



M E M O R A N D U M

TO: Lisa A. Atkins
State Land Commissioner

THRU: Simone Westbrook Hall
Acting Natural Resources Division Director

FROM: John Schneeman, Assistant Natural Resources Division Director
Ray Keough, Coordinated Resource Management Section Manager
Robert Harding, Water Rights Section, Hydrologist
Chuck Vencill, Agricultural Unit

CC: Theresa Craig, Assistant Attorney General

DATE: September 28, 2015

SUBJECT: Recommendation to meter Fondomonte Butler Valley wells

Issue: Groundwater depletion as a result of agricultural leases in the Butler Valley

Action Requested: Request/require groundwater metering and reporting

Deadline: Lessee Fondomonte received approval for 7 new wells and is replacing diesel pumps with electric pumps on existing wells – meters should be installed at the same time

Division/Section/Unit: Natural Resources Division, Coordinated Resources Management Section, Agriculture Unit, Water Rights Section

External Customers/Names: Fondomonte Butler Valley, Rose Law Group

External/Internal Impact (Operational, Political, Other):

1. Butler Valley Basin is one of a limited number of basins in the State permitted by statute to export groundwater out of the Basin to Active Management Areas (AMA). This has the effect significantly increasing the future value of groundwater in the Basin currently being utilized for agriculture.

2. Metering and reporting groundwater use will allow us to better understand water use and conditions in the Butler Valley Basin and assess impacts on future uses.
3. Agricultural Lessee Fondomonte may be somewhat reluctant to meter and report water use because it will accurately reveal how much groundwater is used and potentially negatively impact farming in Butler Valley.
4. There is no lease condition or other legal requirement for metering and reporting agricultural water use in Butler Valley.
5. Other agricultural lessees outside of AMAs and Irrigation Non-Expansion Areas (INA) are not required to meter and report so current lessee may claim they are being unfairly singled out.

Supporting documents: Four (4) ADWR Arizona Water Atlas maps of Butler Valley Basin

1. Butler Valley Basin Geographic Features (ADWR, Arizona Water Atlas, 2006 -2008)
2. Butler Valley Basin Land Ownership (ADWR, Arizona Water Atlas, 2006 -2008)
3. Butler Valley Basin Groundwater Conditions (ADWR, Arizona Water Atlas, 2006 -2008)
4. Butler Valley Basin Cultural Water Demand (ADWR, Arizona Water Atlas, 2006 -2008)

Background

The Butler Valley Basin is located in La Paz County west of the Phoenix Active Management Area. The basin is 288 square miles in area and is characterized by a valley bordered by two mountain ranges – the Harcuvar Mountains on the eastern basin boundary and the Buckskin Mountains on the northwestern basin boundary. The Butler Valley Basin is essentially a closed basin. Minimal natural recharge occurs, estimated at 1,000 acre-feet per year (AF/Y, and very little natural discharge occurs at the lower end of the basin in an area referred to as “The Narrows” where Cunningham Wash exits the Basin. There are no perennial or intermittent streams in the Butler Valley Basin. The major aquifer is comprised of alluvial basin fill deposits. Similar to other alluvial fill basins in Arizona, when groundwater is pumped from Butler Valley Basin it is essentially “mined” because it is not replaced by natural recharge.

Land in the basin is almost entirely government owned: State Trust (43.9%) and Bureau of Land Management (55.5%) land. Most of the State Trust land is located the center of the basin which is also where most of the groundwater is located, while BLM land is situated around the periphery of the Basin. The primary uses of State Trust land are grazing and agriculture. Most of the water use on State Trust land is utilized for agriculture which is located in the southwestern part of the basin on 5 ½ sections of land in T7N, R15W. This land is currently leased to Fondomonte under four leases. The most recent published estimate of groundwater demand was 14,500 AF, occurring in 2006 under previous lessee F&M Farms (Water Resources Development Commission, 2011). Internal Land Department estimates, based on information provided in 2014 by Farm Sources International (FSI), the lessee prior to Fondomonte, indicate the current pumpage may be somewhat higher, on the order of 18,000 AF/Y. The actual volume of groundwater used by FSI / Fondomonte is not known since the wells are not metered or reported.

A 2012 Hydrologic Report prepared for the ASLD in support of ASLD’s Analysis of Adequate Water Supply from the ADWR, which probably provides the most accurate assessment of groundwater storage in the Basin, estimated the volume of recoverable groundwater above 1,200 feet below land surface (bls) to be approximately 22 million AF.

Agricultural Leases in Butler Valley

FSI assigned its four agricultural leases to Fondomonte in early 2015. The most recent annual agriculture questionnaires submitted in 2012 contained the following information:

Lease 01-94820 is for 1 section (T7N, R15W, Section 15).
Based on aerial photos, there are 2 center pivots.
In 2012 FSI reported that they are farming one center pivot with alfalfa.

Lease 01-95645 is for ½ section (T7N, R15W, Section 2).
Based on aerial photos, the land was farmed at one time, and is divided into square-shaped fields.
Our agriculture questionnaires go back to 2001 for this lease.
Since that time, there have been no farmed acres claimed on this lease.

Lease 01-97431 is for 3 sections (T7N, R15W, Sections 12, 13 and 14).
Based on aerial photos, there are 10 center pivots.
In 2012 FSI reported that they are farming 10 center pivots with alfalfa.

Lease 01-98258 is for 1 section (T7N, R15W, Section 11).
Based on aerial photos, there are 3 center pivots.
In 2012 FSI reported they are farming 3 center pivots with alfalfa.

Total lease rental income to the Trust in 2014 for the 4 leases was roughly \$50,000.

Fondomonte recently submitted applications to place improvement that would essentially bring all of the land under the four agricultural leases into production doubling the farmed acreage to approximately 3,400 acres. The applications were approved.

Issue:

Butler Valley is one of three groundwater transportation basins west of the Phoenix area that is authorized by statute for interbasin groundwater transfer to an AMA. At some point in the future, it will be economically and regulatorily feasible for groundwater in Butler Valley to be transported out of the basin through the Central Arizona Project (CAP) canal (located approximately 1-1/4 miles from the lower end of the Basin) and into the Phoenix AMA. The current average cost for water auctioned from State Trust land is approximately \$85.00 per AF. Assuming the more conservative estimate of 14,500 AF/Y of water currently used for agriculture were instead auctioned at \$85.00 per AF, the value of the water would be \$1,232,500 per year. While this does not include transportation or other costs, its value far exceeds the roughly \$50,000 per year received from agricultural leasing. It is also very likely that the future value of this water will be much higher than the current \$85.00 per AF. In addition, with the recent approval to place improvements and double the amount of farmed acreage, one could reasonably assume that water use will also double as will the potential future lost revenue or \$2,465,000 per year.

Primarily for purposes of anticipated future interbasin transport, the Department has undertaken a number of groundwater studies and used the studies and associated groundwater modeling to quantify

and reserve groundwater in the Butler Valley through an Analysis of Adequate Water Supply (AAWS). However, an AAWS only protects ASLD's groundwater from future development impacts and does not place restrictions on current or future agricultural groundwater pumping. Under the existing lease agreement, the agricultural lessee (Fondomonte) may increase their pumping without any limit other than the physical availability of groundwater, regardless of sustainability. Due to the minimal natural recharge to the basin, unchecked agricultural pumping has and will continue to deplete the aquifer.

ASLD agricultural leases require lessees to farm a minimum of 90% of the usable/farmable land at least seven years out of every ten although waivers are typically granted if the land has not been developed for farming (Agricultural Lease Condition Article 4.2). In order to farm the land, a lessee must construct improvements which are reimbursable by law. Agricultural reimbursable improvements are generally expensive and may present a significant obstacle should ASLD consider other uses for the Butler Valley Basin, in particular interbasin groundwater transport, since the lessee must be compensated for the improvements when a lease is cancelled. However, improvements are almost always approved because a lessee cannot conduct the required farming without the improvements. Issuing an agricultural lease but then denying the lessee the ability to farm (i.e., access to water) would be problematic. It is worth noting that the income derived from an agricultural lease is entirely based on rental – there is no charge for groundwater pumped from and used on the leased State Trust land.

In a letter dated 10/11/2013, the Land Commissioner notified then lessee Farm Sources International (FSI) that the groundwater in Butler Valley was an important asset to the State Trust. The Commissioner added that the Department's Water Rights Section would not recommend an expansion of farmed acreage in the basin and by maintaining the existing number of center pivots for farming, the State Trust would limit the depletion of this important resource. However, the letter was advisory in this regard. There was no legal requirement under the terms of the lease to maintain only the existing number of center pivots. Agricultural leases by their nature anticipate and, as noted above, essentially require that the lessees bring land under the lease into agricultural production.

An important consideration in the matter of the agricultural leases in Butler Valley is the distinct possibility that they may ultimately preclude the possibility of utilizing any of the groundwater for interbasin transport. Given the current and projected future increases in water use on the agricultural leases, there may not sufficient excess water to warrant the capital investment required to withdraw and transport the available water to the CAP canal.

Recommendation:

We believe our best course of action is to attempt to enlist the cooperation of the lessee (Fondomonte) and ask them to voluntarily install flow meters on their current and future wells and report their water use annually. Should this approach fail there is a Plan B. See discussion below.

Discussion:

Ideally, we should have the ability to limit or completely eliminate agricultural groundwater use on ASLD leases in areas we determine are important for other uses, such as groundwater transportation. While we can and should prevent expansion of new groundwater dependent agricultural use in these

important areas, it is very difficult to limit or eliminate groundwater use on existing leases because of the requirement to reimburse the lessee for improvements.

Given the difficulties associated with even controlling, much less eliminating groundwater use on existing agricultural leases, we recommend that efforts be made to at least obtain accurate information on how much water is being pumped and used for crops on State Trust land in those basins identified for potential interbasin groundwater transport. With this information we would be better able to assess overall groundwater conditions, depletion rates and project groundwater availability for future transportation.

Unfortunately, Arizona groundwater law only requires metering and reporting in an AMA or INA pursuant to A.R.S. § 45-604 which is specifically identified in Agricultural Lease Article 14.7. By specifically identifying under which circumstance metering and reporting is required, Article 14.7 implies that metering and reporting is not required for non-AMA and non-INA areas, which in fact it is not. However, the fact that metering and reporting is not required in these areas by statute does not preclude the possibility that ASLD may impose its own requirements. In 2014 FSI was in the process of providing pumping schedules and estimated total volume of water used the previous year. There had also been a number of discussions regarding the installation of flow meters, including the possibility that ASLD might be willing to install them, but after stating that they were planning to install flow meters FSI then decided to hold off, initially until after approval of the 10-year lease agreements, then later, following installation of their electrical conversion project. It is unclear and probably unlikely that this understanding was conveyed to Fondomonte when the leases were assigned.

Agricultural lease agreements do not specify the type of crops to be grown, the number of plantings/harvests per year, or the irrigation method to be utilized (essentially a “farm plan”); all of which have by far the greatest impact on the amount of water used. Lessees are also not currently required to report crop information on their annual agricultural questionnaire. We recommend that all lessees be required to report this type of information. We would also recommend modifying the standard agricultural lease conditions in areas outside of AMAs and INAs where ASLD has determined pumpage data is important to require the installation of a metering device on all non-exempt wells and reporting of water use.

Plan B

If the lessee declines to voluntarily install flow meters and report water use annually, we could argue that since the lessee agreed in Article 14.9 Water Conservation: “Lessee agrees to utilize water in the most efficient manner possible” we need to know how much water is being used to determine if the lessee is complying with Article 14.9 and is using water in the most efficient manner possible. If we require metering and reporting of water usage along with basic crop information, we can then determine if the lessee is using water efficiently. However, if we require one Lessee to meter and report do we need to require all Lessees do the same or can we make the case that Butler Valley is unique because it is a groundwater transportation basin?

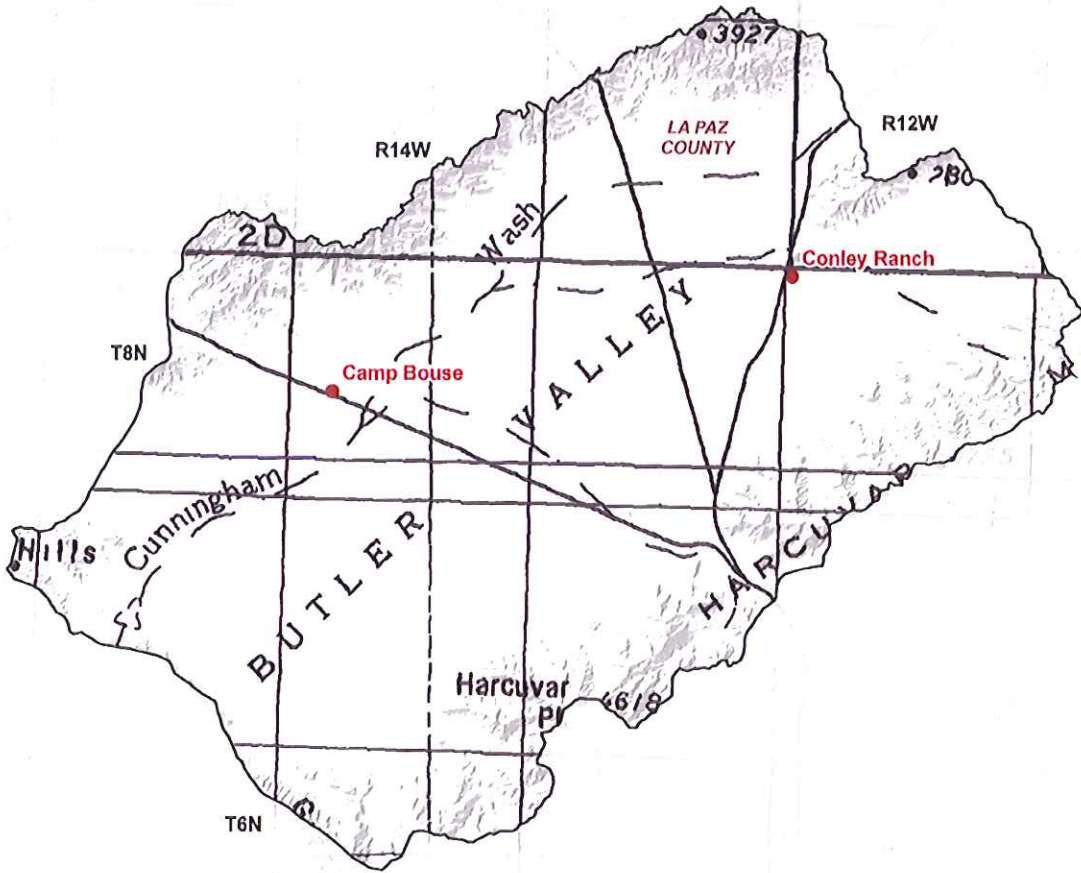
Plan C

Article 4.1 Use. “When Lessee is notified in writing by the Lessor that the Department is considering another use for a portion or all of the Subject Land, and the Lessor directs that the Lessee not expand

their operation or plant additional crops on the identified Subject Land without a crop plan approved by the Lessor in writing, Lessee shall not expand or plant until such approval is obtained.”

Can we say that we are considering groundwater transportation and direct the Lessee not to expand indefinitely? Or is this not a “use of the Subject Land”?

It could be argued that we are not considering another “use” for the land, but for the groundwater, currently, or proposed to be used, to farm the land. Because water is required to farm the land, and the lessee is required under the terms of the lease to farm a minimum of 90% of the farmable land (Article 4.2), and is entitled to the use of groundwater (Article 14.1) “on” (i.e. underlying) the land to accomplish this end, attempting to limit the amount of groundwater used by the lessee for another “use” may not be appropriate.



Base Map: USGS 1:500,000, 1981

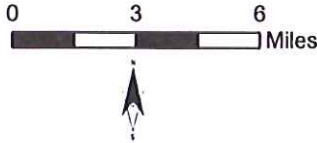
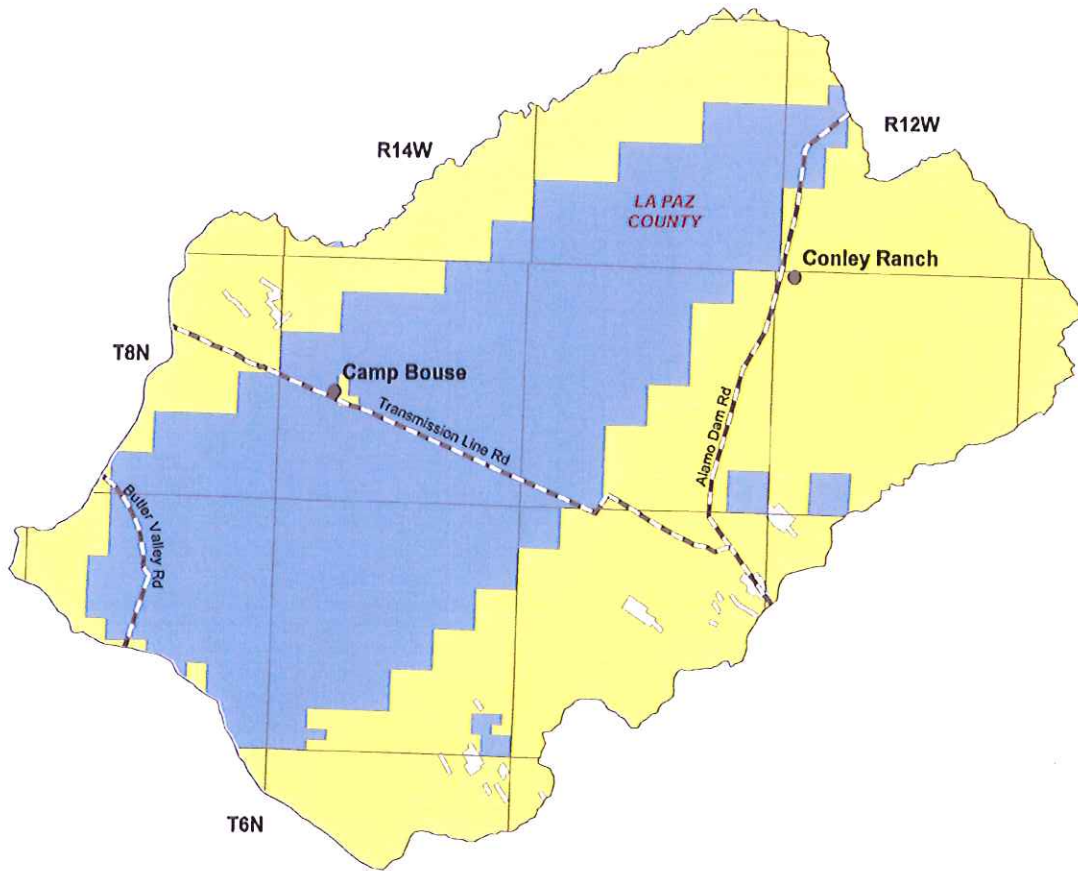
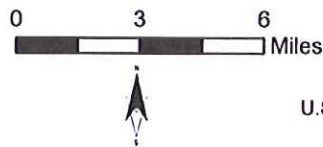


Figure 7.1-1
Butler Valley Basin
Geographic Features

City, Town or Place ●

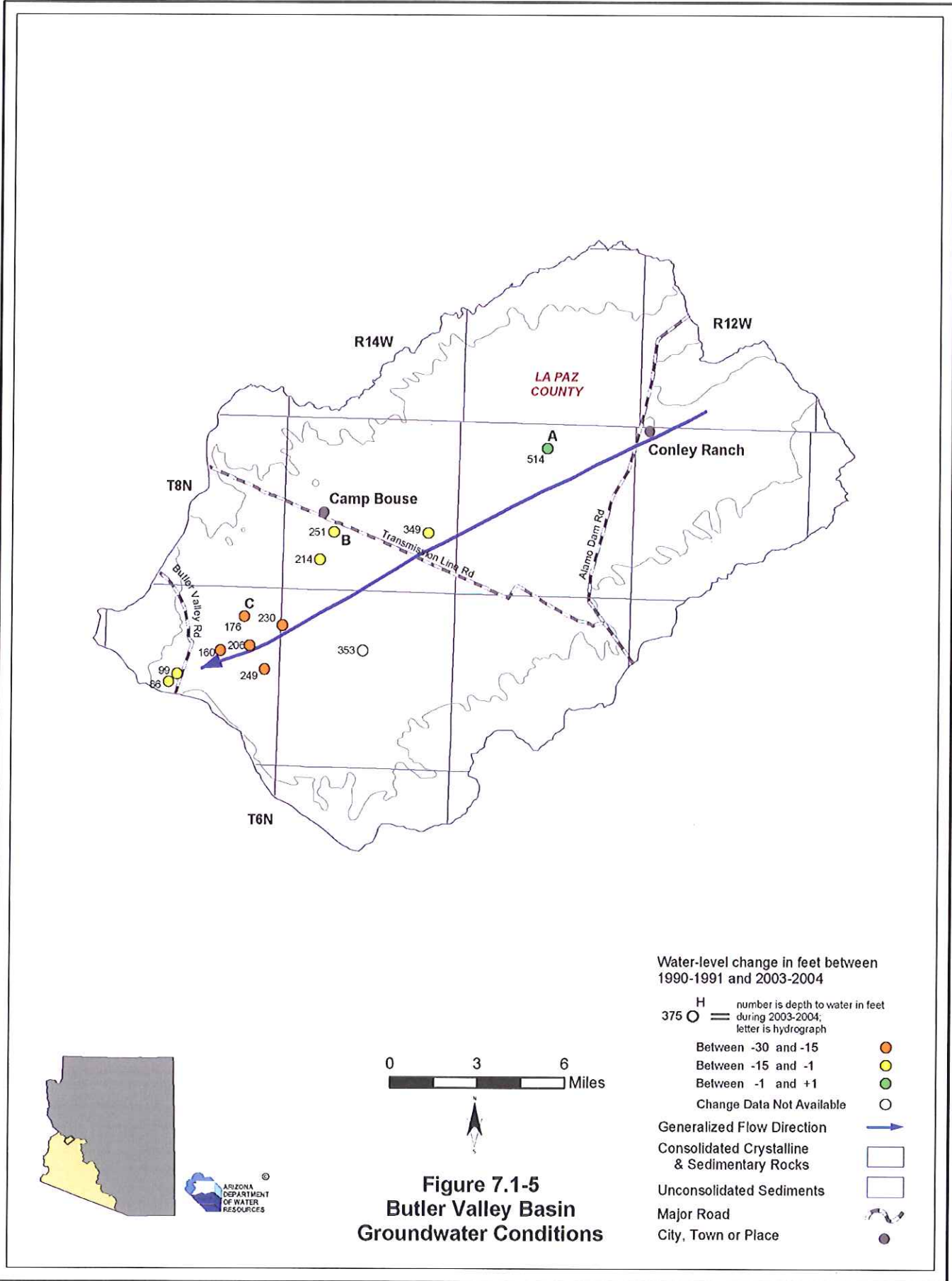


Source: ALRIS, 2004



**Figure 7.1-2
Butler Valley Basin
Land Ownership**





**Figure 7.1-5
Butler Valley Basin
Groundwater Conditions**

Water-level change in feet between 1990-1991 and 2003-2004

H number is depth to water in feet
375 ○ during 2003-2004;
 letter is hydrograph

Between -30 and -15 ● (orange)
Between -15 and -1 ● (yellow)
Between -1 and +1 ● (green)
Change Data Not Available ○ (white)

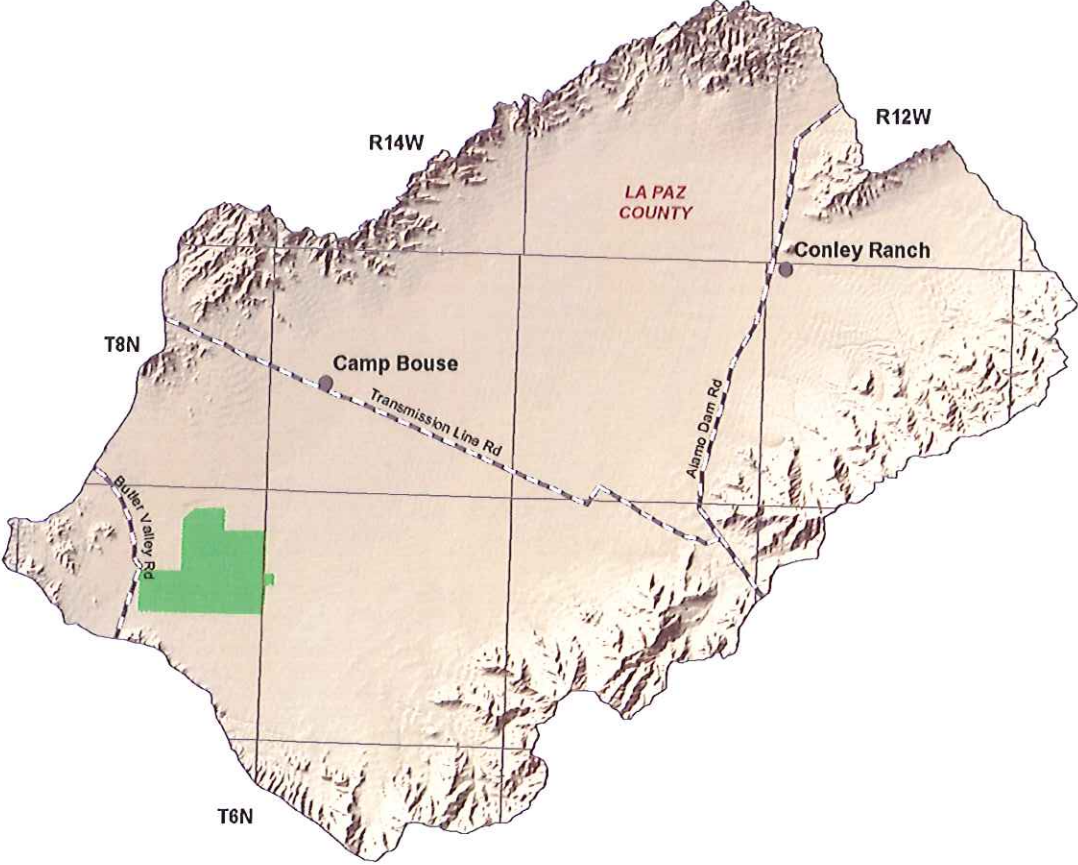
Generalized Flow Direction → (blue arrow)

Consolidated Crystalline & Sedimentary Rocks [light gray box]

Unconsolidated Sediments [light blue box]

Major Road [dashed line with center line]

City, Town or Place ● (black dot)



Primary Data Source: USGS National Gap Analysis Program, 2004

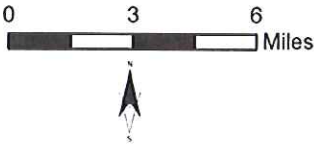


Figure 7.1-9
Butler Valley Basin
Cultural Water Demand

- Demand Centers**
- Agriculture 
 - Major Road 
 - City, Town or Place 