWUA has stated only that it is capable of supplying water to Santolina in accordance with its policies and requirements.
2. Capacity implies adequacy and availability of ABCWUA's existing water supply infrastructure (distinct from water delivery infrastructure), water rights, and physical water supply to provide this service. Evidence is to the contrary.
3. Santolina's, the County Planning Commission's, and County staff's various assertions that Santolina's water supply is legally and physically available from ABCWUA on the basis of the ABCWUA's July 29, 2014 letter<sup>3</sup> are not true, for the multiple reasons described herein.
4. ABCWUA represented through Mark Sanchez's testimony<sup>4</sup> on March 25, 2015, that Santolina would receive half or less of the amount recommended by the County Planning Commission, which was 14,380 acre-feet per year. Santolina's request exceeded 22,000 acre-feet.

Mr. Sanchez said in response to Commissioner De La Cruz that ABCWUA has the water to serve Santolina. I respectfully point out that Mr. Sanchez's terse affirmative reply lacks the context and appears to disregard serious constraints imposed by the policies and overarching issues described herein.

Mr. Sanchez plainly said only a fraction of the 14,000 acre-feet of water the CPC suggests as the appropriate amount for Santolina would be available

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<sup>2</sup> Consensus Planning, "Re: Santolina Bernalillo County Commission Hearings, March 25<sup>th</sup> and 26<sup>th</sup>, 2015 with attachments, labeled with coversheet "Additional documents from applicant's agent for 3/25/15 BCC.

<sup>3</sup> Albuquerque Bernalillo County Water Utility Authority, "RE: Santolina Master Plan," letter from Mark S. Sanchez, Executive Director, to Joe Chavez, Chair, Bernalillo County Planning Commission, July 29, 2014.

<sup>4</sup> Board of County Commissioners, County of Bernalillo, draft verbatim minutes of special zoning meeting, Wednesday, March 25, 2015, 1:36 pm.

from the ABCWUA. I am unaware if that ABCWUA limitation was previously on the record but Mr. Sanchez's response to a question from Commissioner De La Cruz is clear:

Madam Chair, Commissioner De La Cruz, yes. However, as I stated, in order for this community to be self-sustaining into the future, there would have to be a significant investment in reuse infrastructure so that the consumption levels estimated in the master plan of 14,000 acre feet would likely be cut in half or a fraction of that. (emphasis added)

Thus, ABCWUA's July 29, 2014 letter says only that, in accordance with its policies, which will be difficult and very expensive for Santolina to comply with at no-net expense to ABCWUA and its customers, ABCWUA can provide half or less of Santolina's water. I am not aware of Bernalillo County staff's or Santolina's response or acceptance of this policy limit.

5. Bohannon-Huston's March 16, 2015 memorandum<sup>5</sup> to "The Record" that is attached to Consensus Planning's March 25 submittal is replete with irrelevant and misleading statements. For example, the statewide picture (item #1 and attached table) is irrelevant. The Middle Rio Grande water use statistics (item #2 and attached table) are misleading. Uncontrollable losses due to evaporation from the river and Elephant Butte Reservoir and the bosque's riparian evapotranspiration consume half or more of the Middle Rio Grande's legally available water supply pursuant to the Rio Grande Compact, effectively doubling the percent usage statistics Bohannon-Huston cites. Bohannon-Huston's statement in item #3 regarding "making gains in agricultural water efficiency" is a false panacea, since water can be gained for other uses only if agricultural fields are fallowed and maintained to control evapotranspiration from them. Increased agricultural efficiency only makes water that was lost to return flows available for consumptive use by the irrigated crops, which for the purposes of Santolina, would hurt, not help, physical and legal water availability.
6. Bohannon-Huston's March 16, 2015 memorandum to "The Record" falsely implies in item #7 that Santolina's water needs are covered by the ABCWUA Water Resources Management strategy. The WRMS is essential and directly applicable but its important policy determinations do not yet exist. These include establishing an ABCWUA water budget that recognizes Rio Grande Compact legal limits to Middle Rio Grande depletions of water, creating an ABCWUA groundwater drought reserve, and determining the groundwater safe yield. Just because ABCWUA is planning for growth does not mean that it has explored or found solutions to providing water for growth. It has not.

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<sup>5</sup> Bohannon-Huston, Inc., "Memorandum to The Record (Santolina Review and Approval Process)," pages 12 through 18 of 100 from "Additional documents from applicant's agent for 3/25/15 BCC, March 16, 2015.

Neither has ABCWUA explored the direct and cumulative impacts of doing so, including fallowing of large areas of MRGCD agricultural lands to secure the Rio Grande water rights required to support increased groundwater pumping for Santolina. Bohannon-Huston's item #8 ignores the existing water availability commitments made previous by the ABCWUA.

7. Bohannon-Huston's item #9 compares Santolina's 2035 demand with the entirety of the current ABCWUA demand and says it's a small percentage. How is that relevant to Santolina's request for service that would have Bernalillo County agree to provide water to a new community the size of Santa Fe with 150% of Santa Fe's use and Santolina's argument that the BCC should approve the land uses that generate that very significant new water demand on the basis of a highly qualified two page letter from ABCWUA?
8. MRGCD provides water to irrigate farmlands from which pre-1907 water rights previously have been acquired, severed and transferred for the purpose of offsetting depletion of the Rio Grande caused by municipal and industrial groundwater pumping. Such irrigation continues the water depletions that the State Engineer's management system relies on being eliminated as the result of the water rights transfer, while the State Engineer allows new depletions associated with new groundwater pumping to commence. This double dipping contributes to the current excess depletions of water in the Middle Rio Grande that exceed the legally available supply.
9. Bohannon-Huston's March 16, 2015 memorandum to "The Record" falsely implies in item #7 that the ABCWUA 40-year water plan accommodates their new water demand. The State Engineer's regulatory requirement for 40-year water plans is to demonstrate that ABCWUA doesn't own water rights in excess of its needs over the next 40 years. Thus, the ABCWUA illustrates its projected demand for a high-growth scenario and shows it will need all its existing water rights to meet that demand. It is not truthful to imply the ABCWUA 40-year water plan means water is available for growth, including Santolina, to meet that demand curve, for reasons stated herein.
10. The ABCWUA letter dated July 29, 2014, is not sufficient to comply with Bernalillo County's Planned Communities Criteria that a developer document legal and physical water availability. Water supply is limited by the most restrictive of three essential components: infrastructure, physical water, and the legal right to take that physical water. Infrastructure is the only component Santolina has addressed. Santolina and its agents have addressed partially only the water delivery infrastructure and have ignored the water supply infrastructure, even though the ABCWUA July 29, 2014 letter says, "Santolina will need to be a sustainable, self-sufficient development in terms of water and wastewater treatment resources..."



11. Santolina and the CPC have totally ignored the physical water supply availability and the availability of water rights required to legally access that supply, except to dismiss this major issue by implying both are available from the ABCWUA with no problems or cumulative effects. That is blatantly false. The BCC has no evidence that physical supply is available.
12. The BCC doesn't don't know from whom or how Santolina or the ABCWUA will acquire the necessary water rights, or the cumulative effects of those acquisitions, or even if such rights can be acquired. ABCWUA and Albuquerque have acquired only 5,115 acre feet of senior water rights since the State Engineer began regulating groundwater pumping to keep the river whole in the mid 1950s, and only 1,272 acre-feet in the last 10 years, as set forth in Appendix A of the ABCUWA's 2012 update to its 40-year plan. Market availability of Middle Rio Grande water rights to deplete the Rio Grande is very limited. MRGCD water rights with a priority date of 1930 are not available for acquisition and transfer pursuant to the policies and legal position of the MRGCD. How would Santolina, or ABCWUA using Santolina's money, acquire the new water rights? BCC must not accept the CPC finding #17 and Bernalillo County staff statements that water is legally available for Santolina in light of these facts.
13. Santolina and ABCWUA staff appear to be relying on ABCWUA's existing water groundwater pumping permit, which has an unrealistic upper limit of 155,000 acre-feet per year. The State Engineer increased the allowable pumping under that permit after the City of Albuquerque came close to exceeding the prior annual limit of 132,000 acre-feet in the 1980s. That was before the aquifer investigations that led to the 1997 Albuquerque Water Resources Management Strategy. ABCWUA's groundwater pumping permit requires ABCWUA have Rio Grande water rights or excess San Juan-Chama water to offset the depletion of the flow of the Rio Grande caused by its groundwater pumping. ABCWUA's owns a total of only 26,130 acre-feet of water rights to deplete the flow of the Rio Grande per Appendix A of the 2012 update to the ABCWUA 40-year plan.<sup>6</sup> The vast majority of those rights are too junior to remain "in priority" if New Mexico fails to meet its Rio Grande Compact delivery requirements. All ABCWUA water rights are required to offset current depletions.
14. Overarching Rio Grande Compact water delivery requirements from the Middle Rio Grande for use below Elephant Butte Dam limit Middle Rio Grande depletions. Exceeding these depletion limits, as is currently the case, puts a portion of ABCWUA's legal water supply availability at risk. Indeed, it puts all New Mexico taxpayers at risk.

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<sup>6</sup> Albuquerque Bernalillo County Water Utility Authority, "40-Year Water Development Plan," Updated January 2012.

15. Middle Rio Grande water budgets and the trends of New Mexico's Rio Grande Compact compliance show the Middle Rio Grande's aggregate depletions of water exceed the Middle Rio Grande's Rio Grande Compact legal entitlement to water by about 40,000 acre feet per year on average. These excess depletions were quantified by the 2004 Middle Rio Grande Water Supply Study<sup>7</sup>, which was initiated by the New Mexico Interstate Stream Commission for use by federal and state agencies. The Middle Rio Grande Water Budget – Draft, dated June 25 2014, and prepared by federal, state, UNM faculty, and private sector consultant experts, concluded that depletions in the Middle Rio Grande exceed the legally available surface water supply by about 43,000 acre-feet per year during drought years from 2008 through 2012.<sup>8</sup> Rio Grande Compact compliance in recent years has consumed all of New Mexico's accrued delivery credits established in the late 1990s and early 2000s. The accrued credit was 265,000 acre-feet in 2002. It is now zero.<sup>9</sup>
16. New Mexico's near-term compliance with its Rio Grande Compact water delivery obligations is in jeopardy, with the potential outcome that the junior priority ABCWUA water rights, including ABCWUA's 17,875 acre-feet of vested water rights and its 1,800 acre-feet of "Valley Wells" rights, will be curtailed through water administration. This is a very serious situation. Any decision to commit water availability to a new demand the size of Santolina's should be made in the context of the vulnerability of ABCWUA's water rights that are junior to extensive senior water rights, including the unquantified Pueblo water rights, pre-1907 water rights, and MRGCD's 1930 priority water rights. That decision also should consider the risk and consequences of New Mexico's failure to comply with the Rio Grande Compact water delivery requirements through the Middle Rio Grande due to failure to stop or manage the current excess depletions of water in the Middle Rio Grande.
17. Santolina and ABCWUA imply, by stating that planning for growth is being addressed and referencing ABCWUA's groundwater pumping permit, that there are no problems in increasing groundwater pumping under ABCWUA's permit to pump up to 155,000 acre-feet of groundwater per year to serve a population of 800,000<sup>5</sup> or a million.<sup>10</sup> In addition to ABCWUA's ownership of only a tiny fraction of the Rio Grande water rights that would be required to

<sup>7</sup> S.S. Papadopoulos & Associates, Inc., Middle Rio Grande Water Supply Study, prepared for the NM Interstate Stream Commission, 2004.

<sup>8</sup> Thomson, Bruce; Roach, Jesse; Llewellyn, Dagmar; Shafike, Nabil; Jordan, Dave; Middle Rio Grande Water Budget – Draft. Prepared under the auspices of the Middle Rio Grande Water Assembly Water Budget Task Force. June. 25. 2014.

<sup>9</sup> Shafike, Nabil. Excel spreadsheet data and graphic of the history of Rio Grande Compact compliance and accrued debit/credit status. April 30, 2015

<sup>10</sup> Albuquerque Bernalillo County Water Utility Authority, email from David Morris to KUNM, March 2015.

fully utilize this groundwater-pumping permit, this position ignores the sure path to water supply failure that lesser amounts of historical annual pumping were shown to be by the technical investigations leading to the Water Resources Management Strategy. These investigations motivated and justified huge public expenditures to develop and fully use San Juan-Chama water, create a water budget, reduce groundwater pumping, create a groundwater drought reserve, and determine the groundwater safe yield.

18. Even though full consumptive use of the ABCWUA's San Juan-Chama water is highly advantageous from a water rights and water resources management perspective, ABCWUA has not yet met its goal of full consumptive use or the diversion permit limit of 96,200 acre-feet per year. This renewable water supply comes with 50% "free" water—no water rights required other than the diversion permit. ABCWUA can divert 200% of its San Juan-Chama water from the river and treat it for its customers provided that it returns half the water to the river through the wastewater treatment plant. The ABCWUA maximum annual diversion to date of about 60,000 acre-feet represents less than two-thirds of the goal, despite that the 2007 Water Resources Management Strategy states full operations were expected in 2009. The result is that groundwater pumping remains elevated. Underuse of surface water and the associated elevated groundwater pumping means creation of the groundwater drought reserve is lagging behind its potential.
19. ABCWUA staff forecasts of excess return flows in the future are not supported. ("Return flow obligation is less due to reduced pumping—available in the future for other uses"<sup>11</sup>) That claim, which I do not expect can withstand scrutiny, and the large volumes of ABCWUA San Juan-Chama water in reservoirs do not indicate that ABCWUA has water rights and water resources that exceed its current needs. ABCWUA's depletions of the river in 2014 required all of its return flows, all of its Rio Grande water rights plus the release of 15,202 acre-feet of San Juan-Chama water to offset current and historical pumping-caused depletions of the Rio Grande in 2014.<sup>12</sup> All stored San Juan-Chama water will be needed to offset river depletions as return flows from supplying groundwater to customers are reduced by direct use of surface water while the river continues to suffer substantial depletions of water due to ABCWUA's historical pumping. San Juan-Chama direct use does not generate any net return flows due to the advantageous surface water diversion permit terms, while the delayed effect of river depletions caused by

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<sup>11</sup> Water Authority's Wastewater System - Permitting, Compliance, Plant and Collection System Operations and Capital Improvements Planning; *Presentation to the ABCWUA Board on 3/18/15*, John Stomp P.E., Chief Operating Officer; <https://abcwua.legistar.com/View.ashx?M=F&ID=3663425&GUID=59229B48-9D86-4D08-BC98-F21165F9F311>

<sup>12</sup> New Mexico Office of the State Engineer. "Final accounting for Albuquerque Bernalillo County Water Utility Authority (ABCWUA) Permits: SP-4830, SP-4819, RG-960, RG-4462, and USR-2." letter from the State Engineer's Middle Rio Grande Water Master to the ABCWUA dated March 31, 2015.

historical groundwater pumping continues. An ABCWUA water budget that considers Rio Grande Compact limits is the only proper context for evaluation of claimed excess and available ABCWUA water rights, return flows, or physically available water.

20. I am aware that technical work to establish the water budget and groundwater drought reserve is in progress. A meaningful water budget must consider the fraction of its San Juan-Chama water that ABCWUA can practically provide to its customers. An ABCWUA water availability commitment to Santolina should be based on a finding that there is water in that budget for Santolina, that service to Santolina will not compromise the groundwater drought reserve or cause the safe yield to be exceeded, and that ABCWUA's physical groundwater supply supports this major additional new use. Such a budget must also address the high volume of water supply commitments previously made by ABCWUA to other developments.
21. Groundwater contamination and arsenic have placed a large fraction of the aquifer off-limits and adjacent areas of the aquifer at risk. Groundwater pumping and creation and maintenance of the drought reserve must reflect management strategies to deal with the Kirtland jet fuel leak disaster and the old contamination cases (San Jose, GE, Sparton, and many others in the inner valley) that have resulted in the closing of some of the water system's best well fields and threaten others. Much of the aquifer is threatened with migration of contaminants moving toward groundwater pumping centers. Additional water supply pumping to serve Santolina will aggravate both the reliance placed on the areas of the aquifer that remain available to produce our public water supply and the transport of contamination to public water supply wells. The water budget must reflect contamination-driven limits to groundwater pumping.
22. My review of the ABCWUA's recent groundwater pumping indicates most west-side well fields and many east side wells are out of service or have very limited production due to naturally occurring arsenic. Physical availability of water for Santolina should consider Santolina's "no net cost" obligation to pay capital and operating costs of arsenic removal from water produced by wells that are closest to Santolina but have very high arsenic concentrations or pay the additional costs to transport the water to Santolina from more distant ABCWUA wells.
23. ABCWUA's Water Resource Management Strategy Policy L is to Link Land Use Planning with Water Management. In part the policy provides that "The Authority should request that member governments take water supply availability and cumulative impacts into account when making land use development decisions and that member governments adopt policies integrating and use, transportation, economic development and other

planning efforts with water resource management." Bernalillo County should adhere to this policy by informing its Santolina land use decision with the facts pertaining to the water supply that is or is not legally and physically available to serve Santolina, including the direct and cumulative effects.

24. Santolina's strategy for its water supply does not meet the self-sufficiency criterion of the Planned Communities Criteria.

The County Planning Commission's finding 17 is false. There is no evidence "...the County has taken water supply availability and cumulative impacts into account in making a land use development decision and determining the legal and physical availability of water for the Santolina Master Plan."

1. The County has relied entirely on a general statement of the ABCWUA that it has the capability to provide a significant new water supply. The County has not considered cumulative impacts including reduced ABCWUA water supply and groundwater drought reserve for existing customers, and likely requirements for Santolina or ABCWUA to acquire additional Middle Rio Grande agricultural water rights to serve Santolina's significant incremental water demand.
2. County staff's statement to the BCC that ABCWUA's July 29, 2014, letter is a "water availability letter" does not conform to Mark Sanchez's description of the meaning of that letter in his March 25, 2015 testimony<sup>3</sup> to the BCC. Mr. Sanchez said his July 29, 2014 letter had been misconstrued:

With regard to the letter which was sent to the CPC, I think it was taken a little out of context. It's been represented that we either endorsed it or committed service, neither of which is the case. We were simply asked a question by staff and the CPC could the water authority serve this development, and the answer was yes. However, they would have to meet all the policies and ordinances.

Thank you for your consideration of this testimony. I would be pleased to have the opportunity to present the highlights of this testimony and respond to any questions you may have.

Sincerely,

/s/

Norm Gaume, P.E. (ret.)

Norm Gaume, P.E. (ret.)  
Qualifications and Experience Summary

Norm Gaume is a licensed water engineer near the end of 40-year career working on water issues in New Mexico. He grew up in New Mexico and earned Bachelors and Masters Degrees in Electrical Engineering and Civil Engineering (water and wastewater) from New Mexico State University. His experience includes 19 years in water and wastewater utilities operations management and water resources planning for the City of Albuquerque, 6 years as Director of the New Mexico Interstate Stream Commission, and 12 years as a self-employed water resources management consultant. His consulting engagements include serving as an expert witness for the ABQWUA in its condemnation of New Mexico Utilities.

Highlights of Mr. Gaume's water resource development and management experience that are also pertinent qualifications for his testimony regarding the water supply implications of the proposed Santolina development include:

- Leading Albuquerque's investigations and public planning process 1990-1997 that dispelled the myth of Albuquerque's infinite aquifer and established Albuquerque's plan for full consumptive use of its San Juan-Chama water with river diversions of twice that amount. Before that, Mr. Gaume managed a fast-tracked, comprehensive rehabilitation of Albuquerque's water production facilities. Without these improvements, Albuquerque would have not met its peak summer demand in the highest water production year on record. Mr. Gaume supervised the creation and initial implementation of Albuquerque's water conservation program.
- As ISC Director 1997-2002, Mr. Gaume determined the elements of and negotiated the state's successful settlement for New Mexico's permanent compliance with the US Supreme Court's Pecos River Compact compliance decree between the State of New Mexico, the Pecos Valley Artesian Conservancy District, Carlsbad Irrigation District, and the US Bureau of Reclamation. The settlement included reduced depletions and getting water to Texas through the last dam in New Mexico at Carlsbad. Mr. Gaume spearheaded passage of a new state law that authorized the settlement. The settlement has met all its objectives. Mr. Gaume also was Engineer-Adviser to the New Mexico Commissioner, Rio Grande Compact Commission.
- As ISC Director, Mr. Gaume conceived the Active Water Resources Management program for the State Engineer's priority administration of water rights before completion of adjudications. As a consultant, Mr. Gaume helped write the State Engineer's statewide implementing general regulations. The New Mexico Supreme Court recently upheld this program and the general regulations following more than eight years of litigation initiated in the Middle Rio Grande.
- As a consulting engineer and key member of a small team, Mr. Gaume worked for 8 years, from initial federal and state permitting through facilities start-up and initial operations, to implement Santa Fe's, Santa Fe County's, and a private developer's joint diversion of San Juan-Chama and Rio Grande water for drinking.