

**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*)
January 12, 2000
Las Vegas, Nevada**

The first meeting of the Technical Advisory Committee to the Subcommittee to Study Domestic and Municipal Water Wells (A.B. 408) was held on Wednesday, January 12, 2000, at 9:30 a.m., in Room 4412B of the Grant Sawyer State Office Building, 555 East Washington Avenue, Las Vegas, Nevada. Page 2 of these minutes contain the AMeeting Notice and Agenda.@

TECHNICAL ADVISORY COMMITTEE MEMBERS PRESENT:

Roland Westergard, Carson City, Chairman
Jay Bingham, Las Vegas
Kay Brothers, Las Vegas
Paula Brown, North 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:

Mark Russell, Las Vegas

LEGISLATIVE COUNSEL BUREAU STAFF PRESENT:

Linda Eissmann, Senior Research Analyst
Kimberly Marsh Guinasso, Principal Deputy Legislative Counsel
Debby Richards, Manager of Office Services, Research Division

MEETING NOTICE AND AGENDA

Name of Organization: Technical Advisory Committee to the Subcommittee to
Study Domestic and Municipal Water Wells
(Assembly Bill 408, Chapter 636, *Statutes of Nevada 1999*)

Date and Time of Meeting: Wednesday, January 12, 2000
9:30 a.m.

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

AGENDA

1. Opening Remarks and Introductions
Roland Westergard, Chairman

- II. Authority of the Technical Advisory Committee/Review of Assembly Bill 408
Linda Eissmann, Senior Research Analyst, Legislative Counsel Bureau

- III. Report on Implementation of Measures Enacted in 1999
(Assembly Bills 237, 347, and 408)
R. Michael Turnipseed, State Engineer, Division of Water Resources
Julie Wilcox, Director of Public Services, Southern Nevada Water Authority

- IV. Identification of Issues to be Addressed and Role of the Technical Advisory Committee
Discussion by the Technical Advisory Committee

- V. Future Meeting Schedule

- VI. Public Comment

- VII. Adjournment

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 401 South Carson Street, Carson City, Nevada 89701-4747, or call Kennedy, at (775) 684-6481, 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, Chairman, introduced members of the Technical Advisory Committee (TAC) and staff of the Legislative Counsel Bureau (LCB).

Technical Advisory Committee member Mark Russell, Las Vegas, was not present.

Mr. Westergard stated the purpose of the TAC is to submit a report to the Legislative Subcommittee to Study Domestic and Municipal Water Wells. The report is due July 1, 2000, and is dependant upon the number of assignments given to the TAC. The Subcommittee=s report deadline is fall or early winter of 2000. Mr. Westergard suggested the purpose of the meeting be an information gathering session in order to establish background, and to determined the expectations of the TAC. He called upon Ms. Eissmann to share her ideas of the issues needing to be addressed by the TAC.

AUTHORITY OF THE TECHNICAL ADVISORY COMMITTEE/ REVIEW OF ASSEMBLY BILL 408

Linda Eissmann

Linda Eissmann, Senior Research Analyst, LCB, introduced Kimberly Guinasso, Principal Deputy Legislative Counsel, LCB, who is also legal staff for the Nevada Legislature=s Committee on Public Lands. She explained that Ms. Guinasso=s presence at this meeting would be intermittent due to multiple obligations.

Ms. Eissmann directed the Committee=s attention to a packet of information containing:

§ A two-page document which summarized three Assembly Bills enacted by the 1999 Legislature as they pertain to

water wells (Exhibit A).

§ A document titled A Most Significant Actions Taken By The 1999 Legislature Relating to Water Wells@ (Exhibit B).

§ A revised telephone and address list for members of the Domestic and Municipal Water Wells Technical Advisory Committee (Exhibit C).

She offered her assistance in providing copies of any bills or bill summaries to Committee members.

Ms. Eissmann introduced three pieces of legislation, and explained how each is relevant to the TAC:

§ Assembly Bill 408 (Chapter 636, *Statutes of Nevada 1999*) was the enabling Legislation that established the Subcommittee to Study Domestic and Municipal Water Wells, and also established the TAC. A clarification of the three types of committees involved in this issue include:

- 11 The Legislative Committee on Public Lands, Senator Dean A. Rhoads, Chairman, meets every interim and was directed by A.B. 408 to study domestic and municipal water wells.
- 12 The Subcommittee to Study Domestic and Municipal Water Wells was created by A.B. 408 and is chaired by Senator Dean A. Rhoads, Chairman.
1. The Technical Advisory Committee was also created by A.B. 408 and Roland Westergard, Chairman, was appointed by Senator Dean A. Rhoads.

The TAC reports to the Subcommittee which reports to the Legislative Committee on Public Lands.

1. Specify in statute conditions under which the State Engineer can revoke a temporary well permit, or deny the deepening or repair of a domestic well, thereby requiring the well owner to connect with a municipal water supply.
1. Require the State Engineer to notify the county recorder when a temporary permit is approved, and when a new domestic well is drilled after October 1, 1999.
1. Direct the Legislative Committee on Public Lands to appoint the Subcommittee to conduct a study of residential, municipal, and quasi-municipal wells statewide. Assembly Bill 408 also directed the Subcommittee to appoint the TAC with representation from urban and rural areas, well owners, suppliers of municipal water, holders of water rights, and ratepayers.

§ Assembly Bill 237 (Chapter 456, *Statutes of Nevada 1999*) expands the types of activities that are eligible for state grant program funds for assisting public water systems. New activities covered in the grant program include grants to assist well owners, in designated water basins, with connection costs to municipal water systems. This grant is limited to wells drilled on or before October 1, 1999.

§ Assembly Bill 347 (Chapter 468, *Statutes of Nevada 1999*) authorizes the SNWA to establish a deferred payment program to assist property owners in paying the cost of abandoning their wells and connecting to public water systems. This money has to be repaid by the property owner upon sale or transfer of the real property. Failure to pay will result in a lien on the property. The bill also authorizes the SNWA to operate a project for recharge, or underground storage of water, for the benefit of well owners in the Las Vegas Valley ground water basin.

Also included in the packet was a list of goals suggested by the Subcommittee at its last meeting. The four suggested goals for the TAC are to:

- \$ Specifically identify issues relating to wells, for example, to identify both current and future problems.
- \$ Make recommendations to address these issues and problems.
- \$ Review in detail the recent legislation of those three bills passed concerning domestic water wells, and suggest any new language or legislation that should be introduced in the next legislative session.
- \$ Develop credible statistics on the number of domestic wells in the state and the number of temporary permits issued in Clark County.

The Subcommittee on Domestic Water Wells will meet again on January 28, 2000, to review progress notes and the goals of the TAC.

Ms. Eissmann deferred questions on the issues of restrictions and revoked licenses to the presentation by the State Engineer later in the meeting. She also defined the study as being applicable to all of Nevada, but the issues before the TAC were most pertinent to southern Nevada due to the existence of temporary well permits only in Las Vegas.

Jay Bingham, Juliet Corporation, Las Vegas, questioned the permanent water right application process for rural Northern Nevada homeowners. R. Michael Turnipseed, State Engineer, responded with the following conditions:

- \$ No permit is required if it is a single family domestic well. A single family domestic well, defined by statute, is water to provide a single family, lawn, garden, and domestic animals.
- \$ An application and permit fee would be required for all other uses in the state of Nevada, for example, stock water.

Ms. Eissmann pointed out that many of the Committee=s questions are addressed in the minutes of the Subcommittee=s meeting of October 21, 1999, and offered copies to anyone wanting them.

REPORT ON IMPLEMENTATION OF MEASURES ENACTED IN 1999 **(ASSEMBLY BILLS 237, 347, AND 408)**

R. Michael Turnipseed

R. Michael Turnipseed, State Engineer, Division of Water Resources, Carson City, presented an overview of water issues and historical background, which included a brief history of the groundwater law in Nevada, statewide water issues, Las Vegas Valley concerns, and additional duties of the State Engineer.

Mr. Turnipseed gave the following background in his explanation of the history of Nevada groundwater law:

- \$ The State Engineer=s office was created in 1903.
- \$ In 1905, the Legislature adopted surface water appropriation procedures.
- \$ By 1913, the Legislature revoked existing laws and wrote a new comprehensive law on how to appropriate water, including how to adjudicate prestatutory water rights.
- \$ In 1913, legislation granted jurisdiction over groundwater, but it was limited to artesian water.
- \$ In 1939, the comprehensive groundwater law gave the Division of Water Resources exclusive jurisdiction over all groundwater use except the single family domestic well. The Legislature acknowledged a right to property owners who met local conditions entitling them to drill a domestic well.
- \$ In 1987, the definition for artesian well was put into statute. It is now defined as the water level in the well

which exists at an elevation higher than where it was first encountered. Artesian well water is under pressure. In most of the basins in the West there are lake bottom sediments of clays and silts which form a confining layer. Water percolates off the mountains through the fractures and becomes trapped when it reaches a water table that is under pressure. The water cannot move upward because of clay and silt seals. Penetration of these clays and silts results in the water level rising higher in the well than where it was initially encountered.

\$ Nevada's domestic well exemption is limited to 1,800 gallons per day. In comparison, the Idaho domestic well exemption is 13,000 gallons per day, which can irrigate five acres. This illustrates the difference in the amount of water between Idaho and Nevada.

\$ Since 1939, the groundwater law has not been changed much. It is one of the most comprehensive groundwater laws in the west, yet the most flexible. It has served the state very well.

Mr. Turnipseed continued his discussion of statewide water issues explaining Nevada's groundwater law grants the State Engineer the ability to designate basins needing additional administration. He reported the statewide water basin conditions:

\$ There are 230 groundwater basins statewide.

\$ The designation of groundwater basins is dependent upon need.

\$ Most of the groundwater basins in highly populated areas are designed as either fully developed, or over drafted in some cases like Las Vegas. Most of them are in good condition.

\$ There are approximately a dozen over-appropriated groundwater basins and half as many which are over pumped. Four problem areas include:

1. Some of the small valleys north of Reno, are not only over appropriated by permit, but are over pumped by permits and domestic wells.
2. The domestic wells in Lemon Valley (located north of Reno at the site of the former Stead Air Force Base) must be deepened two and three times, creating a race to the bottom of the water table. It is a small groundwater basin in the rain shadow of the Sierra Mountains, without much recharge. Annual precipitation is eight inches in a year and tends to fall at once.
3. Diamond Valley is over appropriated and over pumped by permits. It is a large irrigation valley. The rate of decline is lessening due to: (1) conservation measures; (2) cancellation of permits; and (3) permit forfeiture .

Diamond Valley utilizes the Conservation Reserve Program. Many farmers put their land out of production in order to receive government reimbursements. The farm owners then file extensions to prevent the forfeiture of water rights.

4. Smith and Mason Valleys, in the north, report drastic declines in water levels at the end of the 7 -year drought. Smith, Mason, and Carson Valleys are pumped largely to supplement surface water. They may use water directly from the Carson or Walker Rivers, until the water diminishes to the point of having to resort to turning on their ground wells and pumping water. The drought ended and now annual water level measurements are recorded in Smith and Mason Valley. Pumpage inventories are conducted in Carson Valley. The results show some water levels have returned, as evidenced by wells flowing out of the top for the first time since drilling.

Mr. Turnipseed summarized that the state's groundwater is in good condition. He noted only half a dozen basins are critical with over pumpage conditions and declining water levels. He pointed out that one of those critical basins is

located in Las Vegas.

Mr. Turnipseed continued his presentation with a brief history of water issues directly affecting the Las Vegas Valley. He noted the following:

- \$ The first wells were drilled in Las Vegas Valley after the turn of the century between 1905 and 1908. Those wells were large producing artesian wells which flowed out of the top of the casing. They were drilled to supplement the Las Vegas springs which were being used for municipal use, railroad use, and some irrigation.
- \$ In 1941, the State Engineer designated the Las Vegas basin as the central portion of where the majority of the well drilling activity was occurring. Certain restrictions were placed on the basin while the State Engineer tried to convince the Legislature to approve temporary well permits. Nevada has a Colorado River allocation, but at that time, there was not any way to get the water into the valley. The BMI Pipeline was considered small when compared to the Southern Nevada Water System as it exists today, or as it will exist after the completion of the latest expansion.
- \$ In 1971, the Las Vegas Valley Water District built facilities to bring the first Colorado River water into the basin for municipal use. The BMI Pipeline is for industrial use.
- \$ In 1955, the Legislature allowed the State Engineer's Office to issue temporary permits for the purpose of revoking these same permits when the Colorado River water became available. The Legislature had received reports of drastic declines in water levels partly due to the cessation of water flowing from the artesian wells and the Las Vegas Spring. Various studies showed that the natural recharge for the basin was approximately 35,000 acre-feet per year. Appropriated water exceeded this figure, not counting the domestic wells prior to 1941 and 1955.
- \$ Beginning in 1955, the State Engineer's Office issued revokable permits with the intent of Aweaning@ the valley off groundwater by forcing the new and existing development onto Colorado River water. Curtis Park Manor, a 246 home neighborhood, challenged the revokable permits and lost before the Supreme Court twice. This caused the law to be in limbo for 10 years before it was upheld as constitutional. The issuance of temporary permits continued to accommodate a period of growth.
- \$ From 1955 until 1992 there were approximately 109,000 feet of water rights revoked, which forced water use onto Colorado River water supply.
- \$ As the number of users coming on to the system increased, more new temporary permits were issued due to a 300,000 acre-foot allocation out of the Colorado River. Las Vegas Valley Water District, Henderson, and Las Vegas were expanding their boundaries at that time which meant that more permits were being revoked than granted by the State.

Responding to questions from Mr. Bingham, Mr. Turnipseed explained that an example of a revokable permit is one issued after 1955, which was determined by the location of a waterline in proximity to a home. These properties were sent a notice of possible revocation. In some cases, it looked like the wells were close enough to hook on, but perhaps there was some obstacle, like a freeway, that would prevent a simple hook up. Quasi-municipal wells are those which serve multiple homes, from four up to twelve. Revocation of a quasi-municipal well forced those multiple homes off the well and onto the Colorado River water. This notice of revocation was mandatory unless they could justify exemption. If not, the permit was revoked. He clarified that irrigation permits are not being revoked, since none have been issued in Las Vegas Valley since about 1941.

Mr. Turnipseed and Committee members engaged in a brief discussion of the term AQuasi-Municipal@. Steve Walker, Water Management Planner, Washoe County Water Resources, Reno, Nevada, asked for the statutory definition of quasi-municipal.

Mr. Turnipseed explained that a true municipal well has a service area boundary, and is covered by a municipal permit. A Municipality@ is an umbrella term for commercial, industrial, fire protection, and municipal uses such as the district, cities, and utility companies. He explained that the quasi-municipal use is defined as many homes to one fire station, or one 7-Eleven Food Store on the corner, et cetera. It is a very definite number as far as the use goes much like an irrigation well that serves a definite number of acres, or a stock water well that serves a definite number of cows or sheep.

Mr. Turnipseed continued his presentation of Las Vegas Valley with the following historical points:

§ In 1989, the Las Vegas Valley Water District decided that it had committed all of its Colorado River water. As it turned out, they had not. They also contracted for the excess BMI water and the excess Mojave Generating Station water. They acquired some additional Colorado River water and they are issuing A will serve@ letters on that water today.

§ In 1992, the municipalities within the SNWA formed together to share surpluses and shortages, and an order was issued to close the basin to any new temporary permits with the following exceptions:

1. A small commercial business, like a 7-Eleven Food Store, uses less water than a domestic well.
2. The unknown well status or ownership in small housing developments. This is the result of a fairly unique process to the Las Vegas Valley:
 - a. A developer or builder completes the process to obtain a permit for multiple homes.
 - 11 The permit is granted giving the builder five years to file proof of completion of work, or two years to file proof of completion of work and five years to file a proof of beneficial use.
 - 12 All the homes are either built and sold, or the lots are sold to a developer with the wells in place.
 - 13 The State sends the original builder a filing in two or five years. If the original builder does not respond, the State does not know who the new owner is.
 - 14 Statute requires the permit to be canceled because the status of the well, ownership, and if it was ever drilled, is unknown.
3. People who had already built a home, prior to 1992, could refile for a permit and it would be granted. A fair amount of those permits were canceled by the permit owners because they no longer had an interest in the property.
4. Individuals who already had their subdivision plots drawn, and had begun the process with the county, basically Agot the rug jerked out from under them@ with these revocations. So they were allowed to finish that process. This process is finished and is no longer considered on ongoing exception.

§ Permit revocations continued after 1992 until the 1999 Session of the Legislature. Then, a moratorium was placed on the State Engineer revoking any more permits. This past session of the Legislature (1999) it was determined that no more permits can be revoked for the next five years unless the three criteria are met: (1) the water line is within 180 feet for an existing well; (2) a financial package is available; and (3) the well failed. Usually it fails because the water level drops below the casing, causing the well to go dry.

§ There are about 14,008 acre-feet of water in revokable permits left. Total pumpage in the valley today is still about twice of what the natural recharge is. This does not include the recharge program begun in 1989 by the SNWA. This program takes Colorado River water during off peak times and puts it into ground.

§ Permits in the Fallon area of the Churchill Valley (in Churchill County, Nevada), are under consideration for

revocation because of high arsenic levels. The United States Environmental Protection Agency (EPA) recently ordered the City of Fallon to come into compliance with arsenic standards or suffer a fine. The outlying areas of Fallon rely primarily on shallow water, because they are in the middle of a large irrigation district comprising approximately 70,000 acres.

Mr. Turnipseed concluded his presentation by listing the additional duties of the State Engineer. In addition to administering Nevada's water law and licensing well drillers, the State Engineer's office develops water well standards. The current water well standard calls for a 50 foot seal outside of the well casing to prevent any herbicides, pesticides, or surface water runoff. This runoff must be prevented from getting into the water table and polluting the well.

Mr. Turnipseed added that the legislature is fairly protective of the water law including both surface and groundwater laws. There has been considerable hesitation when modifications are suggested, because it has worked so well up to this point. The few places in Nevada where the water law has been modified in the past 15 years have suffered more misuse than what the modification was originally intended to improve.

Mr. Westergard asked for any questions raised by Mr. Turnipseed's presentation. The following discussion ensued:

Mr. Walker responded that domestic wells are sometimes used as a water management tool. Each hydrographic water basin in Washoe County has been analyzed separately, resulting in the creation of a domestic well required water scale. This scale allows the use of domestic wells as a basic water management tool at the local government level.

Bruce Hamilton, Nevada Well Owners' Association, Las Vegas, questioned Mr. Walker regarding the maintenance and levels of water tables in various basins, and if there was any proof of effectiveness when using domestic wells as a water management tool. Mr. Hamilton also inquired as to how it was received in terms of frictionary resistance from the people who want to appropriate that water.

Mr. Walker explained that the tools have basically been in place since the early 1990s in the areas where there is increasing domestic well growth. It is unknown, but assumed that it will, have a positive effect on the resource. Mr. Walker said minimal controversy has been generated, but it is a program approved by elected officials. It was implemented for that reason and because it made sense.

Mr. Hamilton speculated that there may be some controversy from potential users based on the user's inability to access water initially, or on the high barriers the user must initially cross to access water. 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. Mr. Walker agreed that this was a fair assessment.

Mr. Turnipseed offered an explanation of how the relinquishment dedication policy came about. In 1971, the Legislature granted the State Engineer authority over municipal type subdivisions served by municipal or domestic wells. The Legislature did not give the State Engineer authority over land divisions by parcel map or large land divisions. The local District Water Authority made recommendations in counties where a new water right could not be approved. The county could accept a recommendation for an accessible relinquishment program or reject the recommendation.

Mr. Hafen asked for clarification of permits. Does a land owner in the state, other than in Las Vegas Valley, have the right to drill a domestic well without permission from anyone? He said he was of the assumption that a landowner did not need permission to drill a well. Mr. Turnipseed affirmed his assumption. Mr. Hamilton pointed out that the owner of a domestic well drilled in any county with populations below 400,000, has a protectible right to that well, which enables him to defend his access to water. However, in Las Vegas, a well owner does not have a protectible property right to that well. As a result, Clark County residents are not able to use any defenses. A well can be drilled anytime in Clark County provided local criteria are met, but the water district can come by and request hook up to a water line.

Mr. Turnipseed offered further explanation of the laws applicable to both Clark County and in Las Vegas. He noted that the drilling company must give a Astart card@ 48 hours prior to drilling. The Water Authority will review the request, and decide whether or not to let him drill. Permission is not granted if the well is near a water line.

Mr. Hafen asked for clarification on how the State Engineer can revoke a temporary well permit. Mr. Turnipseed explained that the well owner could be denied the right to re-drill. Mr. Hamilton said that there is no need to revoke a permit where none exists.

Mr. Hafen noted that in the counties using the practice of land division, many have adopted ordinances requiring the water right to be attached to new parcel creations. In most counties, this process requires a new water right purchased at a predetermined price. An existing parcel is exempt from this process. Mr. Hafen further pointed out that it appeared to him that in Las Vegas, a well permit could be revoked where a permit never existed.

Mr. Westergard suggested that the committee listen to the presentation from the SNWA before returning to those questions. He introduced Julie Wilcox, Director of Public Services for the SNWA.

REPORT ON IMPLEMENTATION OF MEASURES ENACTED IN 1999 CONTINUED **(ASSEMBLY BILLS 237, 347, AND 408)**

Julie Wilcox

Julie Wilcox, Director of Public Services, Southern Nevada Water Authority (SNWA) drew the committee=s attention to the fact that the SNWA appointed a citizens committee to make recommendations. She noted considerable progress had been made, but more work is still needed.

Ms. Wilcox introduced two other representatives of the SNWA and their role in the meeting:

§ Michael Goff would provide a slide show about the groundwater basin and answer questions on the condition of the basin from a hydrologic standpoint.

§ Chris Weiss would update the TAC on the administrative process of enacting recently passed provisions during the last legislative session.

Michael Goff

Michael Goff, Hydrologist Technical Lead, SNWA, offered a comprehensive look at historical and current water use in Las Vegas (Exhibit D). He made the following comments:

§ Prior to 1941, Las Vegas Valley=s prime source of water was groundwater. In the early 1970s, use of Colorado River water offered a stabilization in groundwater use. The groundwater is still considered an important supply, and is crucial to the overall water picture of the municipalities, domestic, and private well owners of the valley.

Mr. Bingham asked what the allocation for groundwater in the Las Vegas Valley was. Mr. Turnipseed answered they were presently pumping 72,000 and recharging 35,000 to 50,000 acre-feet.

§ Groundwater flow is from the northwest to the southeast, discharging through the Las Vegas Wash and into Lake Mead. The surrounding mountains offer water which infiltrates and becomes part of the groundwater resource channel. The recharge could also come from the Mt. Charleston/Spring Mountains area.

Mr. Goff explained that major control for how groundwater flows in the Las Vegas Basin is the manner in which sediments were deposited in the Las Vegas Valley. Sediments filled in the valley with coarser materials being deposited around the fringes of the valley and finer materials filling in the central part of the valley and finer materials being deposited in the central parts of the valley. In the northwest valley, there are many privately owned wells in the finer grain sediments, and the combination of concentrated pumpage and poorly yielding aquifer materials has resulted in declining water levels and wells going dry in that area. The fine-grained sediments in the shallow subsurface provide protection from contamination to the drinking water aquifers over much of the valley.

Groundwater levels are closer to land surface as the topography drops off until they intersect with the Las Vegas Wash. A minor amount of groundwater flow to the Las Vegas Wash may also result from fracture flows from deeper aquifers. While fractures provide a conduit for flow along them, they often create a barrier to flow across them. In the southeast areas of the valley, rising water levels are a result of fine grained sediments in the shallow subsurface and landscape irrigation in the central areas of the valley.

Natural groundwater recharge has been estimated from about 30,000 up to 55,000 acre-feet per year according to recent studies. Historic groundwater pumpage has exceeded these estimates resulting in an overdraft condition in the valley. In recent years, water levels have begun to recover as a result of effort of the State Engineer and the SNWA. The water district in North Las Vegas has an artificial recharge program which has served to bring down net valley groundwater production. In the wintertime, well water is replaced. Replacing the well water is a tool used in the groundwater management program to help save water levels.

Mr. Walker commented on the technical aspect of the groundwater discharge into the Las Vegas Wash, and inquired about the flow rate. Ms. Brothers responded the flow rate was about 15,000 acre-feet per year. Mr. Goff explained this figure was difficult to quantify due in part to the fine grained sediments in that area contributing to less flow.

In response to a question on artificial recharge, Mr. Goff explained the concept of deep well injection through the municipal pipelines. Some wells are dedicated recharge wells and others are converted from production to recharge during the recharge season. This is all done through pipelines.

John Hiatt, Advisory Committee for Groundwater Management, Las Vegas, asked for specific information regarding the 15,000 feet of groundwater flowing out into the Las Vegas Wash. Specifically, he asked if this groundwater flow was reflected in the net loss. Ms. Brothers replied the concept of secondary recharge is responsible for that flow as a result of the shallow system getting into the Wash.

Mr. Turnipseed pointed out over-development of the valley was responsible for salt loadings, fertilizers, and other things being ten times what the natural condition would be. He said this happened because residents applied more water to the lawns and golf courses than the grass was actually able to consume. The leftover water percolated down and emerged into the wash.

Mr. Hiatt said water is not coming out of the natural recharge of the basin but is an artificial man-made issue, and should not be counted in the natural water budget for this basin. Ms. Brothers agreed, and offered the predevelopment conditions as evidence there was probably a small spring where the bedrock is high, which drove groundwater upward. There was no natural flow of groundwater to the Las Vegas Wash before the predevelopment.

Mr. Turnipseed stated the need to find a use for that water, both the groundwater reaching the wash, and in the Whitney Mesa where high water levels perched on top of the Caliche. It can be used for something like a gravel operation before being substituted for a fresh water gravel operation. He added the exact mechanism driving this decision is unknown.

Mr. Hafen said the Water Authority has some studies to determine ways to use that water. Ms. Brothers said they receive credit in the return flow credit calculations for that 15,000 acre-feet.

Mr. Goff continued his discussion of overdraft by making the following points to demonstrate the two manifestations of over drafting. First, declining water levels are a result of over drafting. Since 1945, water levels have dropped from about 50 feet to almost 200 feet below land surface out in that area. A geologic explanation is the presence of fine sediments which keep the winter period recharging water program from filling up the wells as easily. A second manifestation of over drafting is land subsidence. Five feet of land subsidence occurred between 1983 and 1987. The artificial recharge program has raised water levels. The United States Geological Service studies indicate raising water levels will slow land subsidence.

Mr. Goff offered his analysis of the Artificial Recharge Program. Since the end of 1999, 195,000 acre-feet of water have been recharged. The program has increased from the 1980s into a significant and viable program. In fact, it is the biggest program in North America for deep well injection. However, variations in annual recharge are affected by system constraints, Indian summers, and the length of the warm weather period.

Ms. Brothers responded to a question from Mr. Bingham regarding how much of this water is pumped out during the summer. She said while this practice was initially in use to cover some over pumpage of groundwater rights, it has not been continued for a number of years.

Mr. Goff responded to a question by Mr. Walker regarding the depth necessary for injection to stabilize the groundwater tables. He explained that groundwater is maintained within the valley since the outlet for the valley is the Las Vegas Wash. The Las Vegas Wash is very constricted and full of sand, which causes the water to move upward. Water levels across the valley from 1990 to 1998 have risen since the artificial recharge program was started in the late 1980s. In some areas, the level has risen 50 feet.

Mr. Bingham asked a series of questions regarding the predevelopment water level, the secondary recharge mound, flow toward a regional aquifer, and water chemical identifiers. Mr. Goff responded by explaining the topography of the area. In the central and eastern parts of the valley, the few water units are confined from each other by the Caliche and the clay. In the northwest, the waters start intermingling but there is not a shallow aquifer. In the lower parts of the valley, which have higher fine grain sediment concentrations, the shallow and the principal aqua become separated. The two waters have different chemical compositions.

Mr. Goff directed the TAC's attention to the northwest part of the valley. A projection through 2000 indicates that 80 wells will need to be deepened or replaced. In one or two concentrated townships, the ratio of the number of the wells increased over time. He described a circular problem wherein the deepening of wells has resulted in decreased water levels, causing wells to go dry. The well owners redrilled the wells deeper to get to water which lowered the water table and caused shallow wells to dry up.

Mr. Goff discussed the specific conditions of Township 19, an area of fine grained sediments with declining water levels. He offered a solution from the Las Vegas Valley Groundwater Management Program (GMP). The GMP is allowed to dedicate up to 5,000 acre-feet a year of recharge to be left in the ground to help stabilize groundwater levels in the valley. A program is already underway in Township 19 which will be the recipient of two artificial recharge wells. The site chosen for the wells is directly up gradient from the areas which are experiencing declining water levels. It is anticipated that the new artificial recharge wells will have a positive effect on bringing up water levels so that wells will not have to be deepened or replaced as often. It will help stabilize water levels in that area and should actually reduce the number of hookups.

Ms. Brothers commented on the layered valley, which gives confusing results when attempting to predict an answer. Other members commented on inconsistencies with layering.

Mr. Hamilton then asked if the ground could filter water which would experience a change in chemistry as it moved over a distance of a few thousand feet or one-half mile. He added that the chemistry of the water is directly dependent upon the type of land which it moves through. Mr. Goff answered that there will not be much change if the filtration effect is short circuited through a fracture, or highly transmissive zone. Additionally, water traveling through a couple thousand feet of gravels and sands becomes softer. A good comparison is the hard Colorado River water compared to the softer groundwater from the valley. Valley groundwater is of better quality.

Ms. Brothers offered an additional point of clarification regarding the recharge program noting it is not a pilot program; it has been in effect for over ten years. It is an established method, and the SNWA knows what to expect from it.

Mr. Westergard reiterated the two goals of the meeting remaining are to address: (1) a status report to the A.B. 408 Subcommittee of implementation of the three legislative measures; and (2) focus on developing the issues.

Mr. Goff concluded his presentation by focusing on key points in the southeast. The shallow groundwater in the southeast part of the valley is a result of secondary recharge. This occurred by: (1) the replacement of all natural vegetation with well watered lawns; (2) the inability of lawn water to percolate through fine sediments, and subsequent intercepting of ground surface, as it traveled downward; and (3) water flowing from resident backyards all year long. The results of this water flow are many infrastructure problems in the Warm Springs area, a high saline content which kills any regenerating vegetation, health hazards in areas intercepting the land surface, and poor water quality primarily consisting of dissolved solid concentrations.

Bjorn Selinder, Churchill County Manager, Fallon, asked for a comparison of water quality problems with the incidence of water flowing into the storm drainage system. Mr. Goff answered that salinity is added to the water in the Las Vegas Wash which is then discharged into Lake Mead.

Chris Weiss

Chris Weiss, SNWA, spoke of his role with the SNWA and with the Las Vegas Valley GMP since 1996. He offered an orientation of the program (Exhibit E) and made the following observations:

\$ The GMP is an outgrowth of legislation, introduced in 1995 that dealt with a groundwater replenishment district. The legislation wanted the program to work more closely with the well users to assess the issues. However, the Legislation failed in 1995.

\$ A 21 member citizens committee was formed, under the direction of the SNWA, a result of this legislative request.

\$ Committee, subcommittee, and outreach meetings were held by the original SNWA Citizens Advisory Committee.

\$ During this process, new legislation was drafted, submitted to the 1997 Legislature, and became Assembly Bill 436 (Chapter 572, *Statutes of Nevada, 1997*). It passed through a number of committee hearings before being approved and signed into law in 1997.

\$ One of the components of this program was the formation of an Advisory Committee in August of 1997, for groundwater management. The goals were to interface with the public well users in the community through outreach and public workshops, stay apprised of current changes or issues facing the well users, and provide recommendations and advice to the SNWA Board of Directors based on the results of the outreach program.

\$ The Advisory Committee is comprised of nine persons. Seven individuals represent various types of groundwater use in the Las Vegas Valley, and two individuals represent Nevada's Division of Environmental Protection (DEP) and the Nevada State Engineer, respectively. Mr. Hiatt is the Chairman. One of the key aspects of this program is aquifer protection, which justifies the presence of State DEP.

\$ The time line for these activities ended in 1999. The key milestone of this time was the submission of a report to the 1999 Legislature containing additional recommendations from the Advisory Committee on Groundwater Management in the Basin. Additional legislation, A.B. 347, sponsored by the Water Authority, contained these recommendations. The two key issues received from community workshops are to:

13 Obtain authorization for a permanent artificial recharge program whereby water is put in and not taken out

to benefit well users

- 11 Continue the outreach and conservation initiatives and find ways to address the cost of abandoning and connecting to a municipal water system.

\$ The 1999 legislation: (1) codified the State Engineer's rules for hooking up; (2) established programs to help stabilize water levels in the basin through permanent recharge; (3) required future well owners to be notified of rules governing wells in the Las Vegas Valley; (4) created an additional study to review well issues for the next Legislature; and (5) established grant and payment programs to assist well owners who are required to hook up by the State Engineer.

\$ Key achievements of the GMP in the last six months include:

1. Construction began on permanent recharge wells.
2. SNWA Board of Directors approved the Financial Guidelines:
 - a. Mandatory and voluntary connections.....85 percent eligible costs
(Includes all offsite and onsite improvements, and any connection charges or fees).

31 If the well user qualifies for public assistance@
as defined in the *Nevada Revised Statutes*.....100 percent eligible costs

11 SNWA plugs and abandons wells at no cost to well user (for mandatory connections).

3. Groundwater Management Program hosts a public information fair (300 well owners attended)
4. Distribution of the first quarterly newsletter for well owners.
5. Groundwater fee bills sent to all well owners.
6. Working with the Office of the State Engineer to draft a Memorandum of Understanding to clarify the working relationships and other aspects of the GMP as it moves forward.

\$ Funding is provided under the original 1997 legislation, which authorized the GMP to charge \$10 fee per acre foot, per domestic well, per year. This fee was only implemented on government entities that have permitted water rights, not domestic or community well users because of the ongoing development of recommendations and program activities. In 1999, as a result of the outcome of the cost analysis report, that fee was increased to \$30 per acre foot, per year, or \$30 per domestic well per year.

\$ This is how a funding source is created for the GMP from which to administer the financial assistance program. Also, A.B. 237 provides authorizing language for the GMP to apply for state grant funds to help support the mandatory hook-up program.

\$ Due to issues with the bonding cap, no grant money is available at this time.

\$ Hook-up costs can reach \$8,000, \$15,000, or \$20,000, depending on the distance of the water line and on site expenses from the property line to home. The SNWA will cover the cost of the water line street location to the house. There are some limitations and flexibility as expressed in the Financial Guidelines (Exhibit F). There are loan options, but these are grants which are not expected to be repaid. Mandatory hook ups receive priority for financial assistance over voluntary hook ups.

Mr. Hafen inquired as to the average cost of plugging a well. Mr. Weiss estimated that cost to be approximately \$5,000.

Mr. Hamilton asked what sort of fiscal analysis has been done to assure adequate funding. Mr. Weiss responded a rate of \$27 was presented to the legislature. This program is expected to become part of an ongoing annual budget process. The dollar amount of what is available each year is unknown at this point.

Mr. Goff pointed out that there are ongoing discussions with the State Engineer regarding the number of abandoned wells, the set up time lines, and a dialogue to get a sense of the situation.

Mr. Weiss estimated \$2 million in funds if all fees are paid. The initial priorities are: (1) \$200,000 available to the financial assistance program; (2) Jones Farm Road, the first mandatory case, has been on a fire hydrant hose for months; and (3) ten homes have already made voluntary inquiries.

Mr. Weiss further explained that the overall program budget will depend on the rate of compliance for the first billing. Government entity billing can be estimated and represents 70 percent of the program revenue. That means that \$140,000 will be available, with the maximum figure possibly at \$2 million.

Mr. Bingham took issue with the number of wells needed to be deepened. He referred to a slide which indicated nearly 200 wells. When he was informed that those figures were based on ten years (or 20 wells per year), he continued to question the availability of the GMP=s funds. Mr. Weiss said the mechanism in place is such that if there is no financial assistance available, failed well owners would be allowed to do what they need to maintain their wells, including re-drilling or relocating.

Mr. Bingham pointed out that heavy development would continue to recreate this problem in the Jones Farm area.

Mr. Weiss said the performance of the financial assistance fund would depend on time, grant monies, and the revenue stream created by the groundwater fee.

Mr. Selinder asked for clarification on the groundwater fee issue, in terms of how it would be enforced. Mr. Weiss responded to the issue of Arequired versus enforceable.@ The issue of unpaid fees would be referred to the legal staff. From the perspective of a public agency, the better approach would be to educate the public rather than to threaten them with additional fines, liens against property, or other punitive measures. Mr. Weiss remarked that he has not encountered a lot of resistance on the fee issue.

Mr. Hamilton asked how the well owner is going to recognize the bill in the mail and recommended altering its appearance from all other SNWA information mailings. Mr. Weiss replied there would be two advance letters explaining the process, and a continued outreach program to educate the community. He further assured that the finance and billing departments were working on the actual design of the bill notice.

Mr. Turnipseed pointed out another accomplishment of A.B. 347 included the location of every permitted and domestic well.

Mr. Westergard asked Mr. Weiss to expound on the agreement process of A.B. 347 for the repayment of costs. Mr. Weiss explained that some guidelines have been kept open in the financial assistance program to cover potentially unpredictable situations. The option is also open to provide loans to people, with repay agreements. Finally, the program is predominately grant funded and is not to be repaid.

Mr. Westergard led the TAC in identifying the status of the three bills relating to water wells. He stated that he wished to report to the A.B. 408 Subcommittee the status of implementation of each measure.

§ Assembly Bill 237: To date, regulations are being developed by the Board for Financing Water Projects to implement the provisions of A.B. 237. However, no funds have been awarded. Further, eligible recipients are defined in Section 2, paragraph 3, of A.B. 237. They include Aa political subdivision of this state, including without limitation, a city, county, unincorporated town, water authority, conservation district, irrigation district, water district or water conservancy district.@

Ms. Guinasso responded to a question of eligibility pointing to Subsection 3 of Section 2. Ms. Wilcox spoke of submitting a letter requesting funds and a possible problem with the development of criteria for many issues. Staffing issues put resolution at 18 months. Mr. Westergard suggested that an item for issue would be contemplation of whether this type of program is used in other areas of the state and not restrictive to southern Nevada.

§ Assembly Bill 347: To date, the fees have been established and the recharge program is being implemented. In 1999, as in 1998, only municipal well pumpers were billed. However, beginning with the first quarter of 2000, domestic and quasi-municipal well pumpers will also be billed. Finally, criteria for grant programs have been adopted by the SNWA Board, a quarterly newsletter to the well community has been developed, and the Public Information Fair was held in December 1999, with over 300 attendees.

Mr. Weiss confirmed that grant programs are not expected to be repaid. Actual criteria for development of a repayment program for a future loan agreement would be to simply stipulate the interest rate and term of repayment. The financial guidelines are clear on case-by-case treatment regarding loans.

§ Assembly Bill 408: To date, a Memorandum of Understanding is being developed between the State Engineer and the SNWA to establish a process for the revocation of well permits and for information sharing between the two entities. A Financial Assistance Program has been developed by the SNWA which provides up to 85 percent of eligible costs for mandatory and voluntary connections. If the well user qualifies for Apublic assistance@ as defined in statute, SNWA will pay up to 100 percent of eligible costs. The State Engineer is notifying County Recorders as required. The TAC has been appointed and has prepared a list of issues for consideration. It met for the first time on January 12, 2000, and will meet again on February 15, 2000.

Mr. Turnipseed said he has issued temporary permits or allowed domestic wells to be drilled since this bill has passed. The legislation did not cover canceled permits, only the ability to revoke. A paperwork problem has slowed the process of issuing new permits. He listed two ways in which a future land owner (with multiple home land use) can get service for additional homes:

12 All the existing home owners unite and extend the water line thus taking advantage of the program.

13 The owner purchases a portion of a non revokable permit advertised in a newspaper and moves it to the well. The latter is problematic for the SNWA because that creates the existence of two permits for the well, one is revokable, and one is not. Common interest communities must have full disclosure regarding ten specific statutory items which must be presented by the realtor to the purchaser.

IDENTIFICATION OF ISSUES TO BE ADDRESSED AND ROLE OF THE TECHNICAL ADVISORY COMMITTEE

Roland Westergard

Mr. Westergard reviewed the suggested goals of the TAC:

§ To review in detail the recent legislation of the three bills passed concerning domestic water wells, and suggest any new language or legislation that should be introduced in the next legislative session

§ To develop credible statistics on the number of domestic wells in the state, and the number of temporary permits issued in Clark County. Mr. Turnipseed reported that the SNWA has located all the permitted wells, and the District has located all the domestic wells with some degree of certainty, and built a database. At present, there are 7,200 domestic well logs and 5,500 District well logs located. The remainder exist under a street or casino. He spoke about how wells are actually located. Statewide, there are 70,000 well logs in the database.

Mr. Westergard challenged the TAC to specifically identify issues relating to wells. The following discussion included:

\$ Mr. Turnipseed suggested an issue to address the conflicts between domestic wells and larger production wells, requiring notification to the domestic well owner. He explained that the State Engineer is hearing complaints that are contractual between home owners and well drillers. Home owners who are new to the state do not know how deep to drill. A well driller will hit water and the home owner tells him to go another 5 or 10 feet and stop. Then an irrigation well goes into production nearby and drops the water table, causing the home owner=s well to go dry.

Mr. Bingham offered a possible solution is a notice by the State Engineer of such a problem on the buyer=s contract. Mr. Westergard agreed that this is an important issue.

\$ Mr. Hiatt raised the issue of long-term education and dissemination of information needed about water and the use of water wells in Nevada. He said existing and potential water well owners need to be educated that water is a finite resource, there are no guarantees of what the result will be when you drill, and there are risks in drilling a well.

\$ Mr. Hamilton pointed out there should be equal protection under NRS Chapter 533 of *Nevada Revised Statutes*, with protectible property rights for well owners. Current law establishes property rights for water wells in counties with populations under 400,000, but exempts counties with populations over 400,000 (i.e., Clark County). Would it be harmful to water conservation and management issues to provide equal protection?

\$ Mr. Hamilton also asked for an examination of the Prior Appropriation Doctrine. Is it sound water policy? He suggested that if Nevada continues to solicit economic growth and other drains on water supply, perhaps water should go to where it is best used, and not simply to who had it first.

\$ Mr. Hamilton challenged the committee to look at whether or not there is effective and informed oversight by the Clark County Commission over the Las Vegas Valley Water District as its Board of Directors. It was his opinion that the County Commissioners do not always know why certain activities take place and are not sufficiently knowledgeable to make informed decisions. There should be some mechanism in place or standards that must be met to see to it that the Commissioners are accountable.

\$ Mr. Hamilton suggested that state law be changed so that the availability of water determines revocation of a well permit, not simply the passage of time and normal repairs to a functional well. People are losing access to groundwater due to the operation of state water law, not the condition of the water table. He added that a cost-benefit analysis is needed to determine if it is sound policy to assume that if a person does not have a water right and is on a well, it is best to require him to move to a municipal system. For example, if the integrity of the well=s casing is the problem and not the water depth, the fact that a drilling rig will be needed to fix it mandates that the well be abandoned and the home be connected to a municipal supply.

\$ Mr. Hamilton pointed out another issue for the TAC to examine is that well permits should not be canceled on undeveloped lots. He said there are instances in which a group of lots on a cul-de-sac share a well, but not all of the lots have been developed and diverted the water to beneficial use. The permits for the undeveloped lots are being canceled.

\$ Mr. Hafen asked to examine the 1,800 gallons per day provision for the statutory production of wells. He noted the State Engineer has never undertaken a survey of domestic well production; however, it is believed that most domestic wells do not pump 1,800 gallons per day. Nevertheless, the State Engineer has to recognize their right to do so.

\$ Mr. Hiatt pointed out there is currently no incentive for conservation of water use in Nevada. Currently you have to use your water, or you lose the water right. As a result, many water rights holders waste water to maintain their water right. This takes away any incentive to conserve water.

\$ Mr. Walker suggested artificial groundwater recharge may be necessary in other areas of the state. He wondered if we need Replenishment District legislation? He commented that depending upon whether or not there be more or less domestic wells in the future, it may not make sense to hook up new wells without a recharge program.

- \$ Ms. Brown remarked that water education, particularly of the media, is very important. Many people question why new development and golf courses are being approved when people on domestic wells are losing their permits while the public is being advised the water table is dropping. In her opinion, residents and the media need to be educated about this issue to disseminate accurate information.
- \$ Mr. Selinder and Mr. Walker noted that water quality and water quantity are inherently linked. There may be a need for state water policy to ensure that the two are linked in statute.
- Mr. Walker noted that there is a need to check the compatibility of public health and water law statutes. Is there a mandate to hook up to municipal water for public health reasons? In some areas (like Washoe County), the problem with wells is not the quantity of water but the quality. Statutes should be compatible or combined if possible.
- \$ Mr. Hafen predicted that private water companies may take the place of individual wells, making domestic wells less relevant. He added that there is a relationship between septic systems and the location of water wells. This issue can be tied into the issues pertaining to public health issues.
- \$ Mr. Hiatt stated that water policies of the State need to be applicable over the long term. He said that water policies impact people, so mistakes made now will affect people in the future. The State Engineer must look over the long term for policy issues.
- \$ Mr. Konakis noted individual wells owners in Elko County are dealing with septic problems and the degradation of groundwater.
- \$ Mr. Hamilton pointed out Nevada=s desire to maintain our Away of life@ while accommodating the state=s need to grow. He stated that there are competing pressures of individual water rights in the face of population growth. Water is being wasted to preserve water rights. Preserving this tradition of Ause it or lose it@ and Afirst in line, first in right@ is more backward than forward thinking.
- \$ Ms. Brothers observed that Nevada=s groundwater law is very good. Before changing it, she suggested looking at neighboring states for comparison.
- \$ Mr. Hamilton said buyers should be aware that State law provides that domestic well permits are revocable. He suggested that real estate agents be required to tell prospective buyers that domestic water well permits are revocable.

NEXT MEETING AGENDA DEVELOPMENT

Mr. Westergard suggested a review of the issues, and an assignment of areas of responsibilities as two agenda items for the next meeting. Ms. Eissmann noted that if more than one person is assigned per subgroup or working group, then the application of the Open Meeting Law will apply.

FUTURE MEETING SCHEDULE

The second meeting of the Technical Advisory Committee to the Subcommittee to Study Domestic and Municipal Water Wells will be held on February 15, 2000, at 10 a.m. in the Grant Sawyer State Office Building, Room 4412 A & B, 555 East Washington Avenue, Las Vegas, Nevada.

PUBLIC COMMENT

There were no comments from the public.

ADJOURNMENT

There being no further business, the meeting was adjourned at 2:50 p.m. Exhibit G 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 two-page document dated January 12, 2000, which summarizes three Assembly Bills enacted by the 1999 Legislature as they pertain to water wells, provided by Linda Eissmann, Senior Research Analyst, Legislative Counsel Bureau, Carson City.

Exhibit B is an undated one-page document titled AMost Significant Actions Taken By The 1999 Legislature Relating to Water Wells,@ provided by Linda Eissmann, Senior Research Analyst, Legislative Counsel Bureau, Carson City.

Exhibit C is a revised list dated January 11, 2000, containing names, telephone numbers, and addresses of the Domestic and Municipal Water Wells Advisory Committee, provided by Linda Eissmann, Senior Research Analyst, Legislative Counsel Bureau, Carson City.

Exhibit D is a 17-page document dated January 12, 2000, titled ALas Vegas Valley Groundwater Management Program,@ provided by Michael Goff, Technical Lead, Southern Nevada Water Authority, Las Vegas, Nevada.

Exhibit E is an eight-page undated document titled ALast Vegas Valley Groundwater Management Program - Advisory Committee Process Overview,@ provided by Chris Weiss, Southern Nevada Water Authority Representative, Las Vegas, Nevada.

Exhibit F is 14-page dual sided document titled ALas Vegas Valley Groundwater Management Program - Summary Report of Activities - Calendar Year 1999,@ provided by Chris Weiss, Southern Nevada Water Authority Representative, Las Vegas, Nevada.

Exhibit G is the AAttendance 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.

