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GALLAGHER & KENNEDY

P.A.

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AZ CORP COMMISSION
DOCUMENT CONTROL

November 5, 2001

VIA HAND DELIVERY

Arizona Corporation Commission

DOCKETED

NOV 05 2001

Ms. Laurie Woodall
Chair, Siting Committee
Office of the Attorney General
1275 West Washington
Phoenix, Arizona 85007

DOCKETED BY 

Re: *Allegheny's Application for a Certificate of Environmental Compatibility;*
Docket No. L-00000AA-01-0116, Case No. 116

Dear Ms. Woodall:

In relation to certain subjects raised by the Committee at the conclusion of the September 4, 2001 hearing on this matter, enclosed and filed are the following:

1. An October 26, 2001 letter from William G. Knowles, Habitat Specialist, Arizona Game and Fish Department to Jennifer Baker, Environmental Planner, URS. The letter reflects the results of further consultations with the Game and Fish Department as suggested by the Committee (HRTR, pp. 166-169). It also notes with approval the mitigation conditions recommended by Allegheny in its proposed Certificate.
2. An October 22, 2001 letter from Matthew Bilsbarrow, Compliance Specialist, State Historic Preservation Office to you. The letter notes that both identified archeological sites may be avoided. The conditions recommended have been included as items in Allegheny's proposed Certificate.
3. The Addendum to the Water Supply Report for the La Paz Generating Facility (HRTR, pp. 197-198). The Addendum was prepared at the request of and submitted to the ADWR. Assuming a reduced recharge rate of only 30,000 ac-ft/yr from the Fidler facility, water levels rise approximately 25 feet in the Project's vicinity over 30 years.

Ms. Laurie Woodall
November 5, 2001
Page 2

Witnesses will be available to address these subjects and others identified by the Committee on November 13, 2001.

Very truly yours,

GALLAGHER & KENNEDY, P.A.



By:
Michael M. Grant

ORIGINAL and 25 copies filed this
5th day of November, 2001
with Docket Control.

COPY mailed this 5th day of
November, 2001 to:

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12921-0004/967103



THE STATE OF ARIZONA

GAME AND FISH DEPARTMENT

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ORIGINAL

October 26, 2001

Jennifer Baker
Environmental Planner
URS
7720 North 16th Street
Phoenix, Arizona 85020

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2001 NOV -5 P 2:16
AZ CORP COMMISSION
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Re: Technical Report: Biological Resources La Paz Generating Facility Project, La Paz County

Dear Ms. Baker:

The Arizona Game and Fish Department (Department) has reviewed your letter dated October 16, 2001 requesting a review of the above-referenced technical report for the La Paz Generating Facility Project located in Township 3 North, Range 11 West, Section 35 (generating facility), Township 3 North Range 11 West Sections 24, 25 and 36 (500 kV transmission line and switchyard) and Township 2 North Range 10 West Sections 6, 7, 18, 19, 30 (pipeline). The following comments are provided for your consideration.

The Department notes that we were asked to provide comments on a preliminary project proposal in a letter dated April 10, 2001. At that time the proposed location for the generating facility was Township 2 North, Range 11 West, Section 1. We noted in our review letter, dated May 11, 2001, that Centennial Wash crossed through this location and that there was also a mesquite bosque on the site. We are pleased that Allegheny Power Supply Company has decided to relocate the facility away from these high-value wildlife habitats to an area consisting of creosote flats, a lower value wildlife habitat. We further note that the pipeline will be placed under the wash using directional boring. The Department supports these efforts to minimize impacts to this important wildlife habitat.

The Department notes that the location of proposed gas line, transmission line and switchyard have also been changed. The Department's Heritage Data Management System has been accessed and current records show that the special status species listed below have been documented as occurring at the new locations. We note that there was no change in the list from the previous locations.

Jennifer Baker
October 26, 2001
2

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>
Sonoran desert tortoise	<i>Gopherus agassizii</i>	SC, S ² , WC

STATUS DEFINITIONS

- SC - Species of Concern.** The terms "Species of Concern" or "Species at Risk" should be considered as terms-of-art that describe the entire realm of taxa whose conservation status may be of concern to the US Fish and Wildlife Service, but neither term has official status (currently all former C2 species).
- S² - Sensitive.** Those taxa occurring on Bureau of Land Management (BLM) Field Office Lands in Arizona which are considered "sensitive" by the Arizona State Office of the BLM.
- WC - Wildlife of Special Concern in Arizona.** Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Department's listing of **Wildlife of Special Concern in Arizona** (WSCA, in prep.). Species included in WSCA are currently the same as those in **Threatened Native Wildlife in Arizona** (1988).

The Department notes that project biologists surveyed for tortoises and failed to find any tortoises or sign of tortoises. In addition, the proposed locations are considered marginal tortoise habitat

The Department notes that the gas pipeline route passes through an area containing ironwood (*Olneya tesota*) and palo verde (*Cercidium microphyllum*) trees and saguaro cacti (*Cereus giganteus*). We note that the mitigation plan proposes salvaging these plants when necessary. Saguaros are protected under the Arizona Native Plant Law. Therefore, the Department recommends contacting the Arizona Department of Agriculture, at the address provided below, for additional information on the Arizona Native Plant Law, and how it may apply this species.

Mr. James McGinnis
Manager, Native Plant Law
Plant Services Division
Arizona Department of Agriculture
1688 West Adams
Phoenix, Arizona 85007
Phone: 602-407-3292

In our letter dated May 11, 2001 we observed that the proposed evaporation ponds could be wildlife attractant and could have adverse impacts to wildlife. We note that the report proposes mitigation measures to minimize these potential impacts. The Department supports these

Jennifer Baker
October 26, 2001
3

measures. We note that one mitigation measure proposes to contact the Department if a large number of birds are using the ponds. The Department wishes to be contacted in such an event. However, because many of these bird species are protected under the Migratory Bird Treaty Act we also recommend contacting the U.S. Fish and Wildlife Service (Service). If there is a die-off of protected species, it is mandatory to contact the Service.

For the above stated reasons, the Department does not anticipate any significant adverse impacts to the special status species listed above, or other wildlife species, resulting from the approval of this proposed project. However we note that failure to implement the mitigation measures proposed in this report could result in adverse impacts to wildlife.

Thank you for the opportunity to review and comment on this proposed project. The Department looks forward to continuing to work with you on this project. If you have any questions, please contact me at 928-342-0091.

Sincerely,



William C. Knowles
Habitat Specialist
Region IV, Yuma

cc: Russell Engel, Habitat Program Manager, Region IV
Larry Voyles, Regional Supervisor, Region IV
Bob Broscheid, Proj. Eval. Prog. Supervisor, Habitat Branch
James McGinnis, Manager, Native Plant Law ADOA

AGFD # 10-17-01 (A)

URS

ORIGINAL

**ADDENDUM TO THE WATER
SUPPLY REPORT FOR THE
LA PAZ GENERATING FACILITY**

**Prepared for
Allegheny Energy Supply Company,
LLC**

**URS Job No. E1-00001722.03
October 1, 2001**



TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1-1
2.0 BACKGROUND	2-2
2.1 PROJECT DESCRIPTION AND PROPERTY LOCATION	2-2
3.0 REQUESTED INFORMATION	3-2
3.1 ALLEGHENY PROPERTIES IN HARQUAHALA VALLEY	3-2
3.2 HYDROGRAPHS FROM NEARBY WELLS	3-3
3.3 HISTORICAL PUMPAGE IN THE HARQUAHALA BASIN	3-3
3.4 ADDITIONAL SCENARIO FOR GROUNDWATER MODEL	3-5
3.4.1 Water Level Drawdown Modeling	3-5
3.4.2 Simulated Scenarios	3-5
3.4.3 Scenario 4	3-6
4.0 REFERENCES	4-1



LIST OF TABLES

- 1 Allegheny Properties in Harquahala Valley

LIST OF FIGURES

- 1 Allegheny Properties in Harquahala Valley and Associated Wells
- 2 Hydrographs of Six Wells Within 4 Miles of the Project
- 3 Historical Groundwater Pumpage for the Harquahala Valley

LIST OF APPENDICES

- A Addendum to the Harquahala Valley Modeling Report



1.0 INTRODUCTION

This addendum presents additional hydrologic information in support of the Certificate of Environmental Compatibility (CEC) application for the Allegheny Energy Supply, LLC (Allegheny) La Paz Generating Facility (Project). The La Paz Generating Facility CEC application was submitted to the Arizona Power Plant and Transmission Line Siting Committee (Committee) on July 2, 2001.

Copies of the CEC application and the Water Supply Report for the La Paz Generating Facility (water supply report, URS, 2001) were provided for Mr. Dale Mason, manager of the Arizona Department of Water Resources (ADWR) modeling section in late June 2001 to review and comment on the hydrogeologic information. On August 22, 2001, staff from URS Corporation (URS) and HydroSystems, Inc., met with Mr. Mason to discuss the hydrogeologic information contained in the CEC application and the water supply report. In general, Mr. Mason approved of the information presented in the CEC application and water supply report, including the assumptions and conclusions of the groundwater flow model. However, Mr. Mason requested that Allegheny also obtain and submit the following information:

- A map showing the properties in the Harquahala Valley purchased by Allegheny
- A list of the irrigated grandfathered rights appurtenant to the purchased properties
- A list of the wells located on the Allegheny purchased property
- Hydrographs for wells located in the immediate vicinity of the proposed plant
- A chart showing historical pumpage data for the Harquahala Valley
- Historical pumpage data for Townships 2 and 3 North, Ranges 10 and 11 West
- Results of a fourth groundwater modeling scenario using a maximum of 30,000 acre-feet per year of artificial recharge.

This addendum presents discussions and accompanying tables and figures for the above information requests; it is not intended to be a stand-alone report. For details on the groundwater conditions, groundwater quality, and irrigated grandfathered rights associated with the La Paz Generating Facility, and the details of the groundwater flow model, refer to the CEC application and/or the water supply report.



2.0 BACKGROUND

2.1 PROJECT DESCRIPTION AND PROPERTY LOCATION

Allegheny is proposing to construct a 1,080 megawatt (MW), natural gas-fired, combined cycle electric generating plant in the Harquahala Valley, approximately 75 miles west of Phoenix, Arizona. The Project location is shown on Figure 1. It is estimated that the plant will require a maximum of 6,500 acre-feet per year (af/yr) water supply. Water for the plant will be supplied from the underlying aquifer, which is within the Harquahala Basin.

The power plant will be constructed on an 80-acre parcel of undeveloped desert land located approximately 0.75 mile south of Interstate 10 and on the west side of Exit 69, Avenue 75 East. Two-thirds of the Harquahala Valley lies within Maricopa County; the northwestern third, which includes the Project property, lies within La Paz County. The cadastral location of the Project property is the southern half of Section 35, Township 3 North, Range 11 West, of the Gila and Salt River baseline and meridian.

3.0 REQUESTED INFORMATION

3.1 ALLEGHENY PROPERTIES IN HARQUAHALA VALLEY

All of the properties owned by Allegheny and associated with the project lie within the Harquahala Irrigation Non-Expansion Area (INA). According to Arizona Revised Statutes (A.R.S.) § 45-437 (B), irrigation within the Harquahala INA is limited to "acres of land that were irrigated at any time during the five years preceding the date of the notice of the designation procedures to establish the INA." Until 2000, the laws governing water use within an INA did not restrict the use of groundwater or other sources of water for uses other than irrigation. In 2000, A.R.S. § 45-440 was enacted, which imposes restrictions on withdrawals of more than 100 acre feet of groundwater per year for commercial or industrial purposes. A.R.S. § 45-440 (A) requires that groundwater for such purposes be withdrawn "from land that is eligible to be irrigated pursuant to § 45-437, subsection B."

Allegheny has acquired 2,734.5 acres of farmland in the Harquahala Valley, 2,319.4 of which are eligible for irrigation as defined by A.R.S. § 45-437 (B). Allegheny intends to manage these lands so that they are not irrigated with groundwater during the period of the Project. The land may be irrigated with CAP water to maintain its existing agricultural use. Allegheny's use of groundwater for operational purposes of the Project would be in compliance with A.R.S. § 45-440 (A), which provides for withdrawals of groundwater for commercial or industrial uses in an



amount of 6 acre-feet in any year or a maximum of 30 acre-feet for any period of 10 consecutive years

Allegheny is in the process of purchasing the land in the southwest quarter of Section 1, Township 2 North, Range 11 West, and plans to acquire the rest of the land in Section 1 through a land exchange with the Bureau of Land Management (BLM). This property would be used for the production well field and a temporary staging area for construction equipment during construction of the plant.

Table 1 of this addendum lists the cadastral location, total number of acres and irrigable acres per property, ADWR registry number for irrigated grandfathered rights appurtenant to the properties, and wells located on the Allegheny properties. Figure 1 shows the location of the properties and associated wells on each property.

3.2 HYDROGRAPHS FROM NEARBY WELLS

Six hydrographs were constructed from six existing wells and included in the CEC application and water supply report to present an overview of water level trends throughout the basin. Five of the six wells were located in the southeastern portion of the Harquahala basin and one was located approximately two miles northwest of the La Paz Generating Plant site. All six of these wells had at least 25 years of recorded water levels.

During the August 22 meeting, Mr. Mason requested that additional hydrographs be produced for wells within the near vicinity of the Project. Figure 2 of this Addendum presents six hydrographs from wells located within 4 miles of the Project. The trend of the water levels in all six wells shows a slow but steady decrease in water levels over the past 40 years. The average rate of decline for the six wells shown in Figure 2 is 1.8 feet per year.

3.3 HISTORICAL PUMPAGE IN THE HARQUAHALA BASIN

According to D.G. Metzger (Metzger, 1957), the first successful irrigation well in the Harquahala Basin was completed in 1951. By 1954, numerous wells had been drilled and the annual groundwater pumpage increased from an estimated 1,000 af/yr in 1949 to 33,000 af/yr in 1954. Groundwater pumpage for agricultural irrigation continued to increase steadily to a maximum of 200,000 af/yr in years 1961 through 1964. Estimated pumpage for the Harquahala Basin from 1940 through 2000 is shown on Figure 3 of this Addendum.

In 1985, the Central Arizona Project (CAP) completed a canal system that conveys water from the Colorado River through the Harquahala Basin to Phoenix and Tucson. The introduction of



CAP water to the Harquahala Basin for agricultural irrigation is the major contributing factor for the decline in groundwater pumpage from 1985 to the present.

Pumpage figures from 1940 through 1984 shown on Figure 3 are estimated numbers produced by the U.S. Geological Survey (USGS) and the Arizona Public Service. Beginning in 1984, ADWR required all non-exempt well owners in an INA to report annual groundwater pumpage amounts to the agency, and hence, pumpage figures from 1985 through 2000 are reported numbers obtained from ADWR.

Due to an error in data retrieval from ADWR, the total 1999 reported groundwater pumpage for the Harquahala Basin stated in Section 2.5 of the water supply report and on page B-3-11 of the CEC, is incorrect. The correct total reported groundwater pumpage for the Harquahala Basin in 1999 was 22,887.28 ac/ft. The total reported groundwater pumpage for the year 2000 was 27,355.09 ac/ft. (The 2000 data was not available from ADWR at the time the water supply report was being compiled.)

Pumpage figures specific to Townships 2 and 3 North, Ranges 10 and 11 West are presented in the table below. Pumpage figures by township-range could only be obtained from the 1984 through 2000 ADWR data as the USGS estimated pumpage figures were for the entire basin and not broken down by township-range.

Year	Reported Groundwater Pumpage (acre-feet/year)
1984	0
1985	7,434.14
1986	2.93
1987	3,910.63
1988	0
1989	0
1990	0
1991	0
1992	0
1993	3,396.63
1994	1,680.78
1995	1,032.38
1996	4,232.34
1997	7,413.88
1998	1,282.52
1999	0
2000	5.0



The total amount of groundwater pumped from Townships 2, 3 North, Ranges 10, 11 West for the years 1984 through 2000 is 30,401.23 acre-feet, 99 percent of which was used for agricultural irrigation. A total of ten wells contributed to the above pumpage figures:

(B-02-11) 02bbb	(B-03-11) 08cab	(B-03-11) 23ccb
(B-03-11) 31cbb	(B-03-11) 34aba	(B-03-11) 34bbb
(B-03-11) 34bcc	(B-03-11) 36baa	(B-03-11) 36bbb
(B-03-11) 36cbb		

3.4 ADDITIONAL SCENARIO FOR GROUNDWATER MODEL

3.4.1 Water Level Drawdown Modeling

Water level drawdown from the proposed Project production wellfield of five wells was modeled by HydroSystems, Inc. (HydroSystems, Inc., 1999) to estimate the incremental drawdown from the wellfield for the projected 30-year life of the power plant. A discussion of the conceptual model, assumptions, specific parameters, results, and illustrated figures are presented in the CEC application and water supply report. Water level drawdown was analyzed using the modular three-dimensional finite difference groundwater flow model MODFLOW.

3.4.2 Simulated Scenarios

Three different scenarios are presented in the CEC application and water supply report to determine the impact of the pumping by the Project wellfield. Scenario 1 simulated 1997 groundwater conditions for 34 years into the future, until 2032. Scenario 1 was used as a "base case" to which the other two scenarios were compared in order to determine impacts on groundwater. Scenario 2 was a continuation of Scenario 1 with the addition of pumping from the Allegheny Energy production wells from 2002 to 2031, a 30-year time period of operation. The five Allegheny Energy production wells were simulated to be pumping at a rate of 868 gallons per minute each, a total of 7,000 af/yr. Scenario 2 acted as a "worst case," where the pumping rate was at a maximum with no attempt to mitigate the effects of the pumping.

Scenario 3 simulated the same conditions from Scenario 1 plus the pumping from the Allegheny Energy production wells (Scenario 2), but had the addition of recharge from the nearby Vidler Recharge Facility. Scenario 3 acted as a "best case" where the impacts of pumping were minimized due to the significant recharge volumes at the nearby Vidler Recharge Facility. The recharge rate from the Vidler Recharge Facility was modeled in increasing increments, beginning at 5,000 af/yr in 2002 to 70,000 af/yr in 2006 through 2031.



The results of Scenario 1 indicate that if groundwater pumping and recharge in the Harquahala basin were to continue at the current rate for the next 30 years, groundwater levels would decline between 20 to 40 feet in the vicinity of the Project and increase 50 to 70 feet in the southeastern portion of the basin. The resulting water levels in Scenario 2 indicate that the pumping from the five Allegheny production wells will create an additional 30 feet of drawdown in the immediate vicinity of the wellfield after 30 years. Wells located 3 to 5 miles from the production wellfield will experience water level declines of 20 feet in addition to the drawdown predicted in Scenario 1. For Scenario 3, the model predicts a net water level increase of 300 feet in the immediate vicinity of the Vidler Recharge Facility and a net increase of 150 to 175 feet in the area of the Allegheny wellfield. The recharge mound is projected to extend across the entire Harquahala basin, with a minimum increase of less than 25 feet in the southeastern portion of the basin.

3.4.3 Scenario 4

During the August 22, 2001 meeting with ADWR, Mr. Mason requested that the a fourth scenario be modeled, using a maximum of 30,000 af/yr of artificial recharge instead of 70,000 af/yr. All other assumptions, stresses, and parameters remained the same as used in Scenarios 1, 2, and 3.

The result of Scenario 4, in which the five Allegheny production wells would pump 7,000 af/yr for 30 years and the nearby Vidler Recharge Facility would recharge CAP water at a maximum of 30,000 af/yr, was a net water level increase of 25 feet in the immediate vicinity of the production wellfield.

The HydroSystems, Inc. modeling addendum, which presents a discussion of Scenario 4 and accompanying figures and tables, is included in Appendix A of this report.



4.0 REFERENCES

HydroSystems, Inc. 1999. Harquahala Valley, Maricopa and La Paz Counties, Numerical Ground-water Flow Model; consultant report prepared for Vidler Water Company. December, 1999.

Metzger, D.G. 1957. Geology and ground water resources of the Harquahala Plains Area, Maricopa and Yuma Counties; Arizona State Land Department, Water Resources Report 3.

URS, 2001. Water Supply Report for the La Paz Generating Facility: URS Corporation, June 2001.



TABLES

TABLE 1

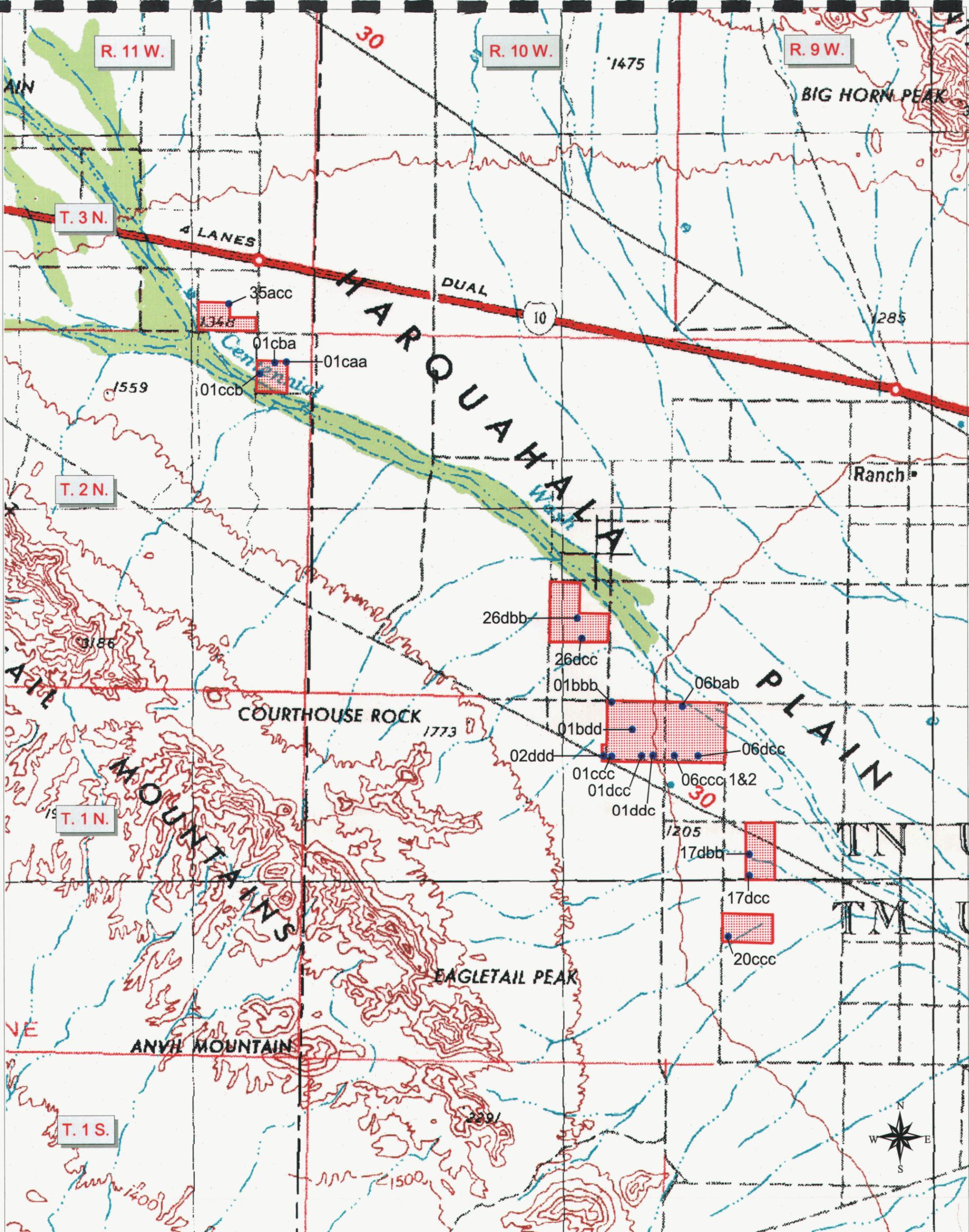
ALLEGHENY PROPERTIES IN HARQUAHALA VALLEY

Township/Range	Section	Number of Acres in Parcel	Irrigation Grandfathered Right	Irrigable Acres	Wells on Property	ADWR Well Registration Number
T 1 N, R 9 W	Section 6	640	60-201040.0004	636.4	(B-01-09) 06bab	55-624942
					(B-01-09) 06ccc ₁	55-624941
					(B-01-09) 06ccc ₂	55-624938
					(B-01-09) 06dcc	55-624943
	E ½ of section 17	320	60-201184.0001	317.5	(B-01-09) 17dbb	55-627796
					(B-01-09) 17dcc	55-627797
T 1 N, R 10 W	S ½ of section 20	320	60-201172.0004	305.5	(B-01-09) 20ccc	55-635436
					(B-01-10) 01bbb	55-624940
	Section 1	640	60-201040.0004	640	(B-01-10) 01bdd	55-624939
					(B-01-10) 01ccc	55-624935
	SE 1/8 of section 2	14.5		0	(B-01-10) 01dcc	55-624937
					(B-01-10) 01ddc	55-624936
					(B-01-10) 02 ddd	55-556810 ¹
					No wells	
T 2 N, R 10 W	E ½ of section 26	320	60-201357.0001	160	(B-02-10) 26dbb	55-607665
					(B-02-10) 26dcc	55-607665
T 2 N, R 11 W	SW ¼ of section 1	160	60-201125.0003	100	(B-02-11) 01caa	55-579334
					(B-02-11) 01cba	55-501105
T 3 N, R 11 W ²	S ½ of S ½ of section 35	160	60-201357.0001	160	(B-02-11) 01ccb	55-579335
					(B-03-11) 35acc	55-564182
Totals:		2,734.5		2,319.4		

¹ Owner of this well is El Paso Natural Gas.

² Property under option to purchase.

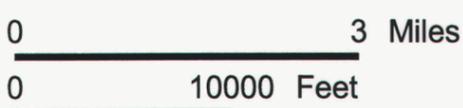
FIGURES



Legend

-  Allegheny Property
-  Water Well (may be more than one well per 10-acre parcel)

Map Scale 1:100,000



General Project Location In Arizona



**Allegheny Properties
in Harquahala Valley and
Associated Wells**

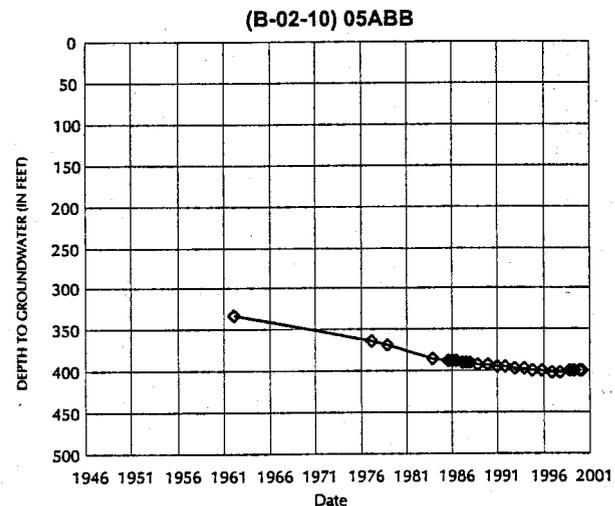
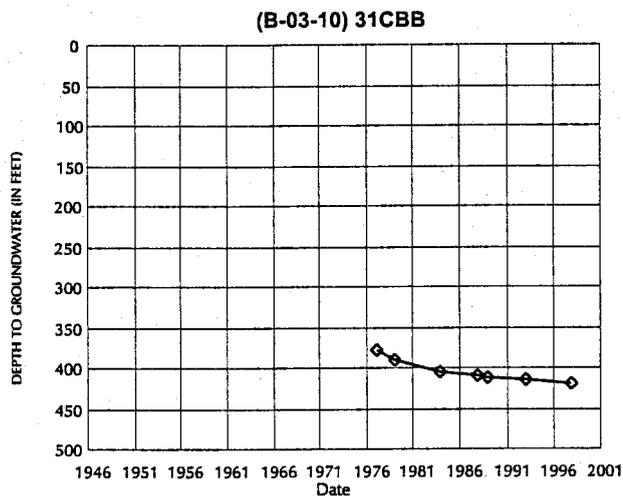
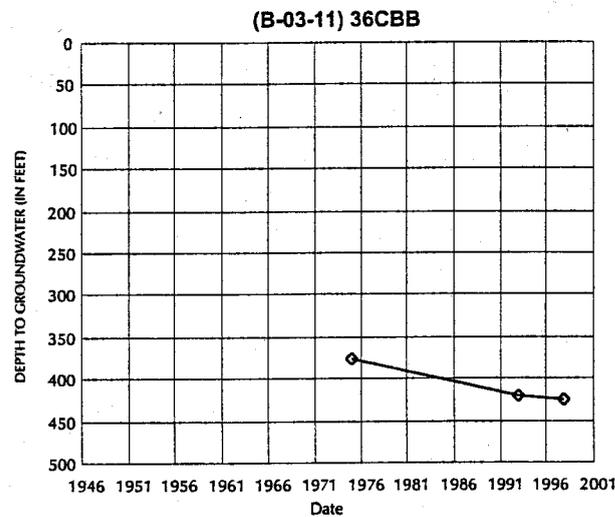
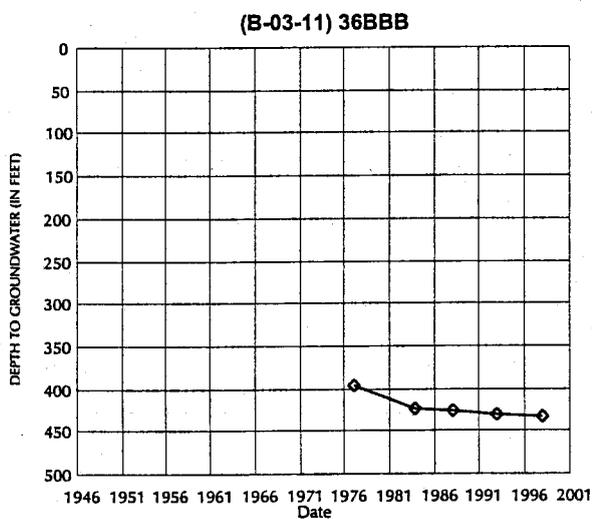
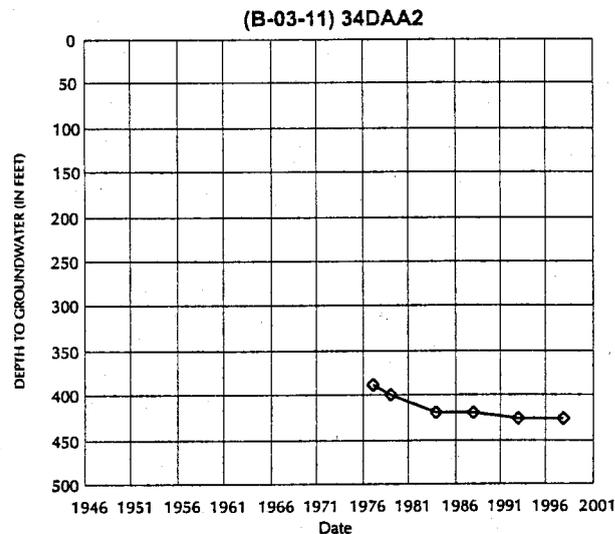
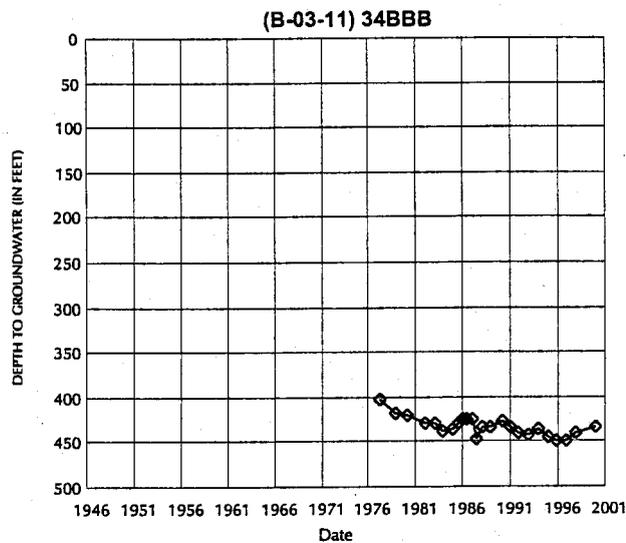
La Paz Generating Facility

Figure 1

Map Revision Date: September 11, 2001

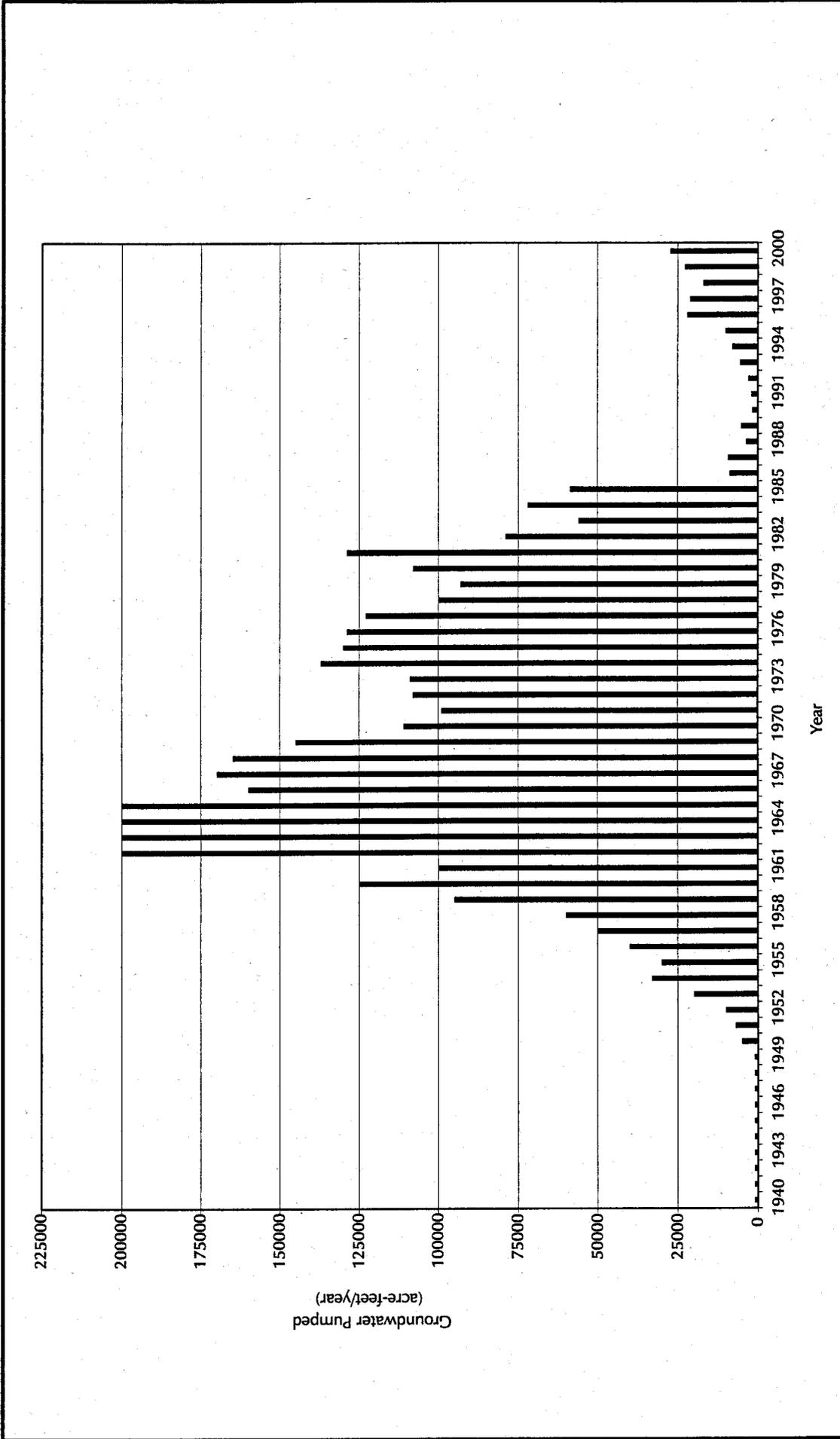


Sources:
USGS, Phoenix 1x2 Degree Quadrangle, Revised 1969.



HYDROGRAPHS OF SIX WELLS
WITHIN 4 MILES OF THE PROJECT
La Paz Generating Facility

A15046.DWG 9-13-01



HISTORICAL GROUNDWATER PUMPAGE
FOR THE HARQUAHALA VALLEY
La Paz Generating Facility

APPENDIX A

ADDENDUM TO THE HARQUAHALA VALLEY MODELING REPORT

PREPARED BY HYDROSYSTEMS, INC.

**Addendum to the
Harquahala Valley
Modeling Report**

Prepared for:

**Allegheny Energy Supply
McDowell Road Professional Plaza
14122 West McDowell Road – Suite 201
Goodyear, AZ 85338**

Prepared by:

**HydroSystems, Inc.
1220 S. Park Lane, Suite 5
Tempe, AZ 85281
Phone: 480-517-9050 fax: 480-517-9049
e-mail: info@hydrosystems-inc.com**

August 29, 2001

TABLE OF CONTENTS

1.0	Introduction.....	3
1.1	Scenario 1	3
1.2	Scenario 4	5
1.3	Conclusions.....	10

LIST OF FIGURES

Figure 1.	Scenario 1 Change in Water Levels from 1997 to 2031.....	4
Figure 2.	Scenario 4 Simulated Water Levels December 2031 Including Allegheny Energy Supply Pumping and Reduced Vidler Recharge	8
Figure 3.	Scenario 4 Impact (Drawdown) of Allegheny Energy Supply Pumping with Reduced Vidler Recharge....	9

LIST OF TABLES

Table 1.	Vidler Recharge Facility Proposed Recharge Schedule with Reduced Volumes	7
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1.0 INTRODUCTION

This Addendum to the Harquahala Valley Modeling Report acts as a supplemental attachment to the Harquahala Valley Modeling Report, and is not intended to be a stand alone document. However, figures and tables produced in this document are labeled independently. In order to avoid confusion between the two documents, all references to figures and tables in the Harquahala Valley Modeling Report are produced in **bold** type, and all references to figures and tables in this document are *italicized*.

Not all of the scenarios of the Harquahala Valley Modeling Report are being addressed in this addendum. One figure is being added to **Scenario 1** for clarification purposes, and Scenario 4 is being added, by way of this document, to further emphasize the impacts of the Vidler Recharge Facility on water levels in the location of the proposed Allegheny Energy Supply wells. The content of this document is in no way a revision of the findings and conclusions of the Harquahala Valley Modeling Report.

1.1 SCENARIO 1

Scenario 1 is a continuation of the transient analysis from 1997 to 2032. The purpose of **Scenario 1** is to act as a "base case" to which all other scenarios can be compared. The stresses in the model from 1997 were held constant for 34 years, from 1997 through 2031. In addition to the water levels displayed in **Figure 2** of the Harquahala Valley Modeling Report, it is important to show the change in water levels from the beginning to the end of **Scenario 1**.

For clarification purposes *Figure 1* is displayed below. *Figure 1* shows the simulated changes in water levels from 1997 to 2032, which were not displayed in the Harquahala Valley Modeling Report. Water levels in the northern portion of the basin show a decline of more than 30 feet for the 34 year simulation, while water levels in the southern portion of the basin show a rise of greater than 90 feet over the same time period. Declines in the northern portion of the basin are indicative of the continued small scale agricultural pumping in that area. The rise of the water levels in the southern portion of the basin are indicative of the aquifer's recovery from the large historical groundwater withdrawals in that area, which have recently been reduced.

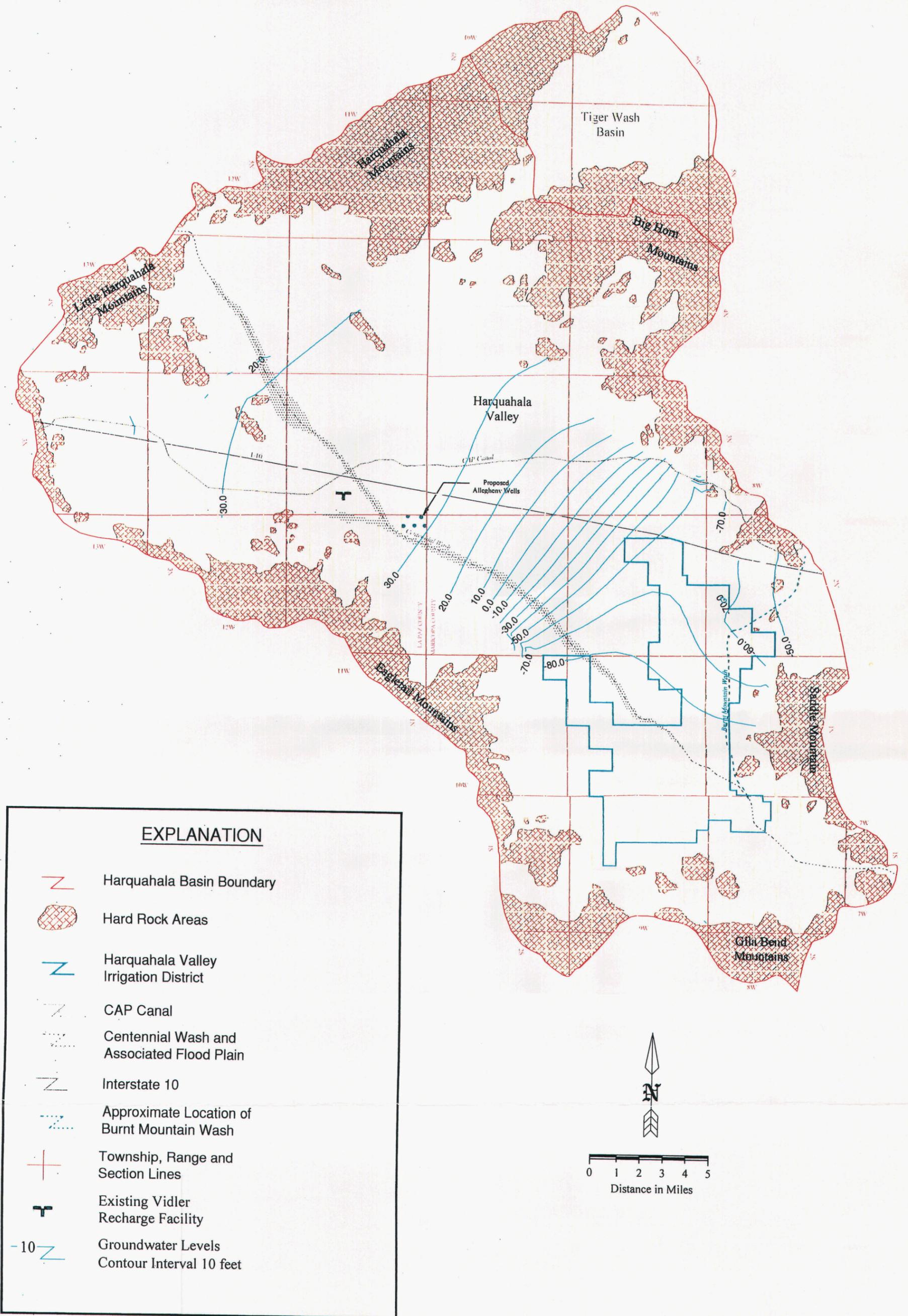


Figure 1

Scenario 1 Change in Water Levels from 1997 to 2032

1.2 SCENARIO 4

Scenario 4 is a continuation of the transient analysis from 1997 through 2031 with the addition of pumping by Allegheny Energy Supply and recharge from the nearby Vidler Recharge Facility. However, unlike Scenario 3 of the Harquahala Valley Modeling Report, the simulated recharge volumes at the Vidler Recharge facility have been reduced. This analysis takes into account the following assumptions:

- Time frame for the analysis: December 1997 through December 2031 .
 - Initial heads: December 1997 model calculated heads.
 - All stresses (i.e. pumping, recharge, etc.) simulated at the end of 1997 remain constant throughout the entire simulation.
 - Five Allegheny Energy Supply wells added, each pumping 868 gallons per minute (gpm) beginning in 2002 and continuing through 2031.
 - Additional recharge from the Vidler Recharge Facility beginning in 2002 at 5,000 acre feet per year (ac-ft/yr) and incrementally increasing to a maximum of 30,000 ac-ft/yr in 2005, and continuing through 2031.
-

Scenario 4 is a conservative modification to the "best case" analysis provided in Scenario 3, where the impacts from pumping by Allegheny Energy Supply were essentially non-existent due to the large volumes of water recharged at the nearby Vidler Recharge Facility. Just as in the Scenario 3, all stresses and boundary conditions at the end of 1997 remain constant through the 34 year simulation period until December 2031. Also as in Scenario 3, an additional 7,000 ac-ft/yr of pumping by Allegheny Energy Supply is included. However, unlike Scenario 3, Scenario 4 incorporates artificial recharge of up to only 30,000 ac-ft/yr at the Vidler Recharge Facility.

Consistent with Scenarios 2 and 3, the pumping by Allegheny Energy Supply is attributed to 5 wells, each pumping at a rate of 868 gpm for 30 years. The wells were assumed to be screened only in layer 2, thereby only withdrawing water from layer 2. The simulated pumping begins in 2002 and continues through 2031. The 5 new wells are located in Section 1

of Township 2 North and Range 11 West and are arranged within Section 1 as shown in *Figure 2* of the Harquahala Valley Modeling Report.

The Vidler Recharge Facility is located near the proposed Allegheny Energy Supply site, in Section 33 of Township 3 North and Range 11 West. The recharge facility is permitted for a maximum recharge volume of 100,000 ac-ft/yr. Although the recharge facility is permitted for 100,000 ac-ft/yr, Scenario 4 simulates an incrementally increasing recharge rate maximized at a conservatively low 30,000 ac-ft/yr. This is in essence a "worst-case" scenario for the recharge facility. The maximum simulated recharge volume of 30,000 ac-ft/yr, reached in 2005, was continued through the end of Scenario 4 (December 2031). *Table 1* displays the simulated recharge schedule for Scenario 4.

The simulated water levels in layer 1 after the 30 years of additional pumping and recharge are displayed in *Figure 2*. The impact of the Allegheny Energy Supply wells was determined by subtracting the water levels in layer 1, at the end of Scenario 4 from the water levels in layer 1 at the end of **Scenario 1** of the Harquahala Valley Modeling Report. The difference between the two water levels is the impact (or drawdown) from the Allegheny Energy Supply wells. *Figure 3* shows the drawdown in the vicinity of the Allegheny Energy Supply wells. It is important to note that the drawdown shown in *Figure 3* is negative, thus indicating a rise in water level (much like results of **Scenario 3**). Simulated water levels rise approximately 25 feet in the location of the proposed Allegheny Energy Supply's wells. The effects of pumping by Allegheny Energy Supply are still not apparent when considered with the reduced volume of water recharged at the Vidler Recharge Facility.

Table 1. Vidler Recharge Facility Proposed Recharge Schedule with Reduced Volumes

Year	Recharge Quantity (acft/yr)	Recharge Quantity (ft ³ /yr)	Recharge Quantity (ft ³ /day)	Recharge Rate (ft/day)	Recharge Rate (ft/s)
2002	5000	2.178E+08	596712.33	0.03395	3.9297E-07
2003	10000	4.356E+08	1193424.66	0.06791	7.8594E-07
2004	25000	1.089E+09	2983561.64	0.16976	1.9649E-06
2005	30000	2.178E+09	5967123.29	0.33953	3.9297E-06
2006	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2007	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2008	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2009	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2010	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2011	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2012	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2013	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2014	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2015	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2016	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2017	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2018	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2019	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2020	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2021	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2022	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2023	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2024	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2025	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2026	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2027	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2028	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2029	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2030	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2031	30000	3.049E+09	8353972.60	0.47534	5.5016E-06
2032	30000	3.049E+09	8353972.60	0.47534	5.5016E-06

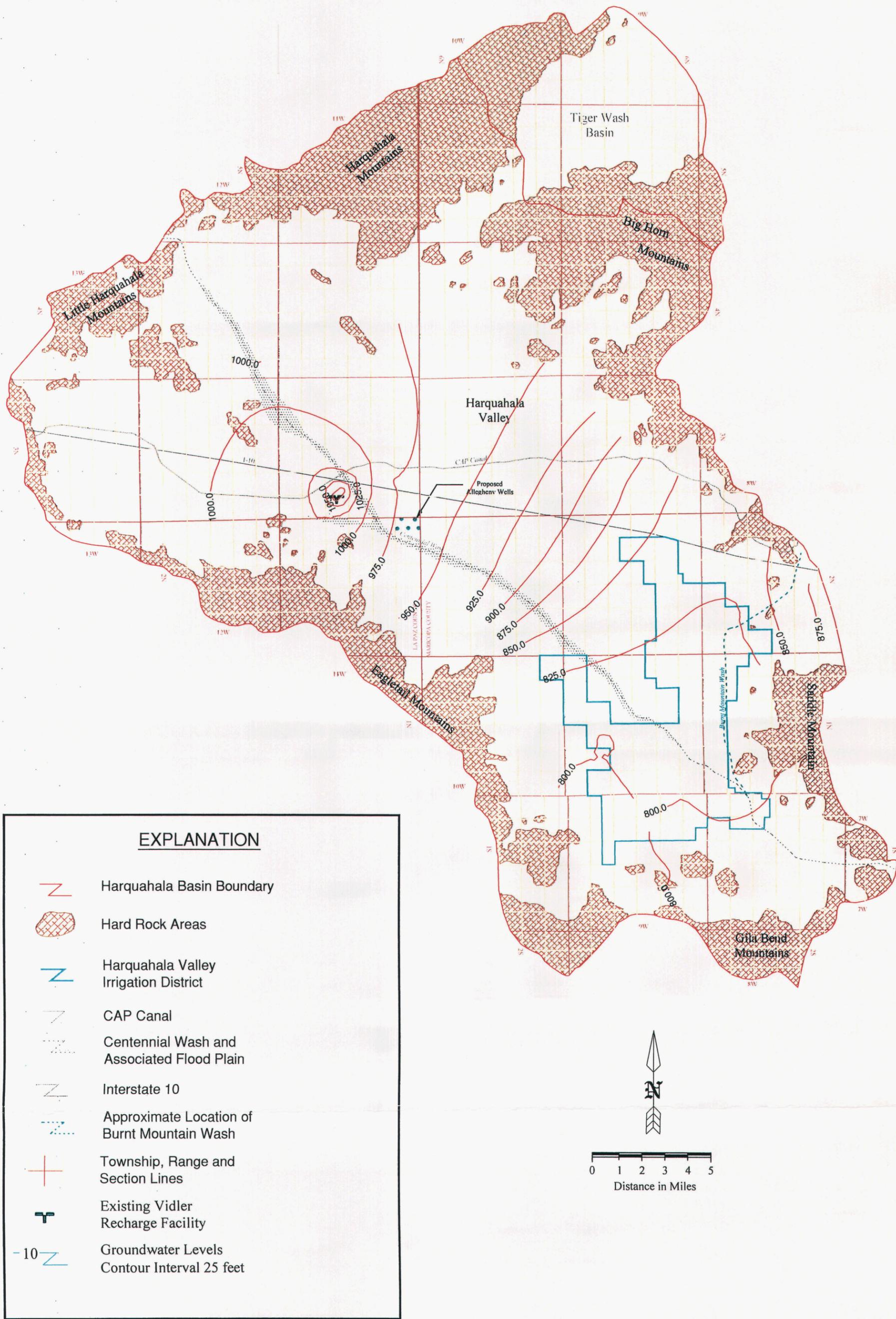


Figure 2

Scenario 4 Simulated Water Levels
 December 2031 Including Allegheny Power
 Company Pumping and Reduced Vidler Recharge

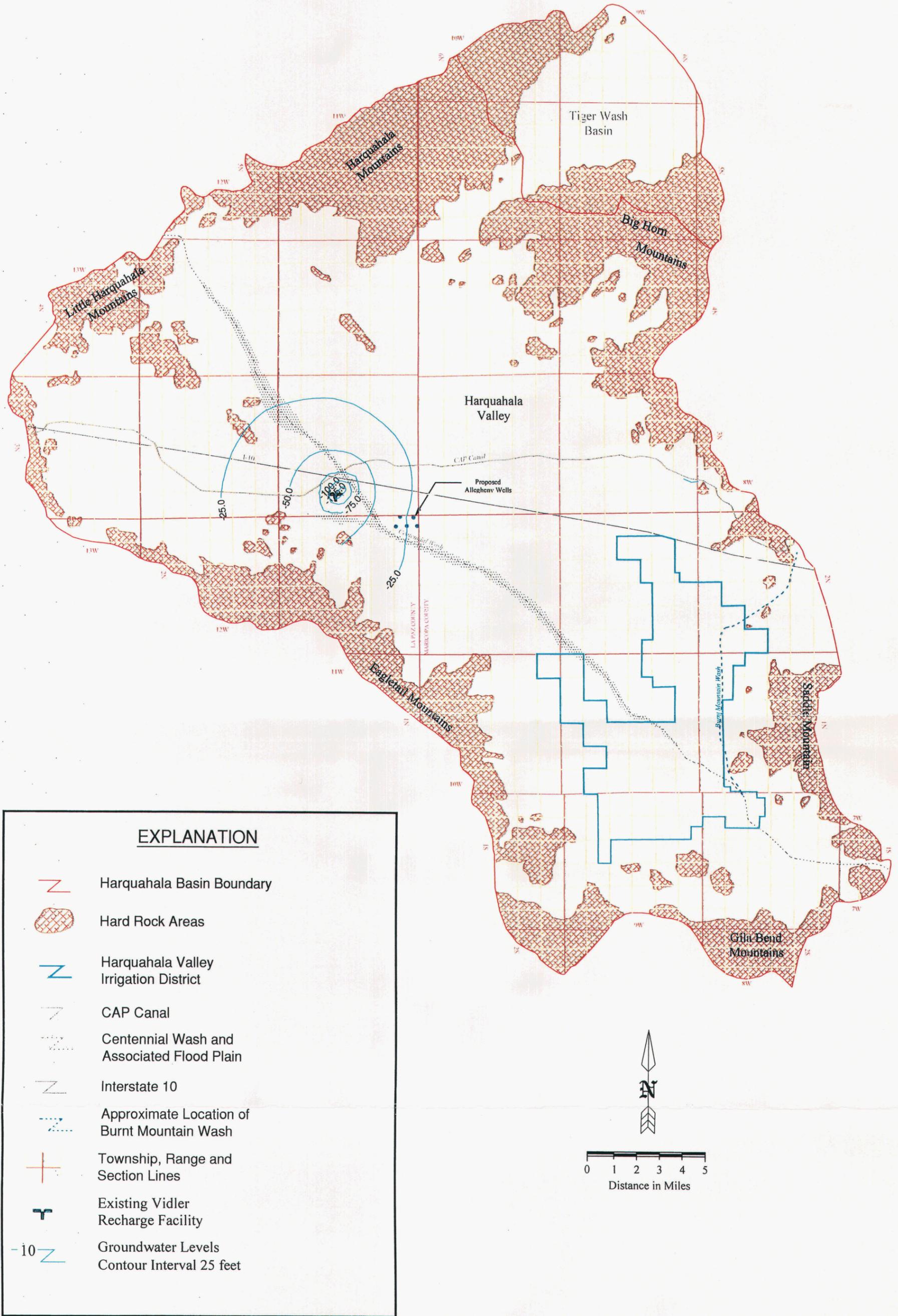


Figure 3

Scenario 4 Impact (Drawdown) of Allegheny Power Company Pumping with Reduced Vidler Recharge

1.3 CONCLUSIONS

Looking at the best circumstance, because of the potentially large volume of recharge water entering the Vidler Recharge Facility, impacts of pumping from Allegheny Energy Supply wells are virtually negligible. Even when considering a significantly reduced recharge volume at the Vidler Recharge Facility (30% of the permitted volume), Allegheny Energy Supply's pumping is still negligible.

On the other hand, looking at the less ideal circumstance where recharge is not taken into account, the maximum drawdown by the Allegheny Energy Supply wells was calculated to be less than 31 feet (30.73 feet) for 30 years of operation. Combining the slow decline of water levels in the northern portion of the Harquahala Valley (less than 1 foot per year) with the drawdown caused by Allegheny Energy Supply pumping (slightly greater than 1 foot per year), the gross maximum simulated decline in water levels is approximately 2 feet per year. Over the 30 year simulation period, this drawdown is not a significant impact to the groundwater system.