



**MINUTES OF THE MEETING OF THE
TECHNICAL ADVISORY COMMITTEE TO THE
SUBCOMMITTEE TO STUDY DOMESTIC AND MUNICIPAL WATER WELLS
(Assembly Bill 408, Chapter 636, *Statutes of Nevada 1999*)
March 20, 2000
Las Vegas, Nevada**

The third meeting of the Technical Advisory Committee to the Subcommittee to Study Domestic and Municipal Water Wells (A.B. 408) was held on Monday, March 20, 2000, at 10 a.m., in Rooms 4412 B and C of the Grant Sawyer State Office Building, 555 East Washington Avenue, Las Vegas, Nevada. Page 2 of these minutes contains the “Meeting Notice and Agenda.”

TECHNICAL ADVISORY COMMITTEE MEMBERS PRESENT:

Roland Westergard, Carson City, Chairman
Jay Bingham, Las Vegas
Kay Brothers, Las Vegas
Don Dickson, Las Vegas
Tim Hafen, Pahrump
Bruce Hamilton, Las Vegas
John Hiatt, Las Vegas
Ferin Konakis, Elko
Bjorn Selinder, Fallon
R. Michael Turnipseed, Carson City
Steve Walker, Reno

TECHNICAL ADVISORY COMMITTEE MEMBER ABSENT:

Paula Brown, North Las Vegas
Mark Russell, Las Vegas

LEGISLATIVE COUNSEL BUREAU STAFF PRESENT:

Linda Eissmann, Senior Research Analyst, Research Division
Kimberly Marsh Guinasso, Principal Deputy Legislative Counsel, Legal Division
J. Randy Stephenson, Senior Deputy Legislative Counsel, Legal Division
Sally Kennedy, Senior Research Secretary, Research Division

MEETING NOTICE AND AGENDA

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| Name of Organization: | Technical Advisory Committee to the Subcommittee to Study Domestic and Municipal Water Wells (Assembly Bill 408, Chapter 636, <i>Statutes of Nevada 1999</i>) |
| Date and Time of Meeting: | Monday, March 20, 2000 10 a.m. |

Place of Meeting: Grant Sawyer State Office Building
Room 4412 B and C
555 East Washington Avenue
Las Vegas, Nevada

A G E N D A

- I. Opening Remarks and Introductions
Roland Westergard, Chairman
- *II. Approval of the Minutes of the Meeting Held on January 12, 2000
- III. Presentation of Existing Relationship Among Statutes and Regulations Related to Water Quantity and Quality
Tom Porta, Chief Bureau of Water Quality Planning, Division of Environmental Protection
Alan Tinney, Chief, Bureau of Health Protection Services, Health Division
R. Michael Turnipseed, State Engineer, Division of Water Resources
- IV. Presentation of Water Quantity Projections of the Las Vegas Valley Groundwater Basin
Kay Brothers, Director, Southern Nevada Water Authority Resources Department
- *V. Discussion of Additional Issues for Consideration by the Technical Advisory Committee (TAC)
Roland Westergard, Chairman
- *VI. Selection of Procedures and Strategies for Addressing Issues Selected by the TAC
Roland Westergard, Chairman
- VII. Public Comment
- VIII. Future Meeting Schedule
- IX. Adjournment

*Denotes items on which the committee may take action.

Note: We are pleased to make reasonable accommodations for members of the public who are disabled and wish to attend the meeting. If special arrangements for the meeting are necessary, please notify the Research Division of the Legislative Counsel Bureau, in writing, at the Legislative Building, 401 South Carson Street, Carson City, Nevada 89701-4747, or call Kennedy at (775) 684-6825 as soon as possible.

Notice of this meeting was posted in the following Carson City, Nevada, locations: Blasdel Building, 209 East Musser Street; Capitol Press Corps, Basement, Capitol Building; City Hall, 201 North Carson Street; Legislative Building, 401 South Carson Street; and Nevada State Library, 100 Stewart Street. Notice of this meeting was faxed for posting to the following Las Vegas, Nevada, locations: Clark County Office, 500 South Grand Central Parkway; and Grant Sawyer State Office Building, 555 East Washington Avenue.

OPENING REMARKS AND INTRODUCTIONS

Roland Westergard

Roland Westergard, Chairman, called the third meeting of the Technical Advisory Committee (TAC) to order at 10:02 a.m. He excused Paula Brown, North Las Vegas, Nevada, for medical reasons. He announced to the TAC that Mark Russell, Las Vegas, declined participation on the TAC and asked Senator Rhoads that he be replaced. Chairman Westergard reminded members that the TAC would make final recommendations for proposed legislation no later than July 2000 to the Subcommittee to Study Domestic and Municipal Water Wells.

APPROVAL OF THE MINUTES OF THE MEETING HELD ON JANUARY 12, 2000

Bruce Hamilton, Member, Nevada Well Owners' Association, Las Vegas, Nevada, requested that two sentences on page 11 be edited to read "But existing users do not have concerns because they do not face an unintended expense in continuing to access water that they already possess. If new users want to access this water, they are aware of a relatively high barrier to cross to get to it." John Hiatt, Member, Advisory Committee for Groundwater Management, Las Vegas, suggested a revision of Mr. Goff's comments on page 13 and 14. Kay Brothers, Director, Southern Nevada Water Authority (SNWA), Las Vegas, requested "Las Vegas water" be changed to "Las Vegas Wash" on page 14.

MR. BINGHAM MOVED FOR APPROVAL THE MINUTES OF THE TECHNICAL ADVISORY COMMITTEE'S MEETING HELD ON JANUARY 12, 2000, IN LAS VEGAS, NEVADA, WITH THE CHANGES NOTED. THE MOTION WAS SECONDED BY MR. DICKSON AND CARRIED UNANIMOUSLY.

**PRESENTATION OF EXISTING RELATIONSHIPS AMONG STATUTES AND REGULATIONS
RELATED TO WATER QUANTITY AND QUALITY**

Chairman Westergard introduced members of the panel and explained that Jon Palm would present information on behalf of the Bureau of Health Protection Services in place of Alan Tinney.

Tom Porta

Tom Porta, Bureau Chief, Bureau of Water Quality Planning, Department of Conservation and Natural Resources, Division of Environmental Protection (DEP), Carson City, Nevada, referred to a document titled "State of Nevada - Comprehensive State Groundwater Protection Program Profile," (Exhibit A), highlighting the following:

- It is a comprehensive summary of legislation, regulations, and agencies responsible for groundwater protection programs.
- The DEP is the lead agency for groundwater protection in Nevada and administers several programs related to protecting groundwater:
 1. The ability for the DEP to permit discharges to waters of the State, including groundwater, as allowed by Nevada's Water Pollution Control Law. This includes groundwater permits issued for infiltration basins, land application of treated effluent, and septic systems with capacities greater than 5,000 gallons per day. Requirements placed on a groundwater permits include discharge limits, monitoring wells, and adherence to action levels to ensure limits are not being exceeded.
 2. Low interest loans and grants are available to communities that move off individual septic systems and onto centralized treatment plants where public water systems have been impacted by nitrate contamination. Obtaining definitive proof that a public water system is contaminated by septic systems is difficult and the subject of intense criticism. The financial incentives help communities offset costs for sewer hookups and building additional treatment or package plants.
 3. Underground Injection Control (UIC) is a program, which issues permits for activities such as: (1) geothermal reinjection; (2) mining water reinjection; and (3) remediation projects.
 4. The Corrective Action Bureau oversees groundwater remediation projects requiring the UIC permit. Examples of a groundwater remediation projects include petroleum contamination from leaking underground storage tanks or perchlorate from historic chemical process operations.
 5. Wellhead Protection is a voluntary program to provide technical and financial assistance to local communities with public drinking water wells that are developing and implementing wellhead protection plans. These plans are used by local leaders to enact ordinances or other measures to help prevent contamination of wells. Carson City recently had a Wellhead Protection plan approved by the DEP and

applied for grants to help subsidize the hookups by private individuals to the city sewer system.

- The Clean Water Act pertains primarily to surface water and has no specific requirements for protecting groundwater. That responsibility is left to the states. However, under recent changes to the Safe Drinking Water Act, new requirements have been put forth to give the United States Environmental Protection Agency (USEPA) a more active role in State groundwater issues. The Clean Water Act specifically states it is the policy of Congress that the authority of each State to allocate water quantities within their respective jurisdictions shall not be superseded or otherwise impaired by requirements of the Act. Similar language is contained in the *Nevada Revised Statutes*.

Mr. Porta concluded his presentation by listing DEP's range of Groundwater Protection Programs: (1) regulation point source type controls (such as the UIC and Groundwater Permit Programs); (2) various levels of groundwater clean-up by the Bureau of Corrective Actions; and (3) volunteer participation in the Wellhead Protection program which is a preventative measure.

Chairman Westergard expressed concerns about the proliferation of domestic wells and septic tanks in rapidly developing areas and asked if there were long- and short-term assurances for the protection of water quality. Mr. Porta explained that the DEP only regulates public water systems; so individual wells do not have any regulations or provisions to prevent contamination. Long-term solutions could be discussed by the Health Division's Bureau of Health Protection Service's representative. Chairman Westergard asked for more detail on the Wellhead Protection plan. Mr. Porta said there are two steps: (1) the community develops a plan which will delineate the capture zone, ensure that contaminate sources are not located within the well field, and identify the types of activities occurring in the area; and (2) after the DEP endorses the plan, the community seeks financial funding to implement the Wellhead Protection plan.

Steve Walker, Water Management Planner, Washoe County Water Resources, Reno, Nevada, asked if regulation was effective regarding the further degradation on the issue of one-acre parcels served by an individual well and septic. Mr. Porta responded that the septic tank density policy of 99 septs per square mile is being investigated. The USEPA recommends 40 septs per square mile. As an example, nitrates have been found in Washoe Valley despite the policy of 99 septs per square mile. Because it is difficult to prove that a septic is the source of water contamination, there is a problem in collecting data on nitrates, he explained. Furthermore, the DEP has no jurisdiction in subdivisions. Mr. Walker suggested the creation of a state policy to define specific tools to determine if septic systems are the cause of groundwater problems. Mr. Porta said additional data would be sought.

Mr. Hafen asked if the DEP has authority to test domestic wells suspected of contamination. Mr. Porta responded that the DEP regulates public water systems, not individual wells.

Mr. Hiatt asked if there was a state policy indicating a maximum of 99 septs per square mile. Mr. Porta explained that it is the policy of DEP to review parcel maps while the Health Division or local Health Department was responsible for subdivisions.

Responding to a question from Chairman Westergard, Mr. Porta explained the DEP can use the State Revolving Fund to offer low interest loans and funds to communities to build various types of treatment plants, and suggested that unused money could subsidize septic hook ups. He said there was a potential for problem because of the lack of data on individual well systems involving fewer than 15 users.

Mr. Walker pointed out that homeowners are required to do a water quality test when they refinance a home, costing between \$80 and \$100 through the State Health Lab, or \$200 at a private lab. He asked if there was some way the DEP could access, manage, and incorporate that data source. Mr. Porta said the DEP could manage the data if they could get it, but citizens were skeptical about providing well samples and there are no regulations in place.

John Hiatt pointed out such data would be very useful. He said the solution to contamination might be a voluntary program for data acquisition and asked if the SNWA tested wells and possessed a large quantity of data. Ms. Brothers confirmed that the SNWA collected data every five years from the aquifer, including domestic wells, for the Las Vegas Valley. Mr. Hiatt suggested a statewide examination of this issue, and Mr. Porta agreed.

Jon Palm

Jon Palm, Manager, Public Health Engineering, Bureau of Health Protection Services (Bureau of Health), Health Division, Carson City, referred TAC members to an outline (Exhibit B). In response to a question about who requires a water quality test at the time of sale of a home on a domestic well, he explained that it is the buyer who must prove to his lender that he has safe water. As a result, it is the mortgage companies who require that the quality of that private well be tested. When the mortgage company selects the Nevada State Health Lab (State Health Lab), those results are shared with the Bureau of Health, which keeps records for 10 to 15 years. Dr. Palm estimated there are 4,000 to 5,000 water quality reports for domestic wells throughout the state as a result of those tests. The State Health Lab records for the past five years are in electronic format which can be referenced by township, range, and section.

Mr. Hafen asked Dr. Palm if there was enough information to point to a problem with in a specific area. Dr. Palm responded no program exists to analyze or plot the data.

Dr. Palm listed the following programs administered by the Bureau of Health:

- The Nevada Safe Drinking Water Program.
 1. The goal is to safeguard public health by increasing the level of protection from exposure to microbiological and chemical contaminants in drinking water.
 2. The definition of a public water system is one that has 15 or more connections, or serves 25 or more. Below those numbers, the regulations do not apply.
 3. While there are construction standards for the infrastructure of new or existing public water systems, there is no regulatory or statutory requirement to check for appropriate water rights prior to the Bureau of Health issuing a permit for a public water system. Areas in the statute that may need additions would include this issue.
 4. Regulation of water quality is the traditional role that the Bureau of Health plays in requiring a public water system to take samples, monitor the quality of its water, and then make a report to the Health Division. In addition, it must report the quality of that water to its customers and submit an annual report called the "Consumer Confidence Report." This is the traditional way of determining if a public water system meets the drinking water standards, but it is after the fact. The samples are taken, and if a contaminant is found present, the source or cause of the contamination would be unknown. The results can take a week or more, which is too late after a contamination event has occurred. When an environmental contamination event occurs, the DEP is involved immediately. The Health Division would not be involved until there is a problem with drinking water in the public water system.
 5. The Drinking Water Loan Fund is similar to the Clean Water Act financial program.
- Prevention of Contamination - The 1996 amendments to the Source Water Assessment Program established means by which the prevention of contamination could be realized. The four steps include:
 1. The Source Water Assessment Program locates the point of water diversion and any potential sources of contamination to the drinking water source statewide.
 2. The UIC Program consists of obtaining information from the DEP regarding the location of discharges into groundwater.
 3. The Wellhead Protection Program refers communities after an initial assessment to DEP for implementation of their plan.
 4. Other prevention activities include increasing the requirements for certified operator of treatment systems,

increasing the ability of public water systems to maintain compliance with the Safe Drinking Water Program, and producing a safe and reliable supply of water. The prevention and contamination section is not a regulatory requirement, but protecting the drinking water system could avoid costly litigation.

- The review and approval of subdivisions examines the quality of groundwater, because the Bureau of Health signs the final map with regard to drinking water quality and wastewater disposal. The Bureau of Health works with the DEP for wastewater issues and the DEP is under a statutory requirement to notify the Health Division before the final map is signed.
- Review and approval of wastewater disposal.
 1. The Health Division reviews and approves wastewater disposal systems of less than 5,000 gallons per day for residential septic systems. In excess of 5,000 gallons per day, review is the responsibility of the DEP. The Bureau of Health examines well design and operating systems as a prevention of contamination of groundwater.
 2. The Governor's Fundamental Review Committee is looking at a public health engineering program with regard to drinking water, subdivisions, and wastewater disposal. The Review Committee is also considering combining part of the Health Division with DEP for improved efficiency and public service.

Dr. Palm concluded by suggesting the TAC consider proposing a statutory link between the Division of Water Resources and the Drinking Water Program, by requiring developers and people planning to build new public water systems to demonstrate a water right before a permit to operate a public water system is authorized from the Health Division.

R. Michael Turnipseed, State Engineer, Carson City, asked: (1) How many different chemical constituents are tested? and; (2) who sets the pass/fail standards? Dr. Palm stated the drinking water program has approximately 80 to 85 individual chemical constituents and the United States EPA sets the drinking water standard called the maximum contaminate level (MCL). A state must adopt the MCL or require a stricter MCL. Nevada has adopted all of the EPA requirements. He said the results are sent to the Bureau of Health for review and if a contamination is found that exceeds the MCL, then appropriate action is taken to get the water system in compliance.

Mr. Hafen advised the TAC to follow up with suggestions for new legislation on this issue and asked Dr. Palm for instances where a water system would still be permitted without the authorization of the Public Utilities Commission and DEP. Dr. Palm responded that DEP does not sign the map, but the Water Resources is a signatory to a map. The DEP does not worry about water rights on a subdivision issue but is involved on the permitting of a public water system where the development did not go through the subdivision process, such as through parceling or expansion of an existing water system. Mr. Hafen continued, asking if water rights are required for a water system that is the jurisdiction of Public Utilities Commission. Dr. Palm agreed that water systems under the jurisdiction of a PUC are required to satisfy all those requirements before the Bureau of Health issues a permit.

Mr. Walker reported 49 publicly kept water systems in Washoe County due to mobile home parks owning individual wells. He asked what the dialogue between the Water Resources and Health Division is if the park wanted to add 15 more spaces to a well already serving 300. Dr. Palm said this is the example he was referring to.

Mr. Turnipseed asked if the Bureau of Health checked for the water rights and capacity on municipal systems? Dr. Palm affirmed that under the construction of infrastructure regulations for the Nevada Safe Drinking Water Program, approved in 1997, requirements were outlined for the quantity and the ability to produce that amount of water. He said the Bureau of Health will make sure they have the ability to deliver the required quantity of water.

Chairman Westergard asked if Bureau of Health had the authority to deny an application to a public water system based on concerns for water quality resulting from a proliferation of septic tanks. Dr. Palm responded the Bureau of Health had the authority to deny an application until the developer or owner submits proof to the Bureau of Health that the new well meets the Safe Drinking Water requirements, or they must propose treatment on that source to meet all the MCLs. When asked about continued use of septic tanks, Dr. Palm responded that under present statutory requirements, the Bureau of Health cannot deny a public water system because of problems that may occur in the

future. If water quality meets existing standards, a permit must be issued.

Chairman Westergard asked if the Bureau of Health could deny a subdivision? Dr. Palm responded that DEP is charged with reviewing proposals with regard to septic systems and making recommendations to the Health Division as to whether Bureau of Health signs the jurit. The DEP does have this authority and exercises it.

Mr. Hafen cautioned TAC members not to put more than one agency in charge of an area, or to guard against suggesting new legislation giving multiple agencies the same authority in requiring reports.

Mr. Hiatt commented on the time between the initiation of a septic system and possible contamination of groundwater. He asked Dr. Palm if the State had given any thought to looking at this problem or predicting conditions. Dr. Palm responded that the Bureau of Health examined long-term effects five to ten years ago and as a result, DEP developed septic density recommendations. Formally, denitrified systems are not required, however Lyon County, Nevada, unsuccessfully attempted to include it in their ordinances.

Mr. Walker added a comment on denitrification systems saying a new national study indicates that they do not work and 88 percent have failed, possibly due to the maintenance of these systems being the homeowner's responsibility. He suggested that this technology be discarded unless a maintenance district funded by a utility charge is created to perform routine systems checks.

Michael Turnipseed

R. Michael Turnipseed, State Engineer, Water Resources, said little is done in the way of man-caused water quality and quantity problems. He said that well drilling standards and well seal requirements have been in place for years.

- Well seal requirements depend on the distance from a body of water.
- Waivers will be granted for work requiring casing and concrete be removed from top to bottom.
- A term called "safe yield versus perennial yield" applies where poor water naturally occurs. Pumping is not allowed when poor quality water would be discharged to the point of invading the good quality water in the water field.

Mr. Turnipseed said the State Engineer's Office offers assistance to the Health Division and DEP in the area of municipal and domestic wells and has "signoff authority" on subdivisions, but not on parcel maps. Recommendations to relinquish inactive water rights are made to counties to benefit of the pumpage balance.

He concluded stating that in his experience, economics often drive the choice between a community well, individual septic tank, or individual wells with sewage collection systems throughout the development community, regulated or not.

PRESENTATION OF WATER QUANTITY PROJECTIONS OF THE LAS VEGAS VALLEY GROUNDWATER BASIN

Kay Brothers

Kay Brothers, Director, SNWA, Las Vegas, gave a slide presentation on water quantity projections of the Las Vegas Valley Groundwater Basin (Exhibit C). Ms. Brothers clarified that the SNWA will not take out water currently banked in the system.

She presented information about water quantity projections and the role of the Las Vegas Groundwater Basin, and summarized that the groundwater basin will not meet the upcoming future projections:

- In October 1999, a new resource plan was presented before the SNWA Board of Directors. When the SNWA was formed in 1991 through cooperative agreement it was said that every year available water resources would be examined and population projections would be matched to those resources. The first resource plan was taken to

the board of directors in 1996 and was revised in 1997 because of population projections. In 1999, the plan was revised to incorporate new resources.

- Changes in the 1999 water resource plan included the acquisition of Coyote Springs Groundwater, surplus flood control releases, the California 4.4 Plan and Interim Surplus, the Arizona Water Bank, the Muddy River Options, the Cooperative Water Project Memorandum of Understanding (MOU), and environmental issues.
- The resource plan's purpose is to examine the criterion annually to show projected water demands and how the SNWA intends to meet those demands.
- The existing supply of Colorado River water, groundwater, and reuse water total 550,000 acre-feet of water annually for the Las Vegas Valley. Population projections are converted to water demand projections and overlaid with water projects. It may appear that all the existing water resources will be completely utilized by 2006 – 2007, but Nevada has acquired 7,500 acre-feet of groundwater rights from the Coyote Springs Valley. This acquisition will help meet water demands.
- Surplus water is another available option. In 1992, an agreement with the Bureau of Reclamation granted Nevada the right to surplus Colorado River water at no cost. Surplus water can be used to recharge Nevada groundwater basins with 40,000 to 50,000 acre-feet of water.
- California has been utilizing surpluses for years. Since the 1960s, California has exceeded its allocation and used Arizona or Nevada's unused apportionment. Since Nevada's lower basin is now utilizing its 7.5 million acre-feet of water, there is pressure on California to comply with its 4.4 million acre-feet of water allotment.
- California's "4.4 plan" intends to wean the state off of the additional 800,000 acre-feet of water used annually. This plan will be executed in phases over time.
- The Secretary of the United States Department of the Interior will finalize an initiative to establish interim surplus criteria which would declare reservoirs as having a surplus even though they are not in a flood stage. With the proposed initiative, surpluses would be available for interim metropolitan and industrial uses. Nevada could benefit from surplus water under this initiative until the year 2015.
- Nevada is beginning negotiations to bank a large volume of water in Arizona. The interstate banking concept would allow Nevada to pay Arizona for its surplus water or unused apportionment. Theoretically, Arizona would utilize the Central Arizona Project (CAP) instead of using groundwater. In the year 2010 – 2015 when Nevada needs water, Arizona would tap into its accumulated groundwater and deliver it. Arizona has direct recharge facilities similar to Nevada, where water is taken out of a canal returned to the groundwater system through the use of spreading basins. Nevada will ask Arizona for approximately 1.2 million acre-feet of water through in lieu and direct credits. Arizona borrowed funds to build CAP and must find ways to meet its responsibility for paying back the loans. Arizona developed the concept of interstate banking to subsidize this loan.
- SNWA has acquired 5,000 acre-feet of Muddy River options and is in the process of procuring a large well from the federal MX missile program of the early 1980s. This is part of a plan to utilize instate options.

Jay Bingham, Juliet Corporation, Las Vegas, pointed out that the Muddy River flows into Lake Mead and cannot be used as a pipeline under existing law, which states that the river is not to be used as a conduit. Ms. Brothers said there are other solutions through various interpretations. California has been using an over allocation of 800,000 acre-feet per year and Nevada needs approximately one tenth of that to meet demands in the year 2030 to 2035, which is a small amount of water in perspective.

- The Cooperative Water Project has been put aside, but the SNWA has signed a MOU with the counties involved in the project to demonstrate that the application is on hold.
- The SNWA is actively participating in environmental issues by sitting on panels and monitoring studies.

- The most probable scenario based on hydrology and the California 4.4 plan is an interim surplus through the year 2015 to meet demands in the Las Vegas Valley for metropolitan and industrial uses. Currently, Nevada has access to 200,000 acre-feet of water in the Southern Nevada groundwater bank and 50,000 acre-feet of water banked in Arizona as part of demonstration project. In 2017, the Arizona Groundwater Bank authorization terminates, causing a peak in unused apportionment. Regulations have been finalized for the Arizona contracts, and dialogues regarding water bank prices have started.
- Water from the Southern Nevada Groundwater Bank would be utilized, as a last option in the event that Arizona had to bear a shortage, and they ask Nevada to decrease the 500,000 acre-feet of water request. Online facilities will be kept to recharge the groundwater basins in the event that a surplus is declared.
- The aquifer can hold between 30,000 and 40,000 acre-feet of water. Since the aquifer is more responsive to artificial recharge through wells, the potential limit is increased to 40,000 to 50,000 acre-feet of water per year. The United State's Geological Survey (USGS) estimates that the basin will hold approximately 2 million acre-feet of water. The basin will never have a quantity of water replaced that is similar to the amount it held in the 1900s. It is wiser to replace areas of the aquifer that are confined, such as clay lenses, to increase the pressure response.
- Recharge wells are planned for the Northwest area of the basin where there is a greater capacity and area to actually put water into the ground.

Mr. Hiatt pointed out that the recharge program afforded Nevada a window of opportunity and asked when recharge water would no longer be available. Ms. Brothers responded recharge is available until the year 2015, but it would depend on the California 4.4 plan and the condition of the reservoirs.

Chairman Westergard asked about studies and project analysis on other impacts to the groundwater basin. Ms. Brothers concluded her presentation by answering that there have been many groundwater models to examine levels and the groundwater would be used only as a last resort. She added the goal is to keep the levels high to meet Nevada's needs during peak usage.

DISCUSSION OF ADDITIONAL ISSUES FOR CONSIDERATION BY THE TECHNICAL ADVISORY COMMITTEE (TAC)

Chairman Westergard and staff discussed a "List of 13" additional issues for approval of consideration or rejection by the TAC (Exhibit D). These were issues raised during previous public comment.

Mr. Hiatt said that Item No. 3 was unrealistic because water conservation was an issue for everyone and there was a lack of hard data to support the assumption that domestic well owners use less water than others.

MR. HIATT MOVED TO ELIMINATE ITEM NO. 3 ON THE 'LIST OF 13.' THE MOTION WAS SECONDED BY MS. BROTHERS AND CARRIED UNANIMOUSLY.

Mr. Walker said he did not understand why water conservation should be mandated as stated in Item No. 13. He said there are mandates in place requiring low flow toilets for new homeowners and lawn watering restrictions in Washoe County, but water conservation is a generic term that does not carry specific meaning.

MR. WALKER MOVED TO ELIMINATE ITEM NO. 13 ON THE "LIST OF 13." THE MOTION WAS SECONDED BY MR. BINGHAM AND CARRIED UNANIMOUSLY.

Mr. Hiatt said Item No. 10 could be eliminated because the Public Utilities Commission of Nevada did not have anything positive to contribute in terms of managing the Las Vegas Valley Water District. Ms. Brothers clarified that the SNWA and the Las Vegas Valley Water District are two separate entities. The SNWA puts water into the systems of Las Vegas Valley Water District, North Las Vegas, and the City of Henderson as well as contributing regional conservation management.

MR. HIATT MOVED TO ELIMINATE ITEM NO. 10 ON THE "LIST OF 13." THE

MOTION WAS SECONDED BY MR. WALKER AND CARRIED UNANIMOUSLY.

Mr. Turnipseed said that Items No. 1 and 5 are in conflict with each other. He said that Item No. 5 removes the sunset provision, which is a five-year moratorium to keep the State Engineer from revoking permits. Once the sunset provision is lifted, permits could be revoked.

Robert Tretiak, Vice President, Nevada Well Owner's Association, Las Vegas, interpreted Assembly Bill 408 as not specifying a moratorium but as mandating certain well protection provisions. He said the five-year provision was imposed at the last minute and now requests that the five-year provision be removed.

Mr. Tretiak continued saying the funding provision was in a separate bill and suggested that it be extended because it would expire in five years.

Chairman Westergard explained that A.B. 408 was passed in 1999 and it will be premature to end its provisions before any usefulness could be fully realized. Ms. Brother agreed saying the real intent was good and needs time to be tested.

Mr. Hamilton observed that the reason for the five-year sunset provision is to allow for a study period and a permanent recommendation to solidify, extend, or replace the substance of A.B. 408. He said the formation of the TAC was to improve on or finalize what was started in A.B. 408 and to figure out a more competent and comprehensive solution.

Mr. Bingham suggested that additional resources be utilized by the TAC to fully understand this issue, and that an examination of residential versus commercial users was another consideration for the State Engineer's Office.

MR. BINGHAM MOVED TO RETAIN ITEM NO. 5 ON THE "LIST OF 13." THE MOTION WAS MOVED SECONDED BY MR. HIATT AND CARRIED UNANIMOUSLY.

Mr. Turnipseed and Mr. Hiatt engaged in a discussion regarding perennial yields and drawdowns. Mr. Hiatt said that a shortage would result if the basin continued to be drawn down. Mr. Turnipseed said USGS reports demonstrate how recharge and discharge are balanced, and that the discharge side is either evaporation off the Dry Lake Playa or is being taken up by greasewood. Mr. Hiatt said Nevada law was never formulated with the long-term effects of mine de-watering in Northern Nevada and questioned if the State Engineer's office had the tools needed to resolve future problems when no firm data existed that addressed projections. Mr. Turnipseed said there are two studies that examine the long-term impacts of mining, municipal, agriculture, and all public use in the middle Humboldt Basin.

Mr. Walker suggested that perennial yield determination and definition of perennial yield is beyond the scope of the TAC, because the committee was not looking at "macro" state water policy.

MR. WALKER MOVED TO ELIMINATE ITEM NO. 1 ON THE 'LIST OF 13.' THE MOTION WAS SECONDED BY MR. BINGHAM AND CARRIED UNANIMOUSLY.

Mr. Hiatt said Item No. 7 would be a revocation of the SNWA and District's rights, saying that if they cannot take out more than they put back in, they would have a net ability to withdraw zero. He said the TAC did not have the authority to revoke their rights. Mr. Walker said he interpreted Item No. 7 to mean that well pumping had to equal the recharge program pumping. He noted that SNWA pumped out 40,000 acre-feet of water annually and asked if that amount was recharged. Ms. Brothers said the pumping and recharge figures are not equal, but are getting closer.

MR. HIATT MOVED TO ELIMINATE ITEM NO. 7 ON THE "LIST OF 13." THE MOTION WAS SECONDED BY MR. WALKER AND CARRIED UNANIMOUSLY.

Ms. Brothers asked for clarification on Item No. 11. Mr. Hiatt explained that what Assemblyman Mortenson intended was when the full allocation of Colorado River water is exhausted then Nevada will increase the usage of groundwater which will result in further draw down of the aquifer. Mr. Walker said state statute would have to be changed in order to extract groundwater when the Colorado River water is depleted. Mr. Hamilton said Assemblyman Mortenson envisioned a precipitous drop in the aquifer because of pumpage of banked water and the environmental consequences of such. Ms. Brothers reassured the committee that SNWA does not intend to do that,

and reminded all that SNWA also depends on higher water levels.

Chairman Westergard pointed out that if banked water could never be withdrawn, it did not make economic sense to bank it initially.

MR. TURNIPSEED MOVED TO ELIMINATE ITEM NO. 11 ON THE “LIST OF 13.” THE MOTION WAS SECONDED BY MR. BINGHAM AND CARRIED UNANIMOUSLY.

Mr. Hiatt commented on Item No. 12 and questioned the ability of private utilities to qualify for grant funding when moved to the public sector. Mr. Turnipseed said state money could not be given to public utilities in grant moneys, and requested legal counsel to examine the constitutional provision. Mr. Walker said that implementing Item No. 12 would require modification of A.B. 408 for grant recipients and asked legal counsel to determine the constitutionality of modifying the bill.

MR. WALKER MOVED TO ELIMINATE ITEM NO. 12 ON THE “LIST OF 13.” THE MOTION WAS SECONDED BY MR. TURNIPSEED AND CARRIED UNANIMOUSLY.

Mr. Turnipseed said Items No. 9 and 2 were similar in the need for an effective method of notification to owners of domestic wells on temporary permits. He said the present system does not specify the costs to hook up and the cost would vary for each well owner. Mr. Hiatt suggested text included on the affidavit that said, “there are significant costs involved in hook up, contact the proper water authority to ascertain that figure within 30 days.” Ms. Brothers said the costs are different for each purveyor. Mr. Hamilton said there have been vigorous efforts to educate the public on the impermanence of their permits and wells, yet the majority of people are unaware that they could lose their well and what the cost to hook up is.

MR. BINGHAM MOVED TO RETAIN ITEM NO. 9 ON THE “LIST OF 13” FOR FURTHER DISCUSSION. THE MOTION WAS SECONDED BY MR. HAMILTON AND CARRIED UNANIMOUSLY.

Mr. Hamilton said the signed affidavit requirement prior to work on a well would cause a hardship on people who are unable to obtain all relevant well owner’s signatures. Mr. Turnipseed pointed out that he will send the affidavits prior to permit issuance on a community or quasi-municipal well, but a well driller has to gather signatures on a domestic well. Mr. Hamilton asked what would happen if a well owner was out of the country? Mr. Turnipseed explained that he was not issuing a new permit, and a replacement permit will be issued for a cancelled permit for the homes that existed prior to 1992. Mr. Hamilton asked what would happen if emergency work was required to recover an existing well and one of the owners was unavailable.

Bob Coache, Chief Engineer, Water Resources, Las Vegas, said redrills required notification of the property owner for permission. Mr. Hamilton said this was prospectively looked at as possibly being a problem, and the Nevada Well Owner’s Association wanted to know if due diligence could be performed under A.B. 408 without necessarily going as far as a signed affidavit for each application. Mr. Coache responded that it was unequivocal that a signed affidavit should be required by every property owner who drills or redrills a well. Water Resources needs documentation showing that the property owner knew that the well could be revoked through the well permit or that domestic use could cease when water was available and the well required repairs. Mr. Hamilton discussed how the law interprets proper service and when a party is legally served.

Mr. Bingham asked if a problem existed, and suggested making this issue less cumbersome.

Mr. Turnipseed explained community well owners say notification is devaluing their property by having to disclose to prospective buyers that the home is on a temporary well. Mr. Tretiak pointed out that A.B. 408 does not specify the method of notification; only that a type of notification exists and the provision to require an affidavit is overreaching. He said this is a narrow and prophylactic preventative measure to avoid a disaster for some well owners. Mr. Tretiak reminded members of the TAC that the concept of A.B. 408 was to protect the interest of 60,000 to 80,000 citizens who have spent \$150 to \$200 million on wells. He reported that members of the Nevada Well Owners’ Association were in full favor of proper notification, which included filing, but the emergency situation notification needed to be addressed. He said well drillers came forward with situations where a well fails because it needs to be serviced and a permit is required for maintenance activity. If the owner is unavailable then the well cannot be put back into

service. He asked that the State Engineer's Office to make some provision so that in emergencies, people would not be without service.

Mr. Bingham asked if the State Engineer has the authority under State Law to address emergencies on a case-by-case basis. Mr. Turnipseed affirmed and explained that an "Intent to Drill" card is simply filed. Mr. Coache added that in emergencies a waiver to eliminate the three-day wait can be requested and work to deepen a well can begin by 5 p.m. the same night.

Mr. Hamilton said the law needs to state what constitutes sufficient notification and what accomplishes notification. He said this did not seem like a big deal to simply define within the statute what notification was. He suggested that a registered letter be sent.

Mr. Bingham commented that the problem solved itself and he would not support the motion.

MR. HAMILTON MOVED TO RETAIN ITEM NO. 2 ON THE "LIST OF 13" FOR FURTHER DISCUSSION. THE MOTION WAS SECONDED BY MR. DICKSON AND WAS DEFEATED BY 7 NAYS TO 3 YEAS WITH DISSENTING VOTES FROM MEMBERS BINGHAM, HIATT, BROTHERS, HAFEN, WALKER, KONAKIS, AND TURNIPSEED.

MR. TURNIPSEED MOVED TO STRIKE ITEM NO. 2 ON THE "LIST OF 13." THE MOTION WAS SECONDED BY MR. WALKER AND CARRIED UNANIMOUSLY.

Mr. Hiatt referred to Item No. 4 and said present law states a dollar figure that is excessively small and needs to be addressed.

MR. HIATT MOVED TO RETAIN ITEM NO. 4 ON THE "LIST OF 13." THE MOTION WAS SECONDED BY MR. BINGHAM AND CARRIED UNANIMOUSLY.

Ms. Brothers referred to Item No. 6 and said criterion has already been established at an automatic 85 percent. Mr. Hamilton asked if this would always be the case, and what assurances do well owners have that in time the criteria will not drop to 60 percent or 30 percent? Ms. Brothers responded that this program is just beginning and advised that time is needed to monitor its effectiveness.

Mr. Turnipseed remembered the original bill said "up to 85 percent" but the statute said "not more than 85 percent." He read from A.B. 408 534.120, Section 4, C: "The holder of the permit will be offered financial assistance to pay not more than 85 percent as determined by the entity providing the financial assistance." Mr. Hamilton pointed out that one percent is not more than 85 percent and the language was still the same.

MR. BINGHAM MOVED TO RETAIN ITEM NO. 6 ON THE "LIST OF 13" FOR FURTHER DISCUSSION. THE MOTION WAS SECONDED BY MR. TURNIPSEED AND CARRIED UNANIMOUSLY.

Mr. Tretiak suggested that an Ombudsman would be an effective means of assistance to the State Engineer. He explained that because of the severity of water problems and issues needing the State Engineer's attention, an Ombudsman would serve as a lightning rod to field calls from well owners. Mr. Turnipseed agreed and said he fields 200 inquiries per day and the primary role of the State Engineer's Office is public service. He said that Mr. Coache's office could handle most of the inquiries from the southern half of the state, and the staff in Carson City could handle most of the northern half of the state, unless it was a technical issue such as dam safety.

Mr. Bingham said this may be needed in the future depending on the responses to A.B. 408 and the lifting of the sunset provision, but it did not appear to be a current problem.

MR. BINGHAM MOVED TO ELIMINATE ITEM NO. 8 ON THE "LIST OF 13." THE MOTION WAS SECONDED BY MR. WALKER AND CARRIED UNANIMOUSLY.

SELECTION OF PROCEDURE AND STRATEGIES FOR ADDRESSING ISSUES SELECTED BY THE

TAC

Chairman Westergard led the TAC in a discussion involving a revised list of issues for consideration (Exhibit E):

- The education issue, Item No. 4, was assigned to Mr. Turnipseed and Mr. Walker. Mr. Turnipseed suggested a statewide publication.

Mr. Walker said he would provide a mailing list with 10,000 domestic well owners in Washoe County and would ask the County for financial assistance to cover mailing costs. He asked for assistance in collecting a comprehensive mailing list from the rural areas from Bjorn Selinder, Churchill County Manger, Fallon, Nevada, and Ferron Konakis, Elko City Engineer, Elko, Nevada.

Chairman Westergard asked Mr. Walker and Mr. Turnipseed for a draft proposal of the education plan. Mr. Walker said he would submit a proposal to Ms. Brothers and Mr. Turnipseed for comments before presentation at the next meeting of the TAC.

- The quality versus quantity issue, Item No. 3, was assigned to Linda Eissmann, Senior Research Analyst, LCB, and Chairman Westergard who would review the earlier testimony from the DEP, Bureau of Health, and Water Resources, to identify the issues for further discussion by the TAC.

Mr. Hamilton reminded the TAC that there is health regulation that states a well could not be drilled within 600 feet of a water source. He said the water law now states that a well cannot be drilled within 180 feet of a water source. This issue needs attention because both the health regulation and the water law are “on the books.” Mr. Turnipseed responded that years ago, domestic well permit requests were based on economics, and 600 feet was the “break-even point” of whether to drill the well or extend the line. The increased hook-up fees eliminated this issue. The compromise was 180 feet for an existing well and 360 feet for a new well, which became statute in the 1999 Legislative Session. He said the 600 feet issue was based on economics and was never in statute.

Mr. Bingham said the health statutes contain the 600-foot rule, and in the event of an emergency, the health officer would stop a well from being drilled, but this was not in any statute directly related to the State Engineer.

Mr. Walker suggested that the individual one-acre septic system and well is a statewide issue and asked if this was encroaching upon the land use planning issues in NRS 278. He further suggested that knowing the water quality of domestic wells is not a private issue, but vital to the public health issue.

Mr. Hamilton asked if there was a reason why the Water Resources would not want that data in some malleable form for data processing and site specific studies on where the water is acceptable or not? Mr. Turnipseed said Washoe and Carson Valleys have nitrate problems on the one side of their valleys and none on the other. He said that from a hydrologist standpoint it was easy to predict the behavior of septic tanks in certain areas of Douglas and Washoe Counties due to recharge. He said it was more difficult to predict in other parts of the state. Mr. Walker said it was a “delusion factor.”

The domestic wells issue was separated into four separate sub items for discussion and assignment:

1. Item No. 1.a.: Chairman Westergard asked Mr. Turnipseed about the relevancy of this issue. Mr. Turnipseed said this issue pales in comparison to the other issues.

Ms. Brothers said the Groundwater Management Program is outfitting up to six wells with real-time data collection to be posted on the Internet. She said that data will indicate the pumpages and stresses over time and this data can educate the public in Las Vegas Valley.

Mr. Walker said Washoe County domestic well representatives consistently raise this issue whenever Sierra Pacific Power, for example, transfers water rights to a new well to be pumped harder. The problem was solved once to address a protest by proving that the water source for domestic well users came from Lincoln County. Washoe County requires notification of every domestic well owner within a quarter mile of a new municipal well, but this does not apply to Clark County.

Mr. Hiatt said that this could be an important issue in the Humboldt Basin in the future, where a quarter mile notification would be “essentially worthless.” He suggested that this item be incorporated with the education issue. Mr. Turnipseed asked Mr. Walker to include the Cooperative Extension’s Best Management Practice of periodic pumping of septic tanks in his education proposal.

MR. HIATT MOVED THAT ITEM NO. 1.A. ON THE “LIST OF 4” BE INCLUDED WITH THE EDUCATION ITEM NO. 4 ON THE “LIST OF 4.” THE MOTION WAS SECONDED BY MR. TURNIPSEED AND CARRIED UNANIMOUSLY.

2. Item No. 1.c.: Mr. Turnipseed said the protectible interest law seems discriminatory. Chairman Westergard asked for this issue to be a separate agenda item for open discussion, including public comment, at the next meeting of the TAC. Mr. Turnipseed suggested inviting a representative from a county where protectible interest is implemented. Mr. Walker said he would bring Washoe County policies to the next TAC.

Chairman Westergard assigned Item No. 1.c. to Mr. Turnipseed, Mr. Walker, and Mr. Hamilton to gather information for discussion at the next meeting of the TAC. He also asked for an examination and briefing of the legislative history on NRS 533.024 by LCB Legal Counsel.

3. Item No. 1.b.: Mr. Walker said professional analysis is needed of the Las Vegas Valley temporary well issue to determine if there is an economic benefit by recharging the aquifer versus hooking up to municipal wells. Ms. Brothers said SNWA is not committing its resources to recharge because of the temporary nature of the permit, a domestic well does not have a water right, and the quasi municipal well is a temporary water right in most cases. Mr. Walker suggested eliminating Item No. 1.b. and pointed out the practice of having water in a pipe, dumping it into the ground, and then pumping it into another pipe is impractical. He said this only made sense in the case of an expensive hook-up fee.

Mr. Hiatt said this is a complicated issue because the answers vary from basin-to-basin and would depend on who owned the water that could be used for recharge. He said a statewide general statement would be inappropriate and a basin-by-basin discussion and determination would be necessary.

Mr. Walker said a statement could be made which recommends that in the future a groundwater replenishment district for domestic wells might become necessary on an individual basis. The TAC could either recognize that in the future this could become an issue, or eliminate it.

MR. WALKER MOVED TO REPORT TO THE SUBCOMMITTEE THAT ITEM NO. 1.B. ON THE “LIST OF 4” IS AN ISSUE FOR FUTURE CONSIDERATION ON A BASIN-BY-BASIN CASE. THE MOTION WAS SECONDED BY MR. SELINDER AND CARRIED UNANIMOUSLY.

Mr. Hamilton stated in the discussion of the motion that Items No. 1.b. and 2.b. were interlinked in areas where a recharge program exists the idea is to bank water and to preserve the aquifer against future need. He wanted the use of resources examined. He said the aquifer levels need to be maintained and then people need to be disconnected because they do not have a permanent right.

4. Item No. 1.d.: Mr. Hamilton said that unless there is some supervision and enforcement on domestic wells, the maximum daily limit of what can be pumped is almost moot regardless of what the statute says. He said it is difficult to know how much is being pumped from a domestic well unless they are already engaging in egregious waste. Mr. Turnipseed agreed that Mr. Hamilton’s remarks were applicable statewide, but in an urban setting, large estate lots, there are probably individuals who use the full 1,800 gallons per day allotment if not more. Mr. Turnipseed said that in a basin that is over appropriated but not over pumped, the developer will be strongly encouraged to commit to 1,800 gallons of water per day for each new domestic well lot created. On a parcel map that means the developer will retire an existing water right for every new parcel created in order to keep it in balance. This is how to get the natural recharge back in balance with the water rights on paper.

Mr. Hamilton said that it has been inferred that individuals pump water to waste in order to preserve a water right. He said this was a reaction to current state water policy. Mr. Hiatt said a domestic well has no requirement. Mr. Hamilton said not the municipal well either.

Mr. Turnipseed said the “use it or lose it” policy was changed by the 1995 Legislature and now a letter is sent after the fourth year of nonuse giving owners a deadline of one year to file an extension to prevent the forfeiture or resume use of the water. Mr. Turnipseed said farmers are growing crops instead of dumping the water, but the economical feasibility would have to be considered. He said the problem is greater in smaller basins.

Mr. Walker and Mr. Turnipseed both agreed that dumping water to retain the water rights is practiced but economic realities would ultimately force the farmer or well owner out of business.

MR. HAMILTON MOVED TO TABLE ITEM NO.1.D. ON THE “LIST OF FOUR” UNTIL MR. HAFEN WAS PRESENT. THE MOTION WAS SECONDED BY MR. WALKER AND CARRIED UNANIMOUSLY.

Chairman Westergard said that additional general discussion by TAC members on the unassigned issues was needed before recommendations could be formulated.

PUBLIC COMMENT

Randy Pahl

Randy Pahl, Engineer/Hydrologist, Department of Conservation and Natural Resources, Nevada Division of Water Planning (Water Planning), Carson City, commented on an earlier discussion on water quality data saying the Water Planning is non regulatory and required by statutes to examine water quality and quantity.

Mr. Pahl said that in 1990, Water Planning began looking at statewide water quality and trends, but groundwater data was difficult to find because the State only collected surface water data. The groundwater data was going to the State Health Lab and stored in spreadsheet format. Water Planning designed a database capable of retrieving data through queries based on township, range, and section. The State Health Lab is no longer using this database. In the mid 1990s, a MOU between Water Planning and the State Health Lab was created for planners, consultants, and political agencies to have access to the data. Since then, the State Health Lab has switched to a new system of data collection and the need for better data management and availability. Water Planning is constantly asked for data that is not available.

Mr. Pahl concluded his remarks saying the confidentiality issue has never been raised but Water Planning and the State Health Lab will address it as they continue to work together to make data more available, develop strategies, and implement recommendations in the State Water Plan.

Robert Tretiak

Mr. Tretiak, previously identified on page 14 of these minutes, agreed with Ms. Brothers that the Law of the River needed revision, and asked her for an audit of funds generated from hook-up fees. He said he did not receive any satisfactory response from the SNWA.

Mr. Tretiak said the water rights of the 500,000 new Las Vegas Valley residents are in jeopardy. He urged the TAC to address the Doctrine of Prior Appropriation with regard to Nevada’s new citizens within the last ten years.

He continued, saying the Wellhead Protection Plan speaks about drinking water preservation, but pointed out that the inconsistency with protecting the aquifer for drinking water and utilizing it instead as an auxiliary reservoir in the banking program. He said the use of auxiliary water versus drinking water is contradictory and suggested that the TAC reevaluate this plan.

Mr. Tretiak concluded by urging TAC to examine A.B. 408 through a paradigm of what needs to be done in order for it to be effective on a permanent basis. If 180 feet is not right, it should be changed. If 85 percent or up to 85 percent is not right, it should be changed. And lastly, he asked what could be done to protect the investment of the 60,000 to 80,000 well owners in Las Vegas Valley.

FUTURE MEETING SCHEDULE

The fourth and fifth meetings of the Technical Advisory Committee to the Subcommittee to Study Domestic and Municipal Water Wells will be held on Monday, April 24, 2000, at 10 a.m., in Rooms 4412 B and C, and on Thursday, May 25, 2000, at 10 a.m., in the Grant Sawyer State Office Building, Room 4412 B and C, 555 East Washington Avenue, Las Vegas, Nevada.

ADJOURNMENT

There being no further business, the meeting was adjourned at 2:29 p.m. Exhibit F is the "Attendance Record" for the meeting.

Respectfully submitted,

Sally Kennedy
Senior Research Secretary

Linda Eissmann
Senior Research Analyst

APPROVED BY:

Roland Westergard, Chairman

Date: _____

LIST OF EXHIBITS

Exhibit A is a 29-page dual sided document updated on March 1998, titled "State of Nevada Comprehensive State Groundwater Protection Program Profile," submitted by Tom Porta, Bureau Chief, Bureau of Water Quality Planning, Department of Conservation and Natural Resources, Division of Environmental Protection for the State of Nevada, Carson City, Nevada.

Exhibit B is a one-page document dated March 20, 2000, titled "Domestic and Municipal Water Wells Technical Advisory Committee," presented by Jon Palm, Manager, Public Health Engineering, Bureau of Health Protection Services, Nevada State Health Division, Carson City, Nevada.

Exhibit C is an 18-page paper copy of a slide presentation titled "Southern Nevada Water Authority, 1999 Water Resource Plan," presented by Kay Brothers, Director, SNWA, Las Vegas, Nevada.

Exhibit D is a one-page undated document titled "Additional Issues for Consideration by the Technical Advisory Committee," submitted by Linda Eissmann, Senior Research Analyst, Research Division, Legislative Counsel Bureau, Carson City, Nevada.

Exhibit E is a three-page undated document titled "Revised Issues for Consideration," submitted by Linda Eissmann, Senior Research Analyst, Research Division, Legislative Counsel Bureau, Carson City, Nevada.

Exhibit F is the "Attendance Record" for the meeting.

Copies of the materials distributed in the meeting are on file in the Research Library of the Legislative Counsel

Bureau, Carson City, Nevada. You may contact the Research Library at (775) 684-6827.