

**WATER SERVICE FOR THE
LILAC HILLS RANCH COMMUNITY
IN THE
VALLEY CENTER
MUNICIPAL WATER DISTRICT**

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CHAPTER 1

INTRODUCTION

This report provides an overview of water service for the Lilac Hills Ranch Community in the Valley Center Municipal Water District (District). This report will develop water demands for the project, recommend required on-site facilities to accommodate the projected demands, and present off-site facility improvements needed to accommodate the project's water demands. This report will also discuss phasing of on-site facilities and options for reconstruction of the Country Club Reservoir. The Water Supply Assessment and Verification for the Lilac Hills Ranch Community was adopted by the District Board of Directors on October 15, 2012. The findings (Chapter 2) of the Water Supply Assessment and Verification are provided in Appendix A.

PROJECT OVERVIEW

The proposed Lilac Hills Ranch Community is approximately 608 acres and is comprised of approximately 59 contiguous properties. The project is located in northern unincorporated San Diego County approximately 3/4 of a mile east of the Interstate 15 corridor. Access to the property is off of the Old Highway 395 Interchange at West Lilac Road. The project site is located to the south and west of West Lilac Road with State Route 76 to the north, downtown Valley Center 10 miles to the east, Escondido is seven miles to the south, and Interstate 15 and Old Highway 395 to the west.

The Lilac Hills Ranch Community is located entirely in the Escondido zip code 92026 and is situated primarily within the westernmost portion of the Valley Center Community Planning Area (CPA) and the eastern most portion of the Bonsall Subregional Plan Area. From the northwest project corner, West Lilac Road serves as the northern and eastern boundary of the project site, while Circle R Drive is less than 1/2 mile south of the project boundary. From the southwest project corner, the western boundary of the project runs along Shirey Road and extends to Standel Lane, which serves as the northwestern project boundary.

The project is within Township 10 South, Range 3 West, Section 24, and Township 10 South, Range 2 West, Sections 19 and 30, on the USGS 7.5' Pala and Bonsall quadrangles.

DEVELOPMENT PLAN

The Lilac Hills Ranch Community proposes the development of a new mixed use master planned community. The proposed Specific Plan includes a maximum of 1,746 homes with varying lot sizes, a neighborhood-serving commercial village center, an active park/village green, retail uses, and a school site. A Rezone is proposed to implement the Specific Plan by changing the existing Use Regulations, Development Regulations, and Special Residential Land Use Designation and the A70 (Limited Agricultural) Zoning. The project would also include the submittal of a Master Tentative Map, Implementing Tentative Map, Site Plan(s), and/or Major Use Permit(s).

Additionally, there are sixteen existing homesites within the project which are anticipated to remain. These parcels currently receive water service from the District, but rely on septic systems for sewer service. Some of the existing water services may be relocated and/or meter capacities may be relocated. The Developer of the Lilac Hills Ranch Community is also planning to install water and wastewater infrastructure for six parcels located within or adjacent to the perimeter of the project, but which are not part of the project. These six parcels presently receive water service from the District (some of which may be relocated for construction purposes) and rely on septic systems for sewer service.

TOPOGRAPHY

The existing topography on the property ranges in elevation from a low of approximately 640 feet to a high of approximately 920 feet. The topography varies over the project site but generally the site drainage flows from northeast to south west. The high point of the project is along West Lilac Road at the north end of the project.

WATER SERVICE

The Lilac Hills Ranch Community is located within the boundaries of the District, and potable water service to the Lilac Hills Ranch Community will be provided by the District. The District has existing water transmission, storage, and distribution facilities in the vicinity of the proposed community. The Lilac Hills Ranch Community will construct all the on-site water distribution system facilities necessary to provide adequate water service to the project. This report will provide information on the proposed on-site and off-site water facilities that are needed for the development of the Lilac Hills Ranch Community.

CHAPTER 2

DESIGN CRITERIA

This chapter presents the design criteria used in planning the water facilities for the Lilac Hills Ranch Community. Unless otherwise noted, the criteria utilized in this report are taken from the “Valley Center Municipal Water District, Water Master Plan,” dated April 2002 and prepared by the District with the assistance of Boyle Engineering Corporation. The design criteria are used for analysis of the proposed on-site water system as well as for design and sizing of proposed off-site water line extensions and pumping and storage facilities to accommodate the projected water demands for the proposed development project.

Water Demands

The water demand factors used to project average water use for the Lilac Hills Ranch Community are summarized in Table 2-1.

TABLE 2-1 WATER DEMAND FACTORS			
Land Use	Acres	Units	Factor
Single Family Detached	156.9	903	500 gpd/DU
Single Family Senior	76.9	468	300 gpd/DU
Single Family Attached	7.9	164	433 gpd/DU
Commercial/Mixed Use	17.3	211	4,500 gpd/ac
Water Reclamation	2.4	-	2,333 gpd/ac
Recycled Facility/Trail Head	0.6	-	1,667 gpd/ac
Detention Basin	7.9	-	1,667 gpd/ac
School	12.0	-	2,333 gpd/ac
Community Purpose Facility	2.0	-	2,333 gpd/ac
Group Residential/Care Group Care	6.5	-	2,333 gpd/ac
Institutional	10.0	-	2,333 gpd/ac
Park	23.6	-	1,667 gpd/ac
Biological Open Space	104.1	-	--
Non-Circulating Road	45.7	-	--
Circulating Road	37.6	-	--
Common Areas/Ag	20.3	-	2,500 gpd/ac
Manufactured Slopes/Wet	76.3	-	2,500 gpd/ac

Weather Storage			
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Peaking Factors

To convert Average Daily water demand to Maximum Day demands, a peaking factor of 2.2 is used based upon the Peaking Factor curves on Figure 8 of the Water Master Plan, April 2002. Appendix A includes a copy of the peaking factor curves showing how the peaking factors are obtained. The peaking factor for Peak Hour demand was determined in the same way. The peaking factor for Average Day demand to Peak Hour demand is 5.0.

Fire Flows

The fire flow requirements vary by the type of development which is planned. Low-density residential development typically requires a fire flow of 1,500 gpm at 20 psi residual for a 2-hour duration. High-density residential generally increases to 2,500 gpm for 2 hours duration. For schools, fire flow requirements become dependent upon the size of the buildings and the type of construction materials used. In addition, fire sprinkler systems which are included in present day construction allow for a reduction in the total fire flow requirement. For planning purposes, a fire flow requirement of 2,500 gpm for a 2-hour duration is appropriate for school uses. A minimum residual pressure of 20 psi at the fire flow location is a standard requirement.

System Pressures

The potable water distribution system is designed to maintain static pressures between 60 psi and 200 psi. The potable water distribution system is designed to supply a minimum of 40 psi residual pressure at any location under peak hour demand flows, and a minimum residual pressure of 20 psi during maximum day demand plus fire flow conditions. Potable water mains are sized to maintain a maximum velocity of 15 feet per second under a maximum day plus fire flow scenario and a maximum velocity of 8 feet per second under peak hour flow conditions.

CHAPTER 3

PROJECTED WATER DEMANDS

Based on the water use factors presented in Chapter 2 and the proposed development plan for the Lilac Hills Ranch Community, Table 3-1 provides the projected water use for the project. Table 3-2 presents the anticipated water use by the project considering the water conservation measures the project is planning to utilize.

TABLE 3-1 ESTIMATED WATER DEMANDS WITHOUT CONSERVATION ¹					
Land Use	Acres	Units	Water Use Based on Alternate Demand Factors		
			Factor	Use, gpm	Use, gpd
Single Family Detached	156.9	903	500 gpd/DU	313.54	451,500
Single Family Senior	76.9	468	300 gpd/DU	97.50	140,400
Single Family Attached	7.9	164	433 gpd/DU	49.31	71,012
Commercial/Mixed Use	17.3	211	4,500 gpd/ac	54.06	77,850
Water Reclamation	2.4	-	2,333 gpd/ac	3.89	5,599
Recycled Facility/Trail Head	0.6	-	1,667 gpd/ac	0.69	1,000
Detention Basin	7.9	-	1,667 gpd/ac	9.15	13,169
School	12.0	-	2,333 gpd/ac	19.44	27,996
Community Purpose Facility	2.0	-	2,333 gpd/ac	3.24	4,666
Group Residential/Care <u>Care</u>	6.5	-	2,333 gpd/ac	10.53	15,165
Institutional	10.0	-	2,333 gpd/ac	16.20	23,330
Park	23.6	-	1,667 gpd/ac	27.32	39,341
Biological Open Space	104.1	-	--	-	-
Non-Circulating Road	45.7	-	--	-	-
Circulating Road	37.6	-	--	-	-
Common Areas/Ag	20.3	-	2,500 gpd/ac	35.24	50,750
Manufactured Slopes/Wet Weather Storage	76.3	-	2,500 gpd/ac	132.47	190,750
TOTAL, gpd	608.0	1,746		772.59	1,112,528
TOTAL, AFY					1,246

¹ Appendix B - Provides back-up for this table. These numbers will be used to plan the piping system.
gpm = gallons per minute, gpd = gallons per day, AFY = acre – feet per year

**TABLE 3-2
ESTIMATED WATER DEMANDS WITH CONSERVATION**

Land Use	Acres	Units	Water Use Based on Alternative		
			Factor	Use, gpm	Use, gpd
Single Family	156.9	903	500 gpd/DU	235.16	338,625
Single Family	76.9	468	300 gpd/DU	73.13	105,300
Single Family	7.9	164	433 gpd/DU	36.99	53,259
Commercial/Mixed Use	17.3	211	4,500 gpd/ac	40.55	58,388
Water Reclamation	2.4	---	2,333 gpd/ac	2.92	4,199
Recycled Facility/Trail Head	0.6	---	1,667 gpd/ac	0.52	750
Detention Basin	7.9	---	1,667 gpd/ac	6.86	9,877
School	12.0	---	2,333 gpd/ac	14.58	20,997
Community Purpose Facility	2.0	---	2,333 gpd/ac	2.43	3,500
Group Residential/Care <u>Group Care</u>	6.5	---	2,333 gpd/ac	7.90	11,373
Institutional	10.0	---	2,333 gpd/ac	12.15	17,498
Park	23.6	---	1,667 gpd/ac	20.49	29,506
Biological Open Space	104.1	---	---	---	---
Non-Circulating Road	45.7	---	---	---	---
Circulating Road	37.6	---	---	---	---
Common Areas/Ag	20.3	---	2,500 gpd/ac	26.43	38,063
Manufactured Slopes/Wet Weather Storage	76.3	---	2,500 gpd/ac	99.35	143,063
TOTAL, gpd	608.0	1,746		579.44	834,396
TOTAL, AFY					935

Maximum day demand for the Lilac Hills Ranch Community is 1,275 gpm.

The peak hour demand for the Lilac Hills Ranch Community is 4.17 mgd or 2,898 gpm.

ALTERNATIVE SUPPLY SOURCES

The Lilac Hills Ranch Community would like to utilize up to five sources of water to meet project water needs. These sources are potable, recycled, groundwater, harvested rain water and harvested grey water. Each of these sources of water can be used for different purposes and the piping system for the project would need to be adapted to meet the sources of supply ultimately chosen for the project.

Types of Supply and Needs

Each of the five types of supply and their various uses and piping requirements are shown below.

Potable Supply. Potable supply can be used for any uses within the project but must be used for all indoor needs. With an air gap potable supply could be mixed with any other supply and put into any other piping system to provide make-up water. Potable water is the most expensive type of water. Potable water in the District is all imported from other areas of the state. Thus, alternate sources of supply will be utilized to try and reduce the reliance on imported water.

Harvested Rain Water. The project is considering the used of cisterns on each of the single family residences to capture rain water and utilized it for on-site irrigation of the single family homes. Although rain water could be used for irrigation on any portion of the project it is only being considered here for single family house irrigation because that is the only point that it is captured. Table 3-3 presents a calculation of the amount of available rain water that could be captured by the 903 single family units on site. Based on this table approximately 34 AFY could be available on this project.

<p style="text-align: center;">TABLE 3-3 LILAC HILLS RANCH SINGLE FAMILY HOMES RAIN WATER HARVESTING</p>	
<u>Assumptions</u>	
903 Units	
6,500 sq. ft per lot	
3,000 sq. ft of rooftop, 1,500 sq ft other hardscape, 2,000 sq ft landscaping	
Outdoor water use 112.5 gpd/unit	
Water rate \$3.3148 per unit	
13.2 inches of rain per year	
50% rain capture	
<u>Available Rain Water</u>	
903 units x 3,000 sq ft of rooftop x $\frac{13.2}{12}$	feet of
rainfall x 0.5 ÷ 43,560 sf/acre = 34 AFY	

Groundwater. Approximately 191 AFY of groundwater has been utilized historically on the project area. Groundwater in this area is not suitable for potable use but could be used for

irrigation and other outdoor uses on the site. The groundwater could be utilized in single family residences or in any other areas of the project.

Recycled Water. It is estimated that the project will demand approximately 312 AFY of recycled water. This water could be used for landscape irrigation in all areas of the project with the exception of single family homes. Make-up water to a recycled water piping system could come from the potable or groundwater system.

Grey Water. A grey water system could also be used to offset the potable exterior demand for residential units. Approximately 91 AFY of grey water could be utilized. The source of the grey water (81,270 gpd) assumes that grey water systems are installed on the 903 proposed single family detached homes within the project to collect shower and washing machine water.

Piping System Considerations

In order to utilize the various sources of water available to the project 2 or 3 piping systems would be needed. At a minimum a potable piping system will be installed throughout the project. A recycled piping system could also be installed throughout the project to meet all irrigation needs with the exception of single family homes. Single family homes could be irrigated with a combination of groundwater, rain water, and grey water through a third piping system. Three piping systems throughout the project would be prohibitively costly. Therefore various demand scenarios have been developed which are shown in Table 3-4. These scenarios require from 619 AFY of potable water to low of 307 AFY of water.

TABLE 3-4 LILAC HILLS RANCH WATER SUPPLY	
Scenario 1	
W/O rain water harvesting and using only recycled water generated from project	
Potable	432AFY
Recycled	312 AFY
Groundwater	191 AFY
TOTAL	935 AFY
Scenario 2	
With rain and grey water harvesting and using only recycled water generated from project	
Potable	307 AFY
Recycled	312 AFY
Groundwater	191 AFY

TABLE 3-4 LILAC HILLS RANCH WATER SUPPLY	
Rain water	34 AFY
Grey water	91 AFY
TOTAL	935 AFY
Scenario 3	
With rain and grey water harvesting and no recycled use	
Potable	619 AFY
Groundwater	191 AFY
Rain water	34 AFY
Grey water	91 AFY
TOTAL	935 AFY

Scenario 1 is water supply without rain water or grey water harvesting and using only recycled water generated by the project. Under this scenario, two piping systems will be put throughout the project and potable water would be used to irrigate single family residences. Recycled water and groundwater would be utilized to meet the remaining irrigation needs.

Scenario 2 utilizes rain water and grey water harvesting. Under this scenario three piping systems would be installed but only two would exist in any area of the project. In the single family area of the project a potable piping system and a groundwater piping system would be installed. Each single family home would have a cistern pump system to harvest rain water and grey water to irrigate the private lot. Supplemental water to meet the irrigation need would come from a community groundwater system. In areas that are not single family homes, a recycled water system would be installed to meet the irrigation needs.

In Scenario 3, the recycled water would be used off-site and dual piping would only be installed in the single family home area to distribute groundwater and supplement the rain water and grey water harvesting system.

The final decision of which one of these systems would be installed will be made after discussions with the District and upon further project development.

Value of Rain Water, Grey Water and Groundwater

As shown in Table 3-5 the value of the rain water if we assume its value at 75% of potable is

approximately \$36,820 a year. The value of the grey water is approximately \$98,548. The value of 191 AFY of groundwater is \$206,842 per year. The value of the groundwater could be utilized as an income source of the HOA. The wells could be located on HOA property and operated by the VCMWD. The water would be sold by the District to the single family residences and a portion of the water bill could be paid to the HOA as the Owner of the water right for the groundwater.

**TABLE 3-5
VALUE OF RAIN WATER, GREY WATER, AND GROUNDWATER**

Assume

\$1,082.94 per AF (75% of potable value)

Rain Water

34 AFY x \$1,082.94 = \$36,820

Grey Water

91 AFY x \$1,082.94 = \$98,548

Groundwater

191 AFY x \$1,082.94 = \$206,842

CHAPTER 4

EXISTING WATER FACILITIES

This chapter describes the existing water system facilities in the vicinity of the Lilac Hills Ranch Community. The majority of the existing water facilities are located outside the project boundary and will need to be extended to and within the Lilac Hills Ranch Community. These facilities will be discussed in more detail.

Existing Water System Background

The Lilac Hills Ranch Community is within the District and will obtain water service from the District. Upon its formation in 1954, the District joined the San Diego County Water Authority (SDCWA) and Metropolitan Water District of Southern California (MWD) to acquire the right to purchase and distribute imported water throughout its service area. The SDCWA has 23 member agencies, and is the regional wholesaler of imported waters. Member agency status entitles the District to directly purchase water from SDCWA on a wholesale basis. The District also looks to the SDCWA to insure, to the best of its ability, that adequate amounts of water will be available to satisfy future water requirements.

Aside from water reclamation projects related to its wastewater treatment facilities, the District relies entirely on water purchased from the SDCWA. In an effort to assist in diversifying water supplies within the SDCWA, the District is pursuing opportunities for increased water reclamation and the potential for groundwater use. In concert with regional goals set by MWD and SDCWA for conservation, local supplies, State Water Project supplies, Colorado River supplies, groundwater banking, and water transfers, the District presents in its Urban Water Management Plan 2010 Update (July 2011) that adequate supplies of water will be available to the District for the next 20 years (UWMP 2010 Update, Sec. 4.6 and 4.7).

The District serves 9,807 active water meters, including 1,031 residential fire protection meters. Currently about one-third of the acreage within the District is supplied with agricultural water. This is expected to decline by as much as 75 percent by 2050. There is an expected increase in single-family and multi-family homes within the District over the next several years.

The District purchases its water supplies from SDCWA, which imports water from the MWD. Water supplies from MWD come from the Colorado River and the State Water Project. The District does not utilize groundwater as an existing source of water due to limited groundwater availability. The District may pursue studies to investigate groundwater sources in the future, but no groundwater management plans have been prepared. Water from the Carlsbad Desalination Plant, which is currently in development, may also be used in the District through purchase from SDCWA.

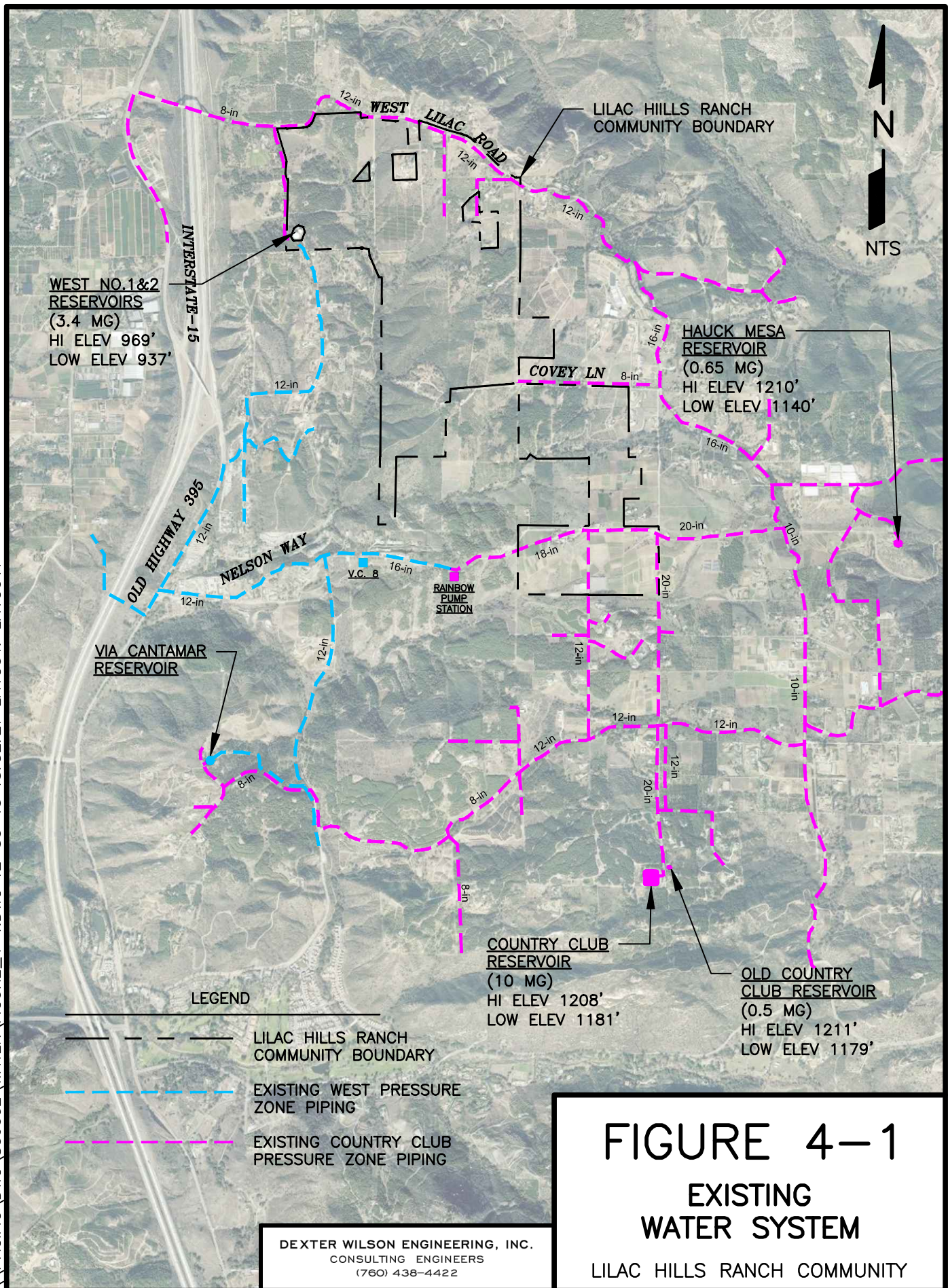
The District has seven connections to the SDCWA water system. Two of the connections are from Pipeline 4 of the San Diego Aqueduct which is located just west of the District boundary. One connection is to the Valley Center Pipeline, which generally follows the Nelson Way alignment and connects San Diego Aqueduct Pipeline 4 to Pipelines 1 and 2. The remaining four SDCWA connections to the District are made from Pipelines 1 and 2.

The District's water distribution system is divided into 18 pressure zones because of the highly varied topography. Within the pressure zones are 13 pressure regulated areas. The water system includes over 297 miles of water pipe ranging in size from 8 inches to 42 inches in diameter. The District operates a total of 42 storage facilities ranging in size from 100,000 gallons to 55.9 million gallons, 26 pump stations, 22 pressure-reducing stations, and one hydropneumatic tank.

Existing Water Service Pressure Zones

Figure 4-1 shows that there are two water pressure zones in the vicinity of the proposed project. The Country Club Pressure Zone (HGL 1210 feet) shown on Figure 4-1 is served by a SDCWA connection to the Valley Center Pipeline (V.C. 8). Water from the Valley Center Pipeline is pumped to reservoirs to the south of the connection point and then distributed to the service area.

There is a second pressure zone in the vicinity of the proposed project which is fed from a SDCWA connection to the Valley Center Pipeline (V.C. 8). This is the West Pressure Zone (HGL 969 feet) which includes two reservoirs, West No. 1 and 2 reservoirs. These reservoirs are located at the end of Standel Lane and have a combined capacity of 3.5 million gallons. The high water level for these tanks is 969 feet.



EXISTING STORAGE IN COUNTRY CLUB ZONE

The Country Club Zone has three existing tanks. These tanks are the Old Country Club Reservoir, the Country Club Reservoir, and the Hauck Mesa Reservoir. Each of these reservoirs is described below.

Old Country Club Reservoir

The Old Country Club Reservoir was built in 1965. It has a high water level of 1,211 feet and a low water level of 1,179 feet. The total volume of this tank is 0.5 million gallons. The site could be used to construct a larger reservoir or it could be abandoned and taken out of service. The volume of this tank is also relatively small, but does provide redundancy with other reservoirs out of service.

Country Club Reservoir

The Country Club Reservoir was built in 1975. It is a asphaltic-cement lined in-ground reservoir with a structural cover. The Country Club Reservoir has a high water level of 1,208 feet and a low water level of 1,181 feet. The storage volume of the tank is 10 million gallons.

Hauck Mesa Reservoir

The Hauck Mesa Reservoir was constructed in 1966. It is a steel tank with a storage volume of 0.65 million gallons. It has a high water level of 1,210 feet and a low water level of 1,140 feet. The majority of the tank volume is below the bottom of the other tanks. The volume of this tank is also relatively small, but does provide redundancy with other reservoirs out of service.

CHAPTER 5

RECOMMENDED WATER FACILITIES

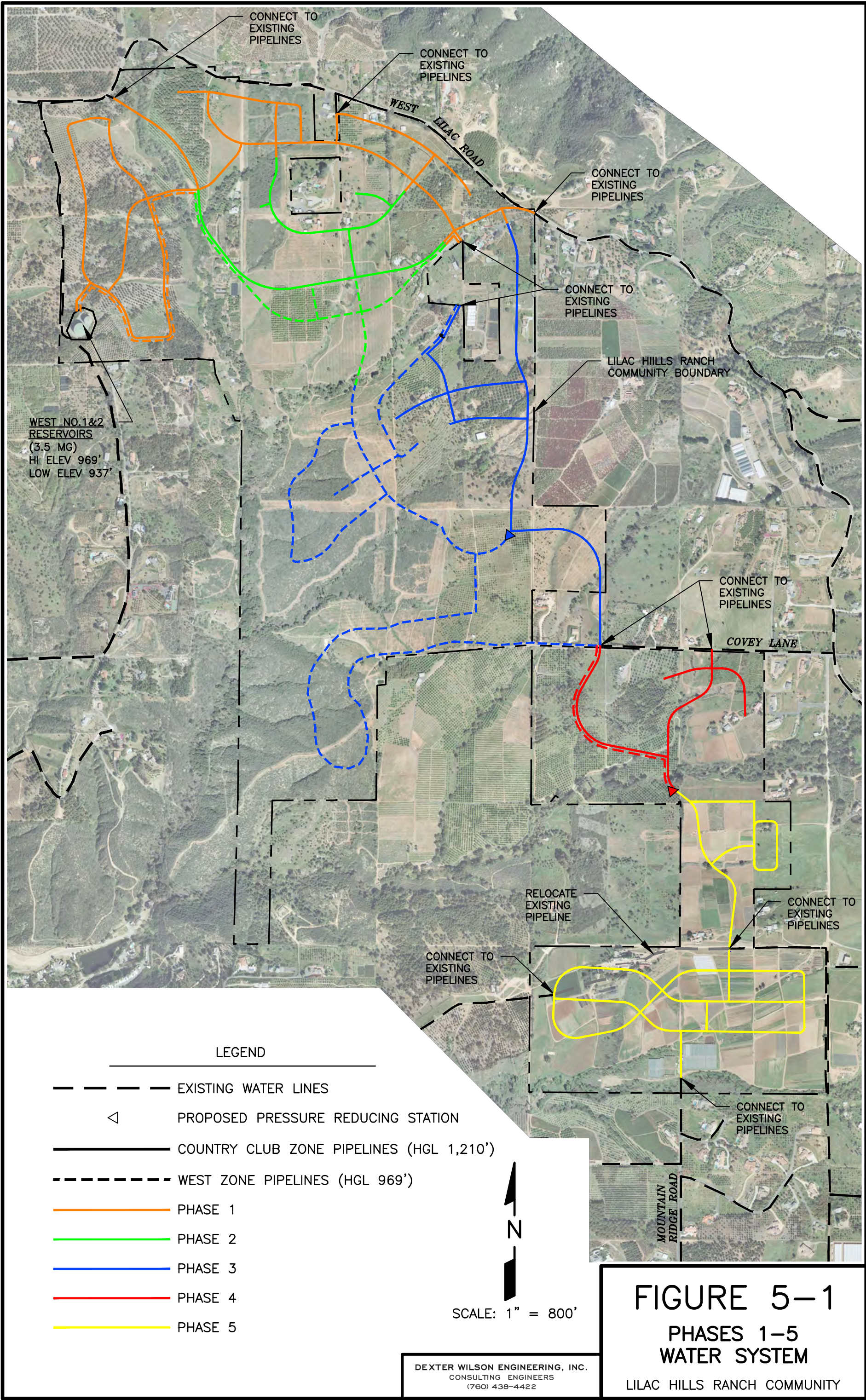
The purpose of this chapter is to discuss the required on-site improvements for the Lilac Hills Ranch Community. This chapter will also discuss the off-site improvements needed to supply adequate water service and fire protection to the proposed development. Figure 5-1 presents the recommended backbone water facilities for the Lilac Hills Ranch Community.

PROPOSED WATER SERVICE ZONES

As discussed in the previous chapter, there are two main water service pressure zones in the vicinity of the Lilac Hills Ranch Community. The larger one is the Country Club Pressure Zone with a hydraulic grade line of 1,210 feet. Existing piping from the Country Club Pressure Zone extends into the Lilac Hills Ranch Community boundary. The second pressure zone is the West Pressure Zone with a hydraulic grade line of 969 feet. The West Pressure Zone reservoirs are just within the project boundary; the existing 969 Zone pipelines are to the west of the project boundary.

The Country Club Pressure Zone and the West Pressure Zone shall both serve the Lilac Hills Ranch Community as shown on Figure 5-1. Based upon the maximum expected elevation of 959 feet, the Country Club Pressure Zone can provide a static pressure of 109 psi. Elevations below 830 feet are recommended to be served by the West Pressure Zone. At the minimum expected elevation of the project, 623 feet, the maximum static pressure imparted by the West Pressure Zone is 150 psi.

Water service meters providing domestic service in areas where working pressure is greater than 150 psi would need to have individual pressure regulators installed ahead of the meters to keep working pressures less than 150 psi. The public water system and connected fire hydrants can operate at the higher working pressure (up to 200 psi) with proper design of the piping, fittings, and appurtenances. Fire hydrants and gate valves are all designed for a maximum working pressure of 200 psi. Water main piping will be specified as Class 200 where working pressures exceed 150 psi.



In addition to domestic meters, fire protection meters will be required. These meters are typically 1-inch in size for a single family residence. All proposed meters will need to be compatible with the District's proposed remote meter reading capabilities. Furthermore, the Community may need to install sufficient communication components to adequately transmit data from the Community's meters to the District offices.

OFF-SITE WATER SYSTEM

The existing Country Club Pressure Zone includes a network of existing distribution piping off-site of the Lilac Hills Ranch Community as shown in Figure 4-1. The project will make use of up to ten points of connection to the existing water system. This will provide sufficient water system looping for the Lilac Hills Ranch Community as well as improve the water system looping for the Country Club Pressure Zone in this area of the water service zone. This will enhance the operation of the existing Country Club Pressure Zone system.

The existing Country Club Pressure Zone also has significant available reservoir storage. The Country Club Reservoir has a volume of 10 million gallons. It is located south of the proposed project. The District has a desire for the project to provide redundancy in the zone by means of reservoir improvements. Options for these improvements are discussed later in this chapter.

ON-SITE CHANGES TO EXISTING PIPING SYSTEM

Piping changes to the existing District system will be required near the West Reservoir in the northwest portion of the property and in the southerly area of the property where there is a pipeline crossing the project. Each of these items is discussed below.

Connections to West Reservoir

The West Reservoir is currently fed from the south as shown in Figure 4-1. A line comes up and provides feed to the two adjacent reservoirs at a high water elevation of 969 feet. A pump station is located on-site that pumps from these reservoirs into the Country Club Pressure Zone. This pipeline currently runs along the western boundary of the property and connects to a line in West Lilac Road. The project will likely relocate this line into the street system for the project and reconnect to West Lilac Road as shown in Figure 5-1. The existing pipeline will

have to remain in service until the new pipeline is constructed and tested. At that point in time the old line could be taken out of service.

Southern Pipe Crossing

In the southern area of the property there is a District line as well as a SDCWA water line crossing through the project. It is anticipated that the District line will be relocated into the existing street and reconnected on either end as shown in Figure 5-1. This reconnection will be done in the later stages of the project and will be detailed on final design drawings. The new pipeline will have to be constructed and tested before the old pipeline can be taken out of service.

REDUNDANCY IMPROVEMENTS FOR THE COUNTRY CLUB ZONE

This section presents three alternatives the District could consider for providing reservoir within the Country Club Pressure Zone. Implementation of any of these alternatives would provide adequate redundancy and will be pursued at the discretion of VCMWD. One will be chosen and implemented prior to occupancy of units within the Lilac Hills Ranch Community. All alternatives would occur within the District's existing reservoir sites.

Country Club Zone Demands

The maximum day demand for the Country Club Pressure Zone is 8.8 million gallons (6,095 gpm). This value was provided by the District and is intended to represent the buildout demand of the zone.

Option 1 – Construction of a Dividing Wall in the Country Club Reservoir

Under this option, a dividing wall would be constructed down the center of the Country Club Reservoir, essentially dividing the reservoir into two 5 MG reservoirs. The wall would be of sufficient structural integrity so that the District could take either half of the reservoir out of service for maintenance and still maintain sufficient storage for the zone. Of the options presented, the construction time for this option is the least.

To pursue this alternative, the Country Club Reservoir would be taken out of service and the pumping stations serving the Country Club Pressure Zone would have to be modified to meet peak demand to the system. This would involve changing the control system to operate within a larger range of flows. It would also require that the pumped flows vary throughout the course of the day to meet the peak hour demands. Care would have to be taken with the pump control settings to insure that the zone retains adequate fire flow storage at all times in the Old Country Club and Hauck Mesa reservoirs. Appendix C presents the results of the computer model developed to validate this option. The estimated cost for this option is provided in Table 5-1.

<p align="center">TABLE 5-1 COST OF OPTION 1</p>	
Item	Cost \$
Grading	600,000
Piping and Structures	250,000
Cover and Liner	1,200,000
Other	400,000
Subtotal	2,450,000
Contingency, 10%	245,000
Engineering, 10%	245,000
District Review and Inspection, 5%	122,500
TOTAL	\$3,062,500

Option 2 – Replacement of Country Club Reservoir with Two 5 MG Reservoirs

Under this option, the Country Club Reservoir would be taken out of service and two, 5 MG reservoirs would be reconstructed. As with Option 1, in order to pursue this alternative, the Country Club Reservoir would be taken out of service and the pumping stations serving the Country Club Pressure Zone would have to be modified to meet peak demand to the system and to insure that the zone retains adequate fire flow storage at all times in the Old Country Club and Hauck Mesa reservoirs. The construction time to implement this option would be much greater than Option 1, likely requiring a year for completion. Table 5-2 presents the estimated cost for this option.

TABLE 5-2 COST OF OPTION 2	
Item	Cost \$
Pump Station Modification	500,000
Demolish County Club Reservoir	500,000
Construct 2 – 5 mg Reservoirs	7,480,000
Piping Modification	500,000
Subtotal	\$8,980,000
Contingency, 10%	\$898,000
Engineering, 10%	\$898,000
District Review and Inspection, 5%	\$449,000
TOTAL	\$11,225,000

Option 3 – Replacement of Old Country Club Reservoir with a New Reservoir

Under this option, the 0.5 MG Old Country Club Reservoir would be taken out of service and a new 3 MG reservoir would be reconstructed within the District's existing reservoir site. This option has the advantage of a more simplistic pumping system to keep the Country Club Zone in service as the 10 MG Country Club Reservoir would still be available. This option has a disadvantage in that the hydraulic grade lines of the reservoirs may be slightly different than the Country Club Reservoir, but could be remedied in the future by adjusting the hydraulic grade lines of that reservoir once it is replaced in the future. Table 5-3 provides an estimate of the cost of this alternative.

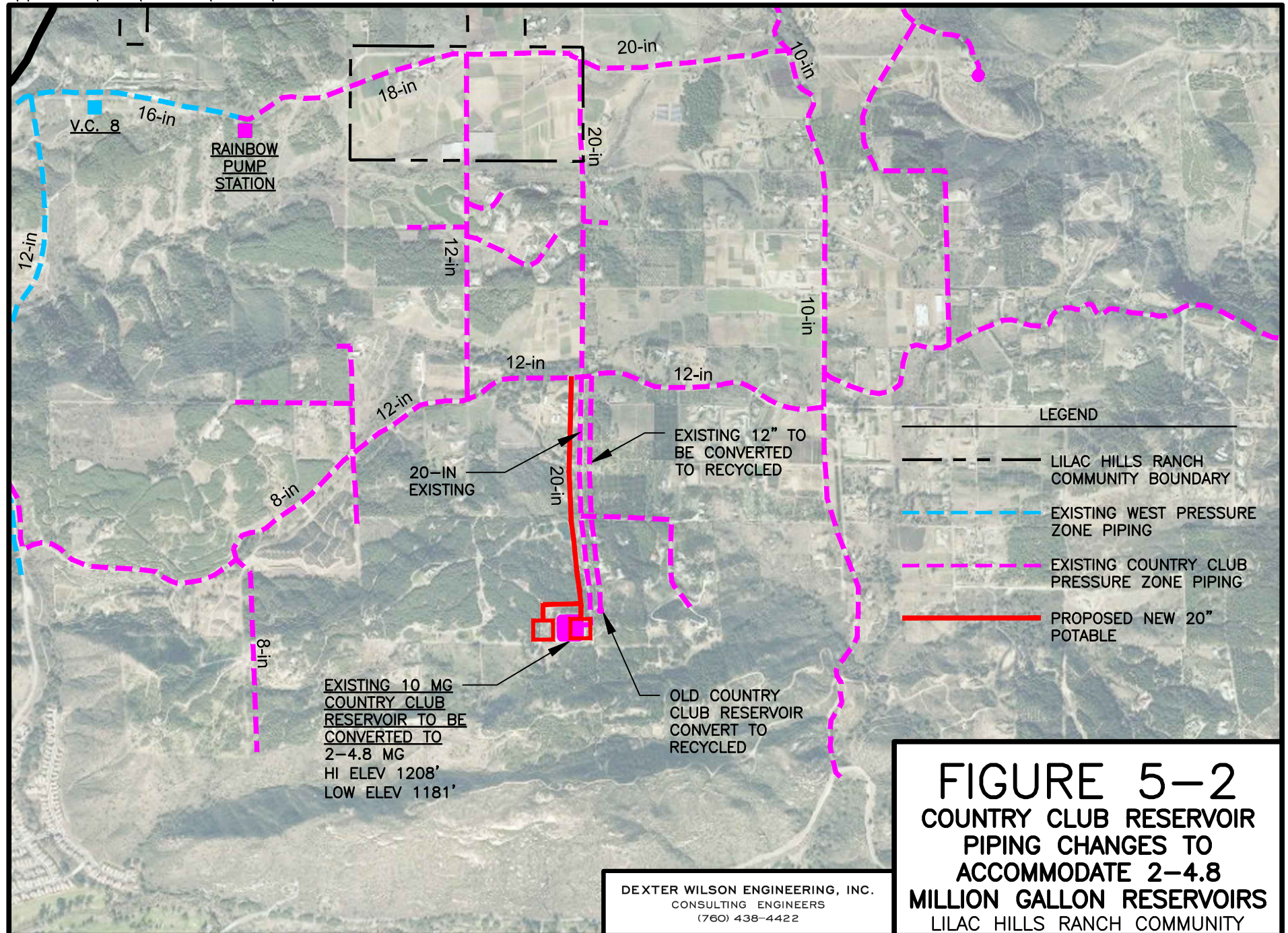
TABLE 5-3 COST OF OPTION 3	
Item	Cost \$
Demolish Old Country Club Reservoir	250,000
Construct New 3 MG Reservoir	3,000,000
Pump Station and Piping Modifications	500,000
Subtotal	\$3,750,000
Contingency, 10%	\$375,000
Engineering, 10%	\$375,000
District Review and Inspection, 5%	\$187,500
TOTAL	\$4,687,500

Recommended Option – Construct a Dividing Wall in the Country Club Reservoir

The recommended alternative is to split the Country Club Reservoir into two reservoirs. Each reservoir will be approximately 4.8 million gallons, which is less than 15 acre-feet to assure that they are not considered a dam. Figure 5-2 shows the suggested piping changes for the split reservoir. The Old Country Club Reservoir and existing 12' line in Circle R Lane could be converted to recycled water use after the Country Club Reservoir is split.

Figure 5-3 shows the recycled water route from Moosa to the project area. It also shows how piping could be connected to the Old Country Club Reservoir if it is connected to recycled water.

Figure 5-4 shows the proposed piping facility layout within Covey Lane, Mountain Ridge, and Circle R Lane.



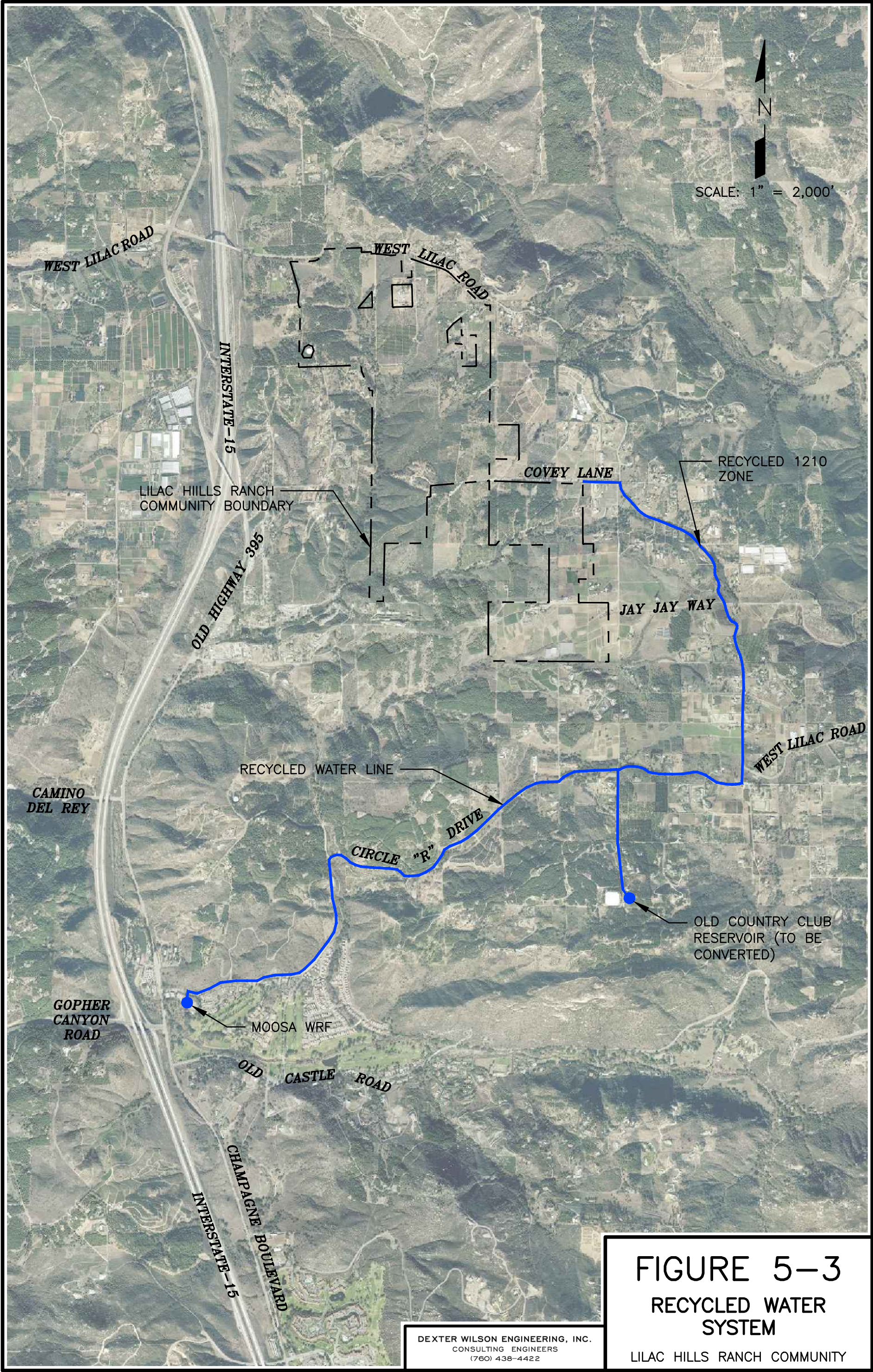
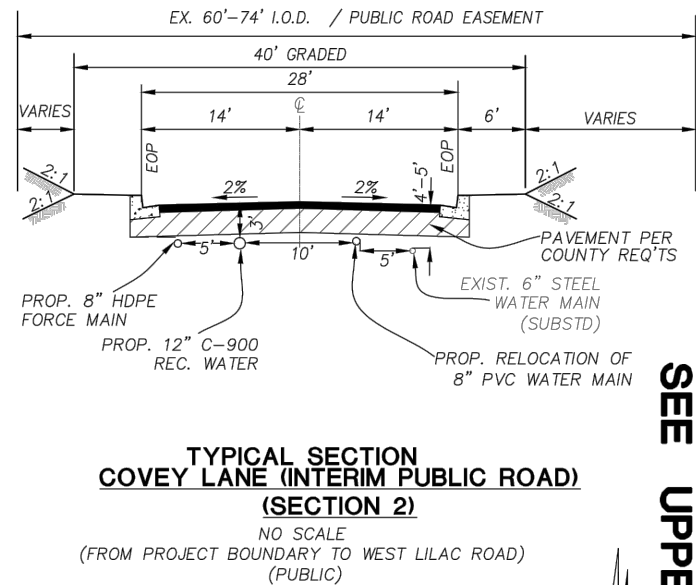
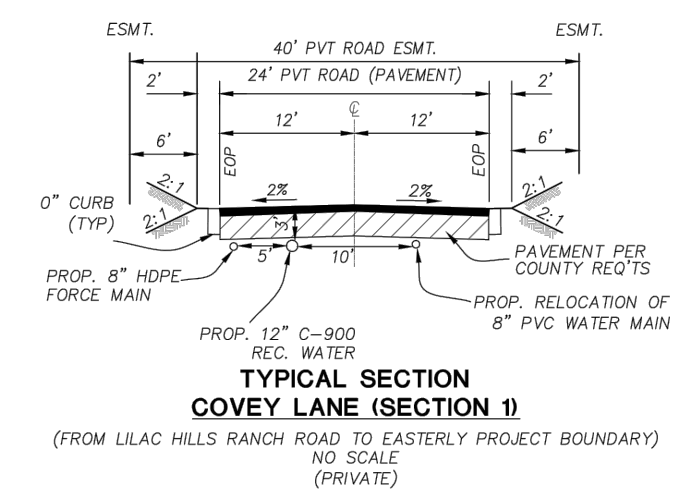




FIGURE 5-4A
MOUNTAIN RIDGE ROAD
UTILITY CROSS SECTION
LILAC HILLS RANCH COMMUNITY



LEGEND

PROJECT BOUNDARY

EXISTING PROPERTY LINE

EXISTING EASEMENT

EXISTING WATERLINE

PROPOSED WATERLINE RELOCATION

PROPOSED RECYCLED WATERLINE

PROPOSED SEWER FORCEMAIN



SCALE: 1"=60'



SEE UPPER RIGHT

COVEY LANE UTILITIES

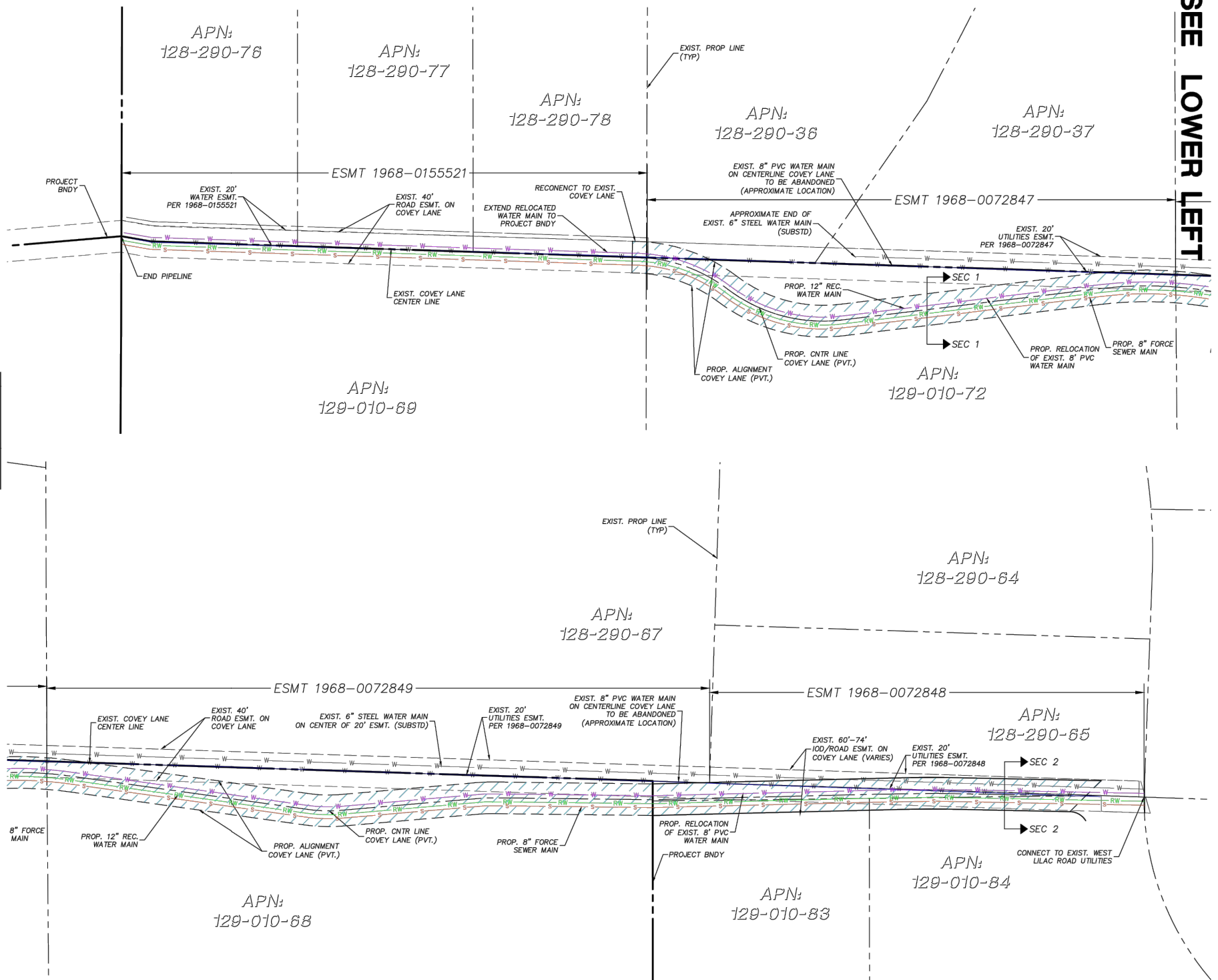


FIGURE 5-4B

COVEY LANE

UTILITY CROSS SECTION

LILAC HILLS RANCH COMMUNITY

CIRCLE R LANE UTILITIES EXHIBIT
LILAC HILLS RANCH

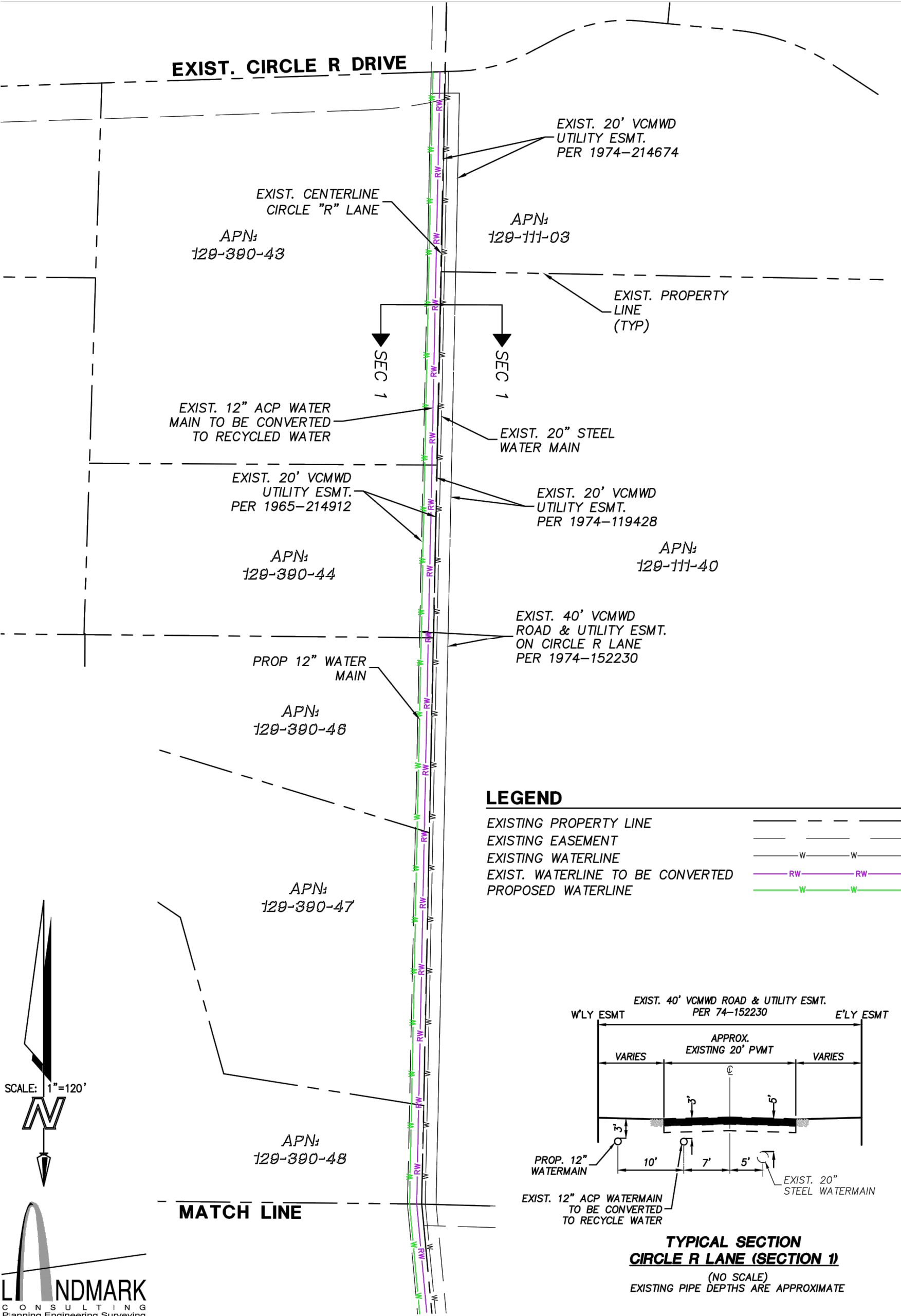
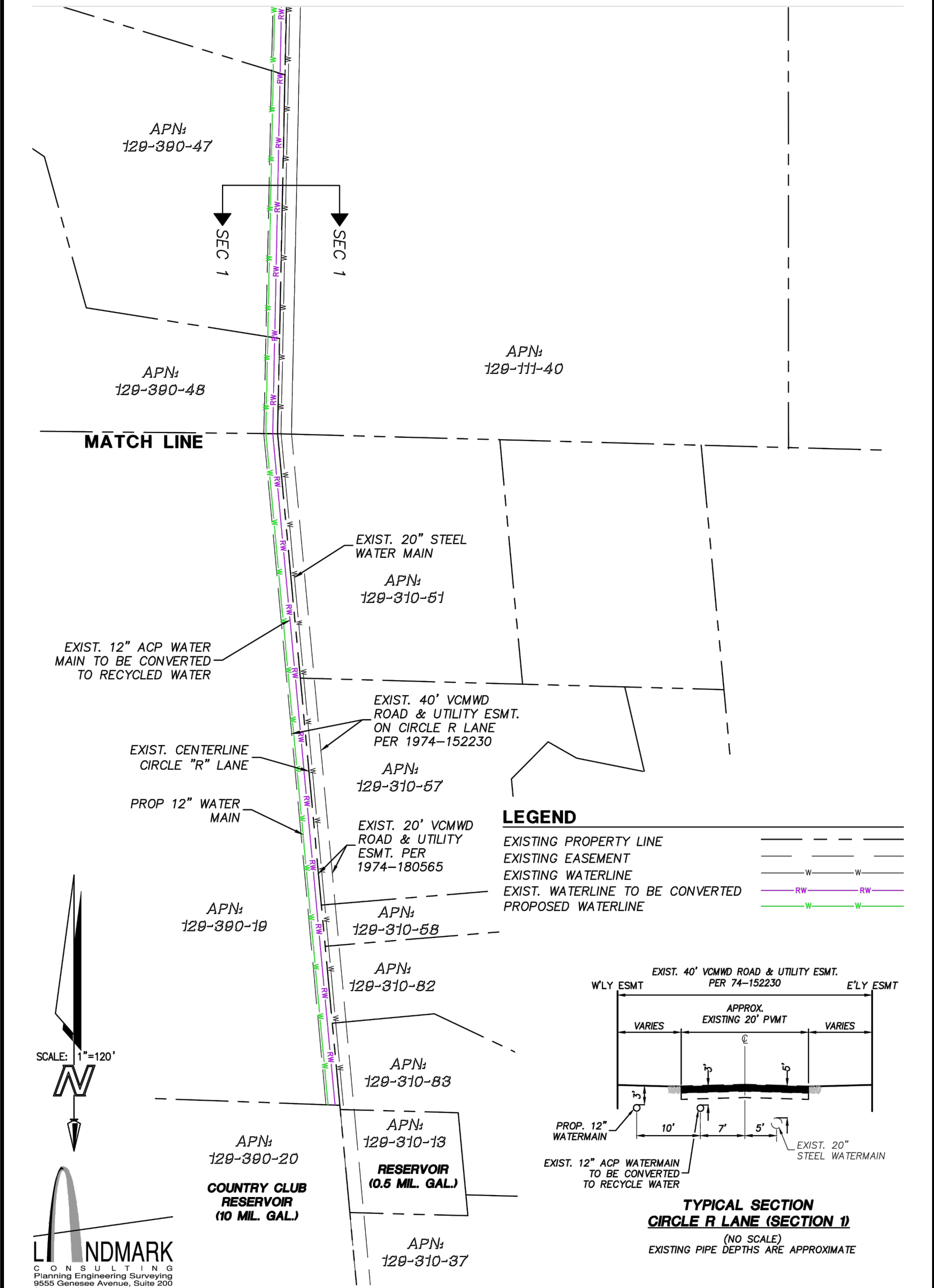


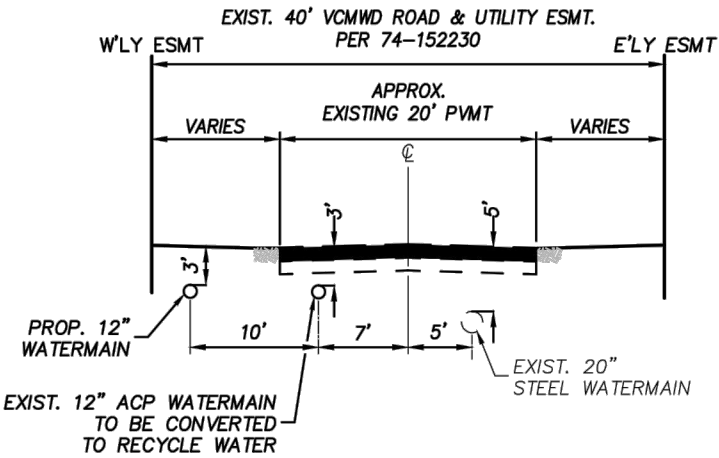
FIGURE 5-4C1
CIRCLE 'R' LANE
UTILITY CROSS SECTION
LILAC HILLS RANCH COMMUNITY

CIRCLE R LANE UTILITIES EXHIBIT
LILAC HILLS RANCH



LEGEND

EXISTING PROPERTY LINE	---
EXISTING EASEMENT	- - -
EXISTING WATERLINE	W W
EXIST. WATERLINE TO BE CONVERTED	RW RW
PROPOSED WATERLINE	W W



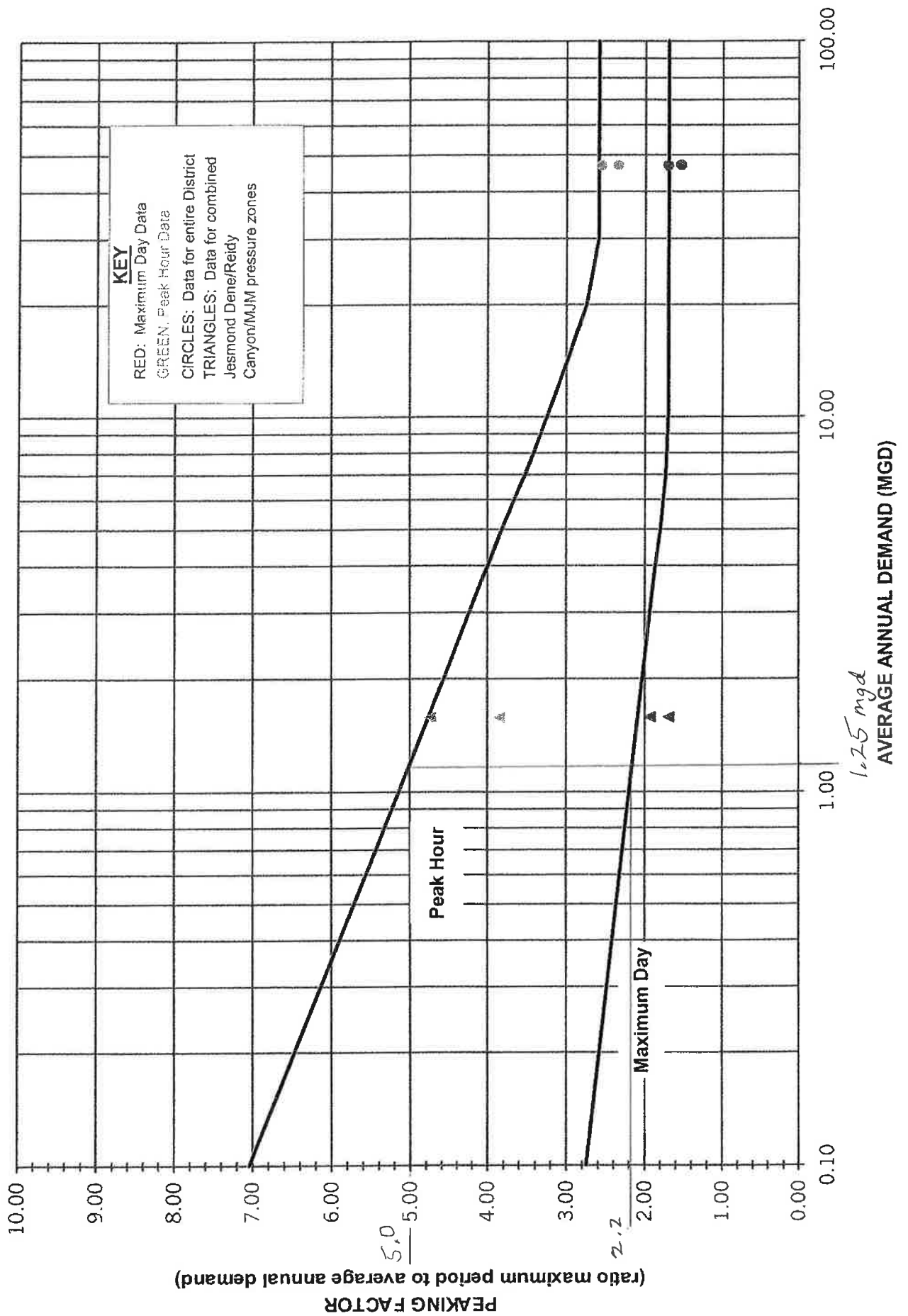
**TYPICAL SECTION
CIRCLE R LANE (SECTION 1)**
(NO SCALE)
EXISTING PIPE DEPTHS ARE APPROXIMATE

FIGURE 5-4C2
CIRCLE 'R' LANE
UTILITY CROSS SECTION
LILAC HILLS RANCH COMMUNITY

APPENDIX A

PEAKING FACTORS FOR VALLEY CENTER MWD

FIGURE 8 **PEAKING FACTORS FOR VALLEY CENTER MWD**



APPENDIX B

LILAC HILLS RANCH COMMUNITY WATER, WASTEWATER, AND RECYCLED WATER DEMANDS

Estimated Water Demands Without Conservation						
Land Use	Acres	Units	Water Use Based on Demand Factors			
			Factor		Use, gpm	Use, gpd
Single Family Detached	156.9	903	500	gpd/DU	313.54	451,500
Single Family Senior	76.9	468	300	gpd/DU	97.50	140,400
Single Family Attached	7.9	164	433	gpd/DU	49.31	71,012
Commercial/Mixed Use	17.3	211	4,500	gpd/ac	54.06	77,850
Water Reclamation	2.4	-	2,333	gpd/ac	3.89	5,599
Recycled Facility/Trail Head	0.6	-	1,667	gpd/ac	0.69	1,000
Detention Basin	7.9	-	1,667	gpd/ac	9.15	13,169
School	12.0	-	2,333	gpd/ac	19.44	27,996
Community Purpose Facility	2.0	-	2,333	gpd/ac	3.24	4,666
Group Care	6.5	-	2,333	gpd/ac	10.53	15,165
Institutional	10.0	-	2,333	gpd/ac	16.20	23,330
Park	23.6	-	1,667	gpd/ac	27.32	39,341
Biological Open Space	104.1	-	-	-	-	-
Non-Circulating Road	45.7	-	-	-	-	-
Circulating Road	37.6	-	-	-	-	-
Common Areas/Ag	20.3	-	2,500	gpd/ac	35.24	50,750
Manufactured Slopes/Water	76.3	-	2,500	gpd/ac	132.47	190,750
Total, gpd	608.0	1,746			772.59	1,112,528
Total, afy						1,246

Estimated Water Demands With Conservation						
Land Use	Acres	Units	Water Use Based on Demand Factors			
			Factor		Use, gpm	Use, gpd
Single Family Detached	156.9	903	500	gpd/DU	235.16	338,625
Single Family Senior	76.9	468	300	gpd/DU	73.13	105,300
Single Family Attached	7.9	164	433	gpd/DU	36.99	53,259
Commercial/Mixed Use	17.3	211	4,500	gpd/ac	40.55	58,388
Water Reclamation	2.4	-	2,333	gpd/ac	2.92	4,199
Recycled Facility/Trail Head	0.6	-	1,667	gpd/ac	0.52	750
Detention Basin	7.9	-	1,667	gpd/ac	6.86	9,877
School	12.0	-	2,333	gpd/ac	14.58	20,997
Community Purpose Facility	2.0	-	2,333	gpd/ac	2.43	3,500
Group Care	6.5	-	2,333	gpd/ac	7.90	11,373
Institutional	10.0	-	2,333	gpd/ac	12.15	17,498
Park	23.6	-	1,667	gpd/ac	20.49	29,506
Biological Open Space	104.1	-	-	-	-	-
Non-Circulating Road	45.7	-	-	-	-	-
Circulating Road	37.6	-	-	-	-	-
Common Areas/Ag	20.3	-	2,500	gpd/ac	26.43	38,063
Manufactured Slopes/Wet W	76.3	-	2,500	gpd/ac	99.35	143,063
Total, gpd	608.0	1,746			579.44	834,396
Total, afy						935

Estimated Water Demands With Conservation, Phase 1				
Land Use	Acres	Units	Water Use Based on Demand Factors	
			Use, gpm	Use, gpd
Single Family Detached	60.7	352.0	91.67	132,000
Single Family Senior	-	-	-	-
Single Family Attached	-	-	-	-
Commercial/Mixed Use	-	-	-	-
Water Reclamation	-	-	-	-
Recycled Facility/Trail Head	-	-	-	-
Detention Basin	-	-	-	-
School	-	-	-	-
Community Purpose Facility	-	-	-	-
Group Care	-	-	-	-
Institutional	-	-	-	-
Park	4.5	-	3.91	5,626
Biological Open Space	15.6	-	-	-
Non-Circulating Road	13.7	-	-	-
Circulating Road	7.7	-	-	-
Common Areas/Ag	6.2	-	8.07	11,625
Manufactured Slopes/Wet V	13.1	-	17.06	24,563
Total, gpd	121.5	352	120.70	173,814
Total, afy				195

Estimated Water Demands With Conservation, Phase 2				
Land Use	Acres	Units	Water Use Based on Demand Factors	
			Use, gpm	Use, gpd
Single Family Detached	18.3	196.0	51.04	73,500
Single Family Senior	-	-	-	-
Single Family Attached	3.6	59.0	13.31	19,160
Commercial/Mixed Use	16.4	211.0	38.44	55,350
Water Reclamation	-	-	-	-
Recycled Facility/Trail Head	0.6	-	0.52	750
Detention Basin	-	-	-	-
School	-	-	-	-
Community Purpose Facility	-	-	-	-
Group Care	-	-	-	-
Institutional	-	-	-	-
Park	0.8	-	0.69	1,000
Biological Open Space	12.6	-	-	-
Non-Circulating Road	8.0	-	-	-
Circulating Road	13.6	-	-	-
Common Areas/Ag	0.8	-	1.04	1,500
Manufactured Slopes/Wet V	14.9	-	19.40	27,938
Total, gpd	89.6	466	124.44	179,198
Total, afy				201

Estimated Water Demands With Conservation, Phase 3				
Land Use	Acres	Units	Water Use Based on Demand Factors	
			Use, gpm	Use, gpd
Single Family Detached	77.9	355.0	92.45	133,125
Single Family Senior	-	-	-	-
Single Family Attached	4.3	105.0	23.68	34,099
Commercial/Mixed Use	0.5	-	1.17	1,688
Water Reclamation	2.4	-	2.92	4,199
Recycled Facility/Trail Head	-	-	-	-
Detention Basin	5.1	-	4.43	6,376
School	12.0	-	14.58	20,997
Community Purpose Facility	2.0	-	2.43	3,500
Group Care	-	-	-	-
Institutional	-	-	-	-
Park	13.5	-	11.72	16,878
Biological Open Space	49.0	-	-	-
Non-Circulating Road	8.2	-	-	-
Circulating Road	8.7	-	-	-
Common Areas/Ag	3.3	-	4.30	6,188
Manufactured Slopes/Wet V	36.1	-	47.01	67,688
Total, gpd	223.0	460	204.68	294,737
Total, afy				330

Estimated Water Demands With Conservation, Phase 4				
Land Use	Acres	Units	Water Use Based on Demand Factors	
			Use, gpm	Use, gpd
Single Family Detached	-	-	-	-
Single Family Senior	29.9	171.0	26.72	38,475
Single Family Attached	-	-	-	-
Commercial/Mixed Use	-	-	-	-
Water Reclamation	-	-	-	-
Recycled Facility/Trail Head	-	-	-	-
Detention Basin	1.0	-	0.87	1,250
School	-	-	-	-
Community Purpose Facility	-	-	-	-
Group Care	6.5	-	7.90	11,373
Institutional	-	-	-	-
Park	3.7	-	3.21	4,626
Biological Open Space	9.6	-	-	-
Non-Circulating Road	2.8	-	-	-
Circulating Road	3.0	-	-	-
Common Areas/Ag	1.3	-	1.69	2,438
Manufactured Slopes/Wet W	3.7	-	4.82	6,938
Total, gpd	61.5	171	45.21	65,100
Total, afy				73

Estimated Water Demands With Conservation, Phase 5				
Land Use	Acres	Units	Water Use Based on Demand Factors	
			Use, gpm	Use, gpd
Single Family Detached	-	-	-	-
Single Family Senior	47.0	297.0	46.41	66,825
Single Family Attached	-	-	-	-
Commercial/Mixed Use	0.4	-	0.94	1,350
Water Reclamation	-	-	-	-
Recycled Facility/Trail Head	-	-	-	-
Detention Basin	1.8	-	1.56	2,250
School	-	-	-	-
Community Purpose Facility	-	-	-	-
Group Care	-	-	-	-
Institutional	10.0	-	12.15	17,498
Park	1.1	-	0.96	1,375
Biological Open Space	17.3	-	-	-
Non-Circulating Road	13.0	-	-	-
Circulating Road	4.6	-	-	-
Common Areas/Ag	8.7	-	11.33	16,313
Manufactured Slopes/Wet W	8.5	-	11.07	15,938
Total, gpd	112.4	297	84.41	121,548
Total, afy				136

Lilac Hills Ranch Potable and Non-Potable Water Use With Conservation										
Land Use	Pre-Conservation Water Use	Water Use With Conservation of 25%	Interior Demand %	Potable Water Demand	Exterior Demand %	Potable Water Demand	Non-Potable Water Demand	Total Potable Demand	Total Non-Potable Demand	Project Total Demand
Single Family Detached	451,500	338,625	40	135,450	60	101,588	101,588 *	237,038	101,588	338,625
Single Family Senior	140,400	105,300	40	42,120	60	31,590	31,590 *	73,710	31,590	105,300
Single Family Attached	71,012	53,259	40	21,304	60	9,587	22,369 *	30,890	22,369	53,259
Commercial/Mixed Use	77,850	58,388	40	23,355	60	-	35,033	23,355	35,033	58,388
Water Reclamation	5,599	4,199	40	1,680	60	-	2,520	1,680	2,520	4,199
Recycled Facility/Trail Head	1,000	750	40	300	60	-	450	300	450	750
Detention Basin	13,169	9,877	0	-	100	-	9,877	-	9,877	9,877
School	27,996	20,997	40	8,399	60	-	12,598	8,399	12,598	20,997
Community Purpose Facility	4,666	3,500	40	1,400	60	-	2,100	1,400	2,100	3,500
Group Care	15,165	11,373	40	4,549	60	-	6,824	4,549	6,824	11,373
Institutional	23,330	17,498	40	6,999	60	-	10,499	6,999	10,499	17,498
Park	39,341	29,506	40	11,802	60	-	17,704	11,802	17,704	29,506
Biological Open Space	-	-	0	-	100	-	-	-	-	-
Non-Circulating Road	-	-	0.0	-	0.0	-	-	-	-	-
Circulating Road	-	-	0.0	-	0.0	-	-	-	-	-
Common Areas/Ag	50,750	38,063	0.0	-	100.0	-	38,063	-	38,063	38,063
Manufactured Slopes/Wet Weather Storage	190,750	143,063	0.0	-	100.0	-	143,063	-	143,063	143,063
Total, gpd	1,112,528	834,396	-	257,358	-	142,764	434,274	400,122	434,274	834,396
Total, afy	1,246	934.71	-	288	-	160	486	448	486	935

* Non-potable water demand will be part of Common Area Irrigation

Note - Single Family Detached exterior potable water use could be reduced by 34 AFY via rain water harvesting.

	gpd	afy	Phasing Check
Supplied by RW	278,728	312.17	312.17
Supplied by GW	155,546	174.21	174.21

Lilac Hills Ranch Potable and Non-Potable Water Use by Phase										
Constructio n Phase	Project Phase	Potable Demand		Non-Potable Demand					Total	
				Groundwater		Recycled Water		RW Irrigated Acreage *		
		gpd	afy	gpd	afy	gpd	afy			
1	1	94,650	106	39,600	44	39,563	44	15	173,814	195
2	4	33,332	37	11,543	13	20,225	23	8	65,100	73
3	5	54,867	61	20,048	22	46,634	52	17	121,548	136
4	2	85,403	96	30,097	34	63,698	71	24	179,198	201
5	3	131,869	148	54,259	61	108,608	122	41	294,737	330
Total		400,122	448	155,546	174	278,728	312	104	834,396	935

* Based upon 3 acre feet per acre per year

This scenario assumes all groundwater is used only on single family homes.

Lilac Hills Ranch Potable and Non-Potable Water Use With Conservation, Phase 1									
Land Use	Demand	Interior Demand %	Potable Water Demand	Exterior Demand %	Potable Water Demand	Non-Potable Water Demand	Total Potable Demand	Total Non-Potable Demand	Project Total Demand
Single Family Detached	132,000	40	52,800	60	39,600	39,600 *	92,400	39,600	132,000
Single Family Senior	-	40	-	60	-	- *	-	-	-
Single Family Attached	-	40	-	60	-	- *	-	-	-
Commercial/Mixed Use	-	40	-	60	-	-	-	-	-
Water Reclamation	-	40	-	60	-	-	-	-	-
Recycled Facility/Trail Head	-	40	-	60	-	-	-	-	-
Detention Basin	-	0	-	100	-	-	-	-	-
School	-	40	-	60	-	-	-	-	-
Community Purpose Facility	-	40	-	60	-	-	-	-	-
Group Care	-	40	-	60	-	-	-	-	-
Institutional	-	40	-	60	-	-	-	-	-
Park	5,626	40	2,250	60	-	3,376	2,250	3,376	5,626
Biological Open Space	-	0	-	100	-	-	-	-	-
Non-Circulating Road	-	0.0	-	0.0	-	-	-	-	-
Circulating Road	-	0.0	-	0.0	-	-	-	-	-
Common Areas/Ag	11,625	0.0	-	100.0	-	11,625	-	11,625	11,625
Manufactured Slopes/Wet Weather Storage	24,563	0.0	-	100.0	-	24,563	-	24,563	24,563
Total, gpd	173,814	-	55,050	-	39,600	79,163	94,650	79,163	173,814
Total, afy	195	-	62	-	44	89	106	89	195

* Non-potable water demand will be part of Common Area Irrigation

Note - Single Family Detached exterior potable water use could be reduced by 34 AFY via rain water harvesting.

	gpd	afy
Supplied by RW	39,563	44.31
Supplied by GW	39,600	44.35

Lilac Hills Ranch Potable and Non-Potable Water Use With Conservation, Phase 2									
Land Use	Demand	Interior Demand %	Potable Water Demand	Exterior Demand %	Potable Water Demand	Non-Potable Water Demand	Total Potable Demand	Total Non-Potable Demand	Project Total Demand
Single Family Detached	73,500	40	29,400	60	22,050	22,050 *	51,450	22,050	73,500
Single Family Senior	-	40	-	60	-	- *	-	-	-
Single Family Attached	19,160	40	7,664	60	3,449	8,047 *	11,113	8,047	19,160
Commercial/Mixed Use	55,350	40	22,140	60	-	33,210	22,140	33,210	55,350
Water Reclamation	-	40	-	60	-	-	-	-	-
Recycled Facility/Trail Head	750	40	300	60	-	450	300	450	750
Detention Basin	-	0	-	100	-	-	-	-	-
School	-	40	-	60	-	-	-	-	-
Community Purpose Facility	-	40	-	60	-	-	-	-	-
Group Care	-	40	-	60	-	-	-	-	-
Institutional	-	40	-	60	-	-	-	-	-
Park	1,000	40	400	60	-	600	400	600	1,000
Biological Open Space	-	0	-	100	-	-	-	-	-
Non-Circulating Road	-	0.0	-	0.0	-	-	-	-	-
Circulating Road	-	0.0	-	0.0	-	-	-	-	-
Common Areas/Ag	1,500	0.0	-	100.0	-	1,500	-	1,500	1,500
Manufactured Slopes/Wet Weather Storage	27,938	0.0	-	100.0	-	27,938	-	27,938	27,938
Total, gpd	179,198	-	59,904	-	25,499	93,795	85,403	93,795	179,198
Total, afy	201	-	67	-	29	105	96	105	201

* Non-potable water demand will be part of Common Area Irrigation

Note - Single Family Detached exterior potable water use could be reduced by 34 AFY via rain water harvesting.

	gpd	afy
Supplied by RW	63,698	71.34
Supplied by GV	30,097	33.71

Lilac Hills Ranch Potable and Non-Potable Water Use With Conservation, Phase 3									
Land Use	Demand	Interior Demand %	Potable Water Demand	Exterior Demand %	Potable Water Demand	Non-Potable Water Demand	Total Potable Demand	Total Non-Potable Demand	Project Total Demand
Single Family Detached	133,125	40	53,250	60	39,938	39,938 *	93,188	39,938	133,125
Single Family Senior	-	40	-	60	-	- *	-	-	-
Single Family Attached	34,099	40	13,640	60	6,138	14,321 *	19,777	14,321	34,099
Commercial/Mixed Use	1,688	40	675	60	-	1,013	675	1,013	1,688
Water Reclamation	4,199	40	1,680	60	-	2,520	1,680	2,520	4,199
Recycled Facility/Trail Head	-	40	-	60	-	-	-	-	-
Detention Basin	6,376	0	-	100	-	6,376	-	6,376	6,376
School	20,997	40	8,399	60	-	12,598	8,399	12,598	20,997
Community Purpose Facility	3,500	40	1,400	60	-	2,100	1,400	2,100	3,500
Group Care	-	40	-	60	-	-	-	-	-
Institutional	-	40	-	60	-	-	-	-	-
Park	16,878	40	6,751	60	-	10,127	6,751	10,127	16,878
Biological Open Space	-	0	-	100	-	-	-	-	-
Non-Circulating Road	-	0.0	-	0.0	-	-	-	-	-
Circulating Road	-	0.0	-	0.0	-	-	-	-	-
Common Areas/Ag	6,188	0.0	-	100.0	-	6,188	-	6,188	6,188
Manufactured Slopes/Wet Weather Storage	67,688	0.0	-	100.0	-	67,688	-	67,688	67,688
Total, gpd	294,737	-	85,794	-	46,075	162,867	131,869	162,867	294,737
Total, afy	330	-	96	-	52	182	148	182	330

* Non-potable water demand will be part of Common Area Irrigation

Note - Single Family Detached exterior potable water use could be reduced by 34 AFY via rain water harvesting.

	gpd	afy
Supplied by RW	108,608	121.64
Supplied by GW	54,259	60.77

Lilac Hills Ranch Potable and Non-Potable Water Use With Conservation, Phase 4									
Land Use	Demand	Interior Demand %	Potable Water Demand	Exterior Demand %	Potable Water Demand	Non-Potable Water Demand	Total Potable Demand	Total Non-Potable Demand	Project Total Demand
Single Family Detached	-	40	-	60	-	- *	-	-	-
Single Family Senior	38,475	40	15,390	60	11,543	11,543 *	26,933	11,543	38,475
Single Family Attached	-	40	-	60	-	- *	-	-	-
Commercial/Mixed Use	-	40	-	60	-	-	-	-	-
Water Reclamation	-	40	-	60	-	-	-	-	-
Recycled Facility/Trail Head	-	40	-	60	-	-	-	-	-
Detention Basin	1,250	0	-	100	-	1,250	-	1,250	1,250
School	-	40	-	60	-	-	-	-	-
Community Purpose Facility	-	40	-	60	-	-	-	-	-
Group Care	11,373	40	4,549	60	-	6,824	4,549	6,824	11,373
Institutional	-	40	-	60	-	-	-	-	-
Park	4,626	40	1,850	60	-	2,776	1,850	2,776	4,626
Biological Open Space	-	0	-	100	-	-	-	-	-
Non-Circulating Road	-	0.0	-	0.0	-	-	-	-	-
Circulating Road	-	0.0	-	0.0	-	-	-	-	-
Common Areas/Ag	2,438	0.0	-	100.0	-	2,438	-	2,438	2,438
Manufactured Slopes/Wet Weather Storage	6,938	0.0	-	100.0	-	6,938	-	6,938	6,938
Total, gpd	65,100	-	21,790	-	11,543	31,767	33,332	31,767	65,100
Total, afy	73	-	24	-	13	36	37	36	73

* Non-potable water demand will be part of Common Area Irrigation

Note - Single Family Detached exterior potable water use could be reduced by 34 AFY via rain water harvesting.

	gpd	afy
Supplied by RW	20,225	22.65
Supplied by GW	11,543	12.93

Lilac Hills Ranch Potable and Non-Potable Water Use With Conservation, Phase 5									
Land Use	Demand	Interior Demand %	Potable Water Demand	Exterior Demand %	Potable Water Demand	Non-Potable Water Demand	Total Potable Demand	Total Non-Potable Demand	Project Total Demand
Single Family Detached	-	40	-	60	-	- *	-	-	-
Single Family Senior	66,825	40	26,730	60	20,048	20,048 *	46,778	20,048	66,825
Single Family Attached	-	40	-	60	-	- *	-	-	-
Commercial/Mixed Use	1,350	40	540	60	-	810	540	810	1,350
Water Reclamation	-	40	-	60	-	-	-	-	-
Recycled Facility/Trail Head	-	40	-	60	-	-	-	-	-
Detention Basin	2,250	0	-	100	-	2,250	-	2,250	2,250
School	-	40	-	60	-	-	-	-	-
Community Purpose Facility	-	40	-	60	-	-	-	-	-
Group Care	-	40	-	60	-	-	-	-	-
Institutional	17,498	40	6,999	60	-	10,499	6,999	10,499	17,498
Park	1,375	40	550	60	-	825	550	825	1,375
Biological Open Space	-	0	-	100	-	-	-	-	-
Non-Circulating Road	-	0.0	-	0.0	-	-	-	-	-
Circulating Road	-	0.0	-	0.0	-	-	-	-	-
Common Areas/Ag	16,313	0.0	-	100.0	-	16,313	-	16,313	16,313
Manufactured Slopes/Wet Weather Storage	15,938	0.0	-	100.0	-	15,938	-	15,938	15,938
Total, gpd	121,548	-	34,819	-	20,048	66,682	54,867	66,682	121,548
Total, afy	136	-	39	-	22	75	61	75	136

* Non-potable water demand will be part of Common Area Irrigation

Note - Single Family Detached exterior potable water use could be reduced by 34 AFY via rain water harvesting.

	gpd	afy
Supplied by RW	46,634	52.23
Supplied by GW	20,048	22.45

Lilac Hills Ranch Wastewater Generation						
Land Use	Acres	Units	Peak 24 hr Sewage Generation		Avg 24 hr Sewage/Recycled	
			Factor	gpd	Factor	gpd
Single Family Detached*	156.9	928	200 gpd/unit	185,600	150 gpd/unit	139,200
Single Family Senior	76.9	468	125 gpd/unit	58,500	90 gpd/unit	42,120
Single Family Attached	7.9	164	180 gpd/unit	29,520	130 gpd/unit	21,320
Commercial/Mixed Use	17.3	211	1900 gpd/ac	32,870	1340 gpd/ac	23,182
Water Reclamation	2.4	-	1000 gpd/ac	2,400	700 gpd/ac	1,680
Recycled Facility/Trail Head	0.6	-	1000 gpd/ac	600	700 gpd/ac	420
Detention Basin	7.9	-	0 gpd/ac	-	0 gpd/ac	-
School	12.0	-	1000 gpd/ac	12,000	700 gpd/ac	8,400
Community Purpose Facility	2.0	-	1000 gpd/ac	2,000	700 gpd/ac	1,400
Group Care	6.5	-	1000 gpd/ac	6,500	700 gpd/ac	4,550
Institutional	10.0	-	1000 gpd/ac	10,000	700 gpd/ac	7,000
Park	23.6	-	700 gpd/ac	16,520	500 gpd/ac	11,800
Biological Open Space	104.1	-	0 gpd/ac	-	0 gpd/ac	-
Non-Circulating Road	45.7	-	0 gpd/ac	-	0 gpd/ac	-
Circulating Road	37.6	-	0 gpd/ac	-	0 gpd/ac	-
Common Areas/Ag	20.3	-	0 gpd/ac	-	0 gpd/ac	-
Manufactured Slopes/Wet Weather Storage	76.3	-	0 gpd/ac	-	0 gpd/ac	-
Total	608.0	1,771		356,510		261,072
Total, afy				399		292

* Includes 25 EDUs for existing homesites and perimeter parcels.

gpd/EDU

201

147.42

Lilac Hills Ranch Wastewater Generation Phasing Summary				
Phase	Peak 24 hr Sewage Generation		Avg 24 hr Sewage/ Recycled	
	By Phase	Cumulative	By Phase	Cumulative
1	75,350	75,350	56,400	56,400
2	83,540	158,890	60,916	117,316
3	118,100	276,990	86,850	204,166
4	30,665	307,655	21,940	226,106
5	48,855	356,510	34,966	261,072
TOTAL	356,510	-	261,072	-
gpd/EDU	201		147	

Includes 25 EDUs for existing homesites and perimeter parcels.

Phase 1 Lilac Hills Ranch Wastewater Generation						
Land Use	Acres	Units	Peak 24 hr Sewage Generation		Avg 24 hr Sewage/Recycled	
			Factor	gpd	Factor	gpd
Single Family Detached*	60.7	361	200 gpd/unit	72,200	150 gpd/unit	54,150
Single Family Senior	-	-	125 gpd/unit	-	90 gpd/unit	-
Single Family Attached	-	-	180 gpd/unit	-	130 gpd/unit	-
Commercial/Mixed Use	-	-	1900 gpd/ac	-	1340 gpd/ac	-
Water Reclamation	-	-	1000 gpd/ac	-	700 gpd/ac	-
Recycled Facility/Trail Head	-	-	1000 gpd/ac	-	700 gpd/ac	-
Detention Basin	-	-	0 gpd/ac	-	0 gpd/ac	-
School	-	-	1000 gpd/ac	-	700 gpd/ac	-
Community Purpose Facility	-	-	1000 gpd/ac	-	700 gpd/ac	-
Group Care	-	-	1000 gpd/ac	-	700 gpd/ac	-
Institutional	-	-	1000 gpd/ac	-	700 gpd/ac	-
Park	4.5	-	700 gpd/ac	3,150	500 gpd/ac	2,250
Biological Open Space	15.6	-	0 gpd/ac	-	0 gpd/ac	-
Non-Circulating Road	13.7	-	0 gpd/ac	-	0 gpd/ac	-
Circulating Road	7.7	-	0 gpd/ac	-	0 gpd/ac	-
Common Areas/Ag	6.2	-	0 gpd/ac	-	0 gpd/ac	-
Manufactured Slopes/Wet Weather Storage	13.1	-	0 gpd/ac	-	0 gpd/ac	-
Total	121.5	361		75,350		56,400
Total, afy				84		63

* Includes EDUs for existing homesites and perimeter parcels.

Phase 2 Lilac Hills Ranch Wastewater Generation						
Land Use	Acres	Units	Peak 24 hr Sewage Generation		Avg 24 hr Sewage/Recycled	
			Factor	gpd	Factor	gpd
Single Family Detached*	18.3	203	200 gpd/unit	40,600	150 gpd/unit	30,450
Single Family Senior	-	-	125 gpd/unit	-	90 gpd/unit	-
Single Family Attached	3.6	59	180 gpd/unit	10,620	130 gpd/unit	7,670
Commercial/Mixed Use	16.4	211	1900 gpd/ac	31,160	1340 gpd/ac	21,976
Water Reclamation	-	-	1000 gpd/ac	-	700 gpd/ac	-
Recycled Facility/Trail Head	0.6	-	1000 gpd/ac	600	700 gpd/ac	420
Detention Basin	-	-	0 gpd/ac	-	0 gpd/ac	-
School	-	-	1000 gpd/ac	-	700 gpd/ac	-
Community Purpose Facility	-	-	1000 gpd/ac	-	700 gpd/ac	-
Group Care	-	-	1000 gpd/ac	-	700 gpd/ac	-
Institutional	-	-	1000 gpd/ac	-	700 gpd/ac	-
Park	0.8	-	700 gpd/ac	560	500 gpd/ac	400
Biological Open Space	12.6	-	0 gpd/ac	-	0 gpd/ac	-
Non-Circulating Road	8.0	-	0 gpd/ac	-	0 gpd/ac	-
Circulating Road	13.6	-	0 gpd/ac	-	0 gpd/ac	-
Common Areas/Ag	0.8	-	0 gpd/ac	-	0 gpd/ac	-
Manufactured Slopes/Wet Weather Storage	14.9	-	0 gpd/ac	-	0 gpd/ac	-
Total	89.6	473		83,540		60,916
Total, afy				94		68

* Includes EDUs for existing homesites and perimeter parcels.

Phase 3 Lilac Hills Ranch Wastewater Generation						
Land Use	Acres	Units	Peak 24 hr Sewage Generation		Avg 24 hr Sewage/Recycled	
			Factor	gpd	Factor	gpd
Single Family Detached*	77.9	362	200 gpd/unit	72,400	150 gpd/unit	54,300
Single Family Senior	-	-	125 gpd/unit	-	90 gpd/unit	-
Single Family Attached	4.3	105	180 gpd/unit	18,900	130 gpd/unit	13,650
Commercial/Mixed Use	0.5	-	1900 gpd/ac	950	1340 gpd/ac	670
Water Reclamation	2.4	-	1000 gpd/ac	2,400	700 gpd/ac	1,680
Recycled Facility/Trail Head	-	-	1000 gpd/ac	-	700 gpd/ac	-
Detention Basin	5.1	-	0 gpd/ac	-	0 gpd/ac	-
School	12.0	-	1000 gpd/ac	12,000	700 gpd/ac	8,400
Community Purpose Facility	2.0	-	1000 gpd/ac	2,000	700 gpd/ac	1,400
Group Care	-	-	1000 gpd/ac	-	700 gpd/ac	-
Institutional	-	-	1000 gpd/ac	-	700 gpd/ac	-
Park	13.5	-	700 gpd/ac	9,450	500 gpd/ac	6,750
Biological Open Space	49.0	-	0 gpd/ac	-	0 gpd/ac	-
Non-Circulating Road	8.2	-	0 gpd/ac	-	0 gpd/ac	-
Circulating Road	8.7	-	0 gpd/ac	-	0 gpd/ac	-
Common Areas/Ag	3.3	-	0 gpd/ac	-	0 gpd/ac	-
Manufactured Slopes/Wet Weather Storage	36.1	-	0 gpd/ac	-	0 gpd/ac	-
Total	223.0	467		118,100		86,850
Total, afy				132		97

* Includes EDUs for existing homesites and perimeter parcels.

Phase 4 Lilac Hills Ranch Wastewater Generation						
Land Use	Acres	Units	Peak 24 hr Sewage Generation		Avg 24 hr Sewage/Recycled	
			Factor	gpd	Factor	gpd
Single Family Detached*	-	1	200 gpd/unit	200	150 gpd/unit	150
Single Family Senior	29.9	171	125 gpd/unit	21,375	90 gpd/unit	15,390
Single Family Attached	-	-	180 gpd/unit	-	130 gpd/unit	-
Commercial/Mixed Use	-	-	1900 gpd/ac	-	1340 gpd/ac	-
Water Reclamation	-	-	1000 gpd/ac	-	700 gpd/ac	-
Recycled Facility/Trail Head	-	-	1000 gpd/ac	-	700 gpd/ac	-
Detention Basin	1.0	-	0 gpd/ac	-	0 gpd/ac	-
School	-	-	1000 gpd/ac	-	700 gpd/ac	-
Community Purpose Facility	-	-	1000 gpd/ac	-	700 gpd/ac	-
Group Care	6.5	-	1000 gpd/ac	6,500	700 gpd/ac	4,550
Institutional	-	-	1000 gpd/ac	-	700 gpd/ac	-
Park	3.7	-	700 gpd/ac	2,590	500 gpd/ac	1,850
Biological Open Space	9.6	-	0 gpd/ac	-	0 gpd/ac	-
Non-Circulating Road	2.8	-	0 gpd/ac	-	0 gpd/ac	-
Circulating Road	3.0	-	0 gpd/ac	-	0 gpd/ac	-
Common Areas/Ag	1.3	-	0 gpd/ac	-	0 gpd/ac	-
Manufactured Slopes/Wet Weather Storage	3.7	-	0 gpd/ac	-	0 gpd/ac	-
Total	61.5	172		30,665		21,940
Total, afy				34		25

* Includes EDUs for existing homesites and perimeter parcels.

Phase 5 Lilac Hills Ranch Wastewater Generation						
Land Use	Acres	Units	Peak 24 hr Sewage Generation		Avg 24 hr Sewage/Recycled	
			Factor	gpd	Factor	gpd
Single Family Detached*	-	1	200 gpd/unit	200	150 gpd/unit	150
Single Family Senior	47.0	297	125 gpd/unit	37,125	90 gpd/unit	26,730
Single Family Attached	-	-	180 gpd/unit	-	130 gpd/unit	-
Commercial/Mixed Use	0.4	-	1900 gpd/ac	760	1340 gpd/ac	536
Water Reclamation	-	-	1000 gpd/ac	-	700 gpd/ac	-
Recycled Facility/Trail Head	-	-	1000 gpd/ac	-	700 gpd/ac	-
Detention Basin	1.8	-	0 gpd/ac	-	0 gpd/ac	-
School	-	-	1000 gpd/ac	-	700 gpd/ac	-
Community Purpose Facility	-	-	1000 gpd/ac	-	700 gpd/ac	-
Group Care	-	-	1000 gpd/ac	-	700 gpd/ac	-
Institutional	10.0	-	1000 gpd/ac	10,000	700 gpd/ac	7,000
Park	1.1	-	700 gpd/ac	770	500 gpd/ac	550
Biological Open Space	17.3	-	0 gpd/ac	-	0 gpd/ac	-
Non-Circulating Road	13.0	-	0 gpd/ac	-	0 gpd/ac	-
Circulating Road	4.6	-	0 gpd/ac	-	0 gpd/ac	-
Common Areas/Ag	8.7	-	0 gpd/ac	-	0 gpd/ac	-
Manufactured Slopes/Wet Weather Storage	8.5	-	0 gpd/ac	-	0 gpd/ac	-
Total	112.4	298		48,855		34,966
Total, afy				55		39

* Includes EDUs for existing homesites and perimeter parcels.

APPENDIX C

COUNTRY CLUB ZONE HYDRAULIC ANALYSIS

Pump Report 00:00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.60	80.49	0.00	0.00	Closed	0.00	0.00	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	80.66	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	80.66	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.63	161.21	0.00	0.00	Closed	0.00	0.00	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.63	161.21	0.00	0.00	Closed	0.00	0.00	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.63	161.21	0.00	0.00	Closed	0.00	0.00	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	125.35	107.99	256.28	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	125.35	107.99	256.28	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	125.35	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	125.35	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	125.35	107.99	256.28	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	117.98	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	117.99	1,064.32	256.31	Open	1.00	49.07	0.00

Pump Report 01:00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.60	83.21	0.00	0.00	Closed	0.00	0.00	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.47	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.47	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.63	161.18	0.00	0.00	Closed	0.00	0.00	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.63	161.18	0.00	0.00	Closed	0.00	0.00	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.63	161.18	0.00	0.00	Closed	0.00	0.00	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	124.55	108.58	254.44	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	124.55	108.58	254.44	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	124.55	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	124.55	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	124.55	108.58	254.44	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	118.79	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	118.80	1,057.49	258.19	Open	1.00	49.07	0.00

Pump Report 02:00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.60	82.63	0.00	0.00	Closed	0.00	0.00	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.22	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.22	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.60	167.13	2,376.18	252.79	Open	1.00	166.01	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.63	167.10	0.00	0.00	Closed	0.00	0.00	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.63	167.10	0.00	0.00	Closed	0.00	0.00	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	125.74	107.70	257.20	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	125.74	107.70	257.20	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	125.74	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	125.74	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	125.74	107.70	257.20	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	118.10	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	118.11	1,063.26	256.60	Open	1.00	49.07	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.60	85.05	0.00	0.00	Closed	0.00	0.00	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	86.30	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	86.30	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.60	168.70	2,268.00	256.40	Open	1.00	166.02	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.63	168.67	0.00	0.00	Closed	0.00	0.00	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.63	168.67	0.00	0.00	Closed	0.00	0.00	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	126.58	107.08	259.13	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	126.58	107.08	259.13	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	126.58	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	126.58	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	126.58	107.08	259.13	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	119.07	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	119.07	1,055.19	258.82	Open	1.00	49.07	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.60	84.09	0.00	0.00	Closed	0.00	0.00	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	87.32	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	87.32	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.60	169.67	2,201.06	258.63	Open	1.00	166.02	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.63	169.64	0.00	0.00	Closed	0.00	0.00	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.63	169.64	0.00	0.00	Closed	0.00	0.00	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	134.30	101.07	276.94	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	134.30	101.07	276.94	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	134.30	101.07	276.94	Open	1.00	66.08	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	134.30	101.07	276.94	Open	1.00	66.08	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	134.30	101.07	276.94	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	118.34	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	118.34	1,061.32	257.14	Open	1.00	49.07	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.60	80.97	0.00	0.00	Closed	0.00	0.00	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	87.79	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	87.79	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.60	169.92	2,183.79	259.21	Open	1.00	166.02	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.63	169.89	0.00	0.00	Closed	0.00	0.00	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.63	169.89	0.00	0.00	Closed	0.00	0.00	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	132.36	102.81	272.46	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	132.36	102.81	272.46	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	132.36	102.81	272.46	Open	1.00	66.08	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	132.36	102.81	272.46	Open	1.00	66.08	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	132.36	102.81	272.46	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	116.74	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	116.74	1,074.75	253.44	Open	1.00	49.07	0.00

Pump Report 06:00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	124.04	1,182.94	190.30	Open	1.00	129.11	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	89.33	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.58	89.35	2,547.42	110.26	Open	1.00	129.04	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	185.32	1,732.60	294.73	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	185.31	1,552.08	294.71	Open	1.00	166.05	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	185.32	2,113.92	294.76	Open	1.00	166.03	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	128.33	105.79	263.17	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	128.33	105.79	263.17	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	128.33	105.79	263.17	Open	1.00	66.08	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	128.33	105.79	263.17	Open	1.00	66.08	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	128.33	105.79	263.17	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	108.56	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.92	108.56	1,143.38	234.57	Open	1.00	49.07	0.00

Pump Report 07:00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.00	1,334.52	183.27	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	88.26	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	88.26	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	184.56	1,754.15	292.98	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	184.55	1,591.91	292.96	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	184.57	2,133.63	293.01	Open	1.00	166.03	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	123.82	109.12	252.75	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	123.82	109.12	252.75	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	123.82	109.12	252.75	Open	1.00	66.08	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	123.82	109.12	252.75	Open	1.00	66.08	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	123.82	109.12	252.75	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	82.22	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.92	82.24	1,323.24	173.81	Open	1.00	49.07	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	120.97	1,335.99	183.20	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	84.37	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	84.37	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	183.79	1,775.89	291.21	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	183.79	1,632.07	291.20	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	183.80	2,153.49	291.25	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	123.81	109.12	252.74	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	123.81	109.12	252.74	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	123.81	109.12	252.74	Open	1.00	66.08	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	123.81	109.12	252.74	Open	1.00	66.08	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	123.81	109.12	252.74	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	103.03	642.61	221.79	Open	1.00	49.08	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.92	103.04	1,189.77	221.81	Open	1.00	49.07	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.37	1,317.52	184.12	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.96	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.96	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	183.08	1,796.13	289.56	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	183.08	1,669.47	289.55	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	183.09	2,171.99	289.60	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	123.36	109.45	251.71	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	123.36	109.45	251.71	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	123.36	109.45	251.71	Open	1.00	66.08	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	123.36	109.45	251.71	Open	1.00	66.08	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	123.36	109.45	251.71	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	105.71	631.27	227.96	Open	1.00	49.08	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.92	105.71	1,167.31	227.99	Open	1.00	49.07	0.00

Pump Report 10:00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.57	1,308.35	184.58	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.29	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.29	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	182.89	1,801.45	289.13	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	182.89	1,679.30	289.12	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	182.90	2,176.86	289.17	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	123.53	109.33	252.09	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	123.53	109.33	252.09	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	123.53	109.33	252.09	Open	1.00	66.08	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	123.53	109.33	252.09	Open	1.00	66.08	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	123.53	109.33	252.09	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	107.06	625.53	231.09	Open	1.00	49.08	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.92	107.07	1,155.93	231.12	Open	1.00	49.07	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.83	1,296.07	185.20	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.50	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.50	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	182.84	1,803.02	289.00	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	182.83	1,682.20	288.99	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	182.84	2,178.29	289.04	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	123.69	109.21	252.47	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	123.69	109.21	252.47	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	123.69	109.21	252.47	Open	1.00	66.08	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	123.69	109.21	252.47	Open	1.00	66.08	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	123.69	109.21	252.47	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	108.31	620.25	233.97	Open	1.00	49.08	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.92	108.31	1,145.48	233.99	Open	1.00	49.07	0.00

Pump Report 12:00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.84	1,295.73	185.21	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.53	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.53	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	182.88	1,801.84	289.10	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	182.88	1,680.02	289.09	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	182.89	2,177.21	289.14	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	119.21	112.52	242.13	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	119.21	112.52	242.13	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	119.21	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	119.21	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	119.21	112.52	242.13	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	108.34	620.12	234.04	Open	1.00	49.08	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.92	108.35	1,145.21	234.07	Open	1.00	49.07	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.86	1,294.96	185.25	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.61	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.61	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	182.80	1,804.03	288.92	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	182.80	1,684.06	288.91	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	182.81	2,179.21	288.96	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	119.07	112.63	241.80	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	119.07	112.63	241.80	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	119.07	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	119.07	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	119.07	112.63	241.80	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	108.39	619.90	234.16	Open	1.00	49.08	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.92	108.40	1,144.79	234.18	Open	1.00	49.07	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.81	1,296.98	185.15	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.40	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.40	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	182.78	1,804.69	288.87	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	182.77	1,685.29	288.86	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	182.78	2,179.82	288.91	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	119.05	112.64	241.74	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	119.05	112.64	241.74	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	119.05	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	119.05	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	119.05	112.64	241.74	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	108.24	620.56	233.80	Open	1.00	49.08	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.92	108.24	1,146.09	233.83	Open	1.00	49.07	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.73	1,300.92	184.95	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.01	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.01	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	182.64	1,808.56	288.55	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	182.64	1,692.44	288.54	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	182.65	2,183.35	288.59	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	118.86	112.78	241.30	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	118.86	112.78	241.30	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	118.86	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	118.86	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	118.86	112.78	241.30	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	84.77	719.97	179.65	Open	1.00	49.08	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	84.77	0.00	0.00	Closed	0.00	0.00	0.00

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		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.31	1,320.35	183.98	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	81.03	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	81.03	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	182.22	1,820.53	287.58	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	182.22	1,714.55	287.57	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	182.23	2,194.29	287.62	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	118.18	113.29	239.73	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	118.18	113.29	239.73	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	118.18	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	118.18	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	118.18	113.29	239.73	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	83.06	727.22	175.69	Open	1.00	49.08	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	83.05	0.00	0.00	Closed	0.00	0.00	0.00

Pump Report 17:00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.29	1,321.14	183.94	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	80.51	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	80.51	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	181.55	1,839.49	286.04	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	181.55	1,749.59	286.03	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	181.56	2,211.63	286.08	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	117.19	114.01	237.45	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	117.19	114.01	237.45	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	117.19	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	117.19	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	117.19	114.01	237.45	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	83.35	725.98	176.37	Open	1.00	49.08	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	83.35	0.00	0.00	Closed	0.00	0.00	0.00

Pump Report 18:00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	121.51	1,310.99	184.45	Open	1.00	129.12	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	79.30	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	79.30	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	181.30	1,846.54	285.47	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	181.30	1,762.60	285.46	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	181.31	2,218.07	285.51	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	117.20	114.01	237.48	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	117.20	114.01	237.48	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	117.20	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	117.20	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	117.20	114.01	237.48	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	68.62	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	68.62	0.00	0.00	Closed	0.00	0.00	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	123.36	1,225.39	188.73	Open	1.00	129.11	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	78.92	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	78.92	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.61	181.58	1,838.80	286.10	Open	1.00	166.04	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.61	181.57	1,748.30	286.09	Open	1.00	166.04	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	181.58	2,210.99	286.13	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	118.54	113.02	240.57	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	118.54	113.02	240.57	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	118.54	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	118.54	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	118.54	113.02	240.57	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	85.60	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	85.60	0.00	0.00	Closed	0.00	0.00	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.59	125.07	1,047.61	192.67	Open	1.00	129.10	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	82.20	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	82.20	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.63	175.43	0.00	0.00	Closed	0.00	0.00	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.60	175.46	2,069.27	271.99	Open	1.00	166.03	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.60	175.46	2,369.79	272.02	Open	1.00	166.02	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	122.84	109.84	250.50	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	122.84	109.84	250.50	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	122.84	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	122.84	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	122.84	109.84	250.50	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	104.19	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	104.19	0.00	0.00	Closed	0.00	0.00	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.60	83.75	0.00	0.00	Closed	0.00	0.00	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	84.64	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	84.64	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.63	163.16	0.00	0.00	Closed	0.00	0.00	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.63	163.16	0.00	0.00	Closed	0.00	0.00	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.63	163.16	0.00	0.00	Closed	0.00	0.00	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	125.44	107.92	256.50	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	125.44	107.92	256.50	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	125.44	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	125.44	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	125.44	107.92	256.50	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	110.74	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	110.74	0.00	0.00	Closed	0.00	0.00	0.00

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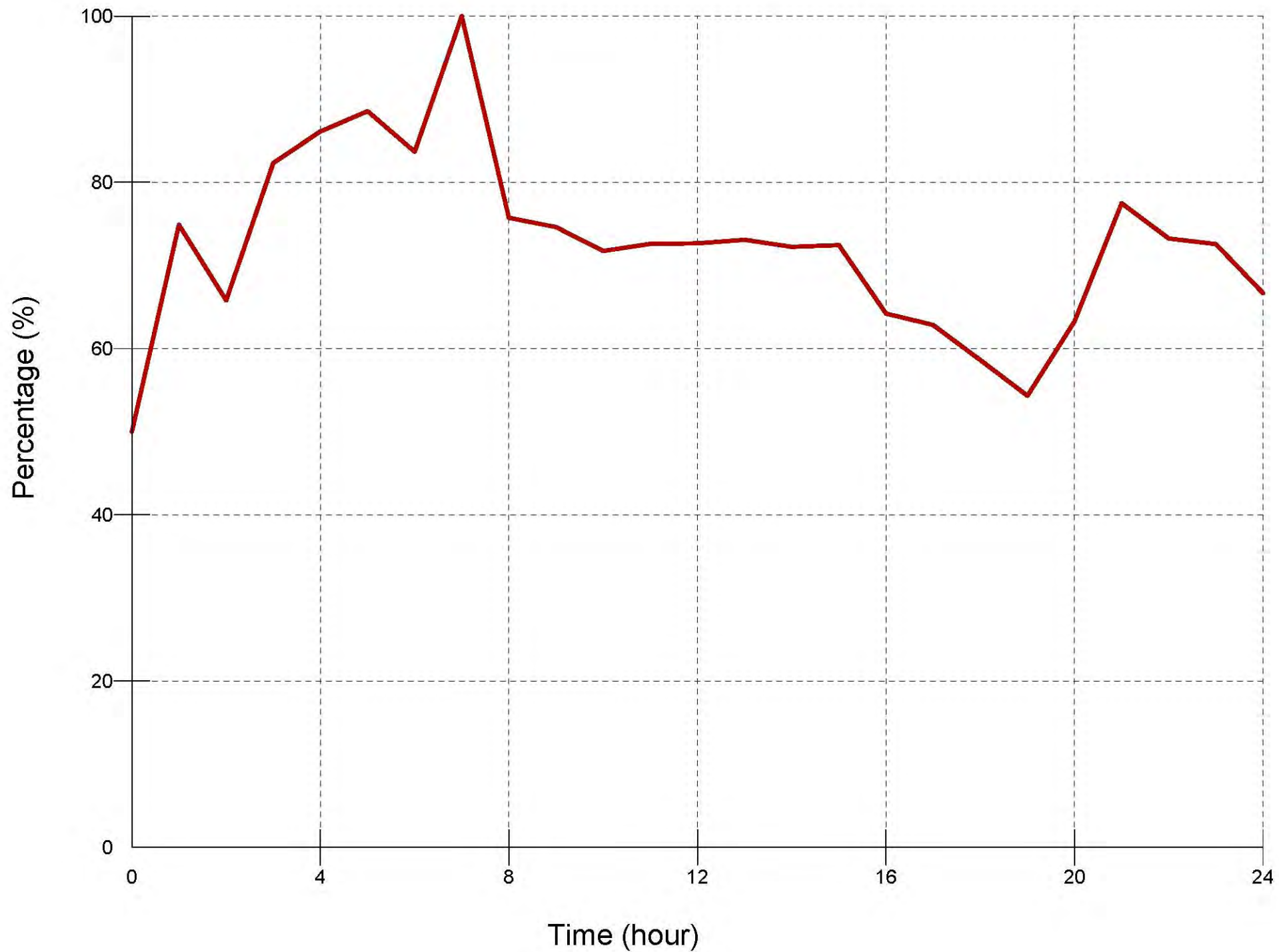
		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.60	83.21	0.00	0.00	Closed	0.00	0.00	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.55	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.55	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.63	162.07	0.00	0.00	Closed	0.00	0.00	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.63	162.07	0.00	0.00	Closed	0.00	0.00	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.63	162.07	0.00	0.00	Closed	0.00	0.00	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	125.32	108.01	256.22	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	125.32	108.01	256.22	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	125.32	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	125.32	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	125.32	108.01	256.22	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	110.66	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	110.66	0.00	0.00	Closed	0.00	0.00	0.00

		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.60	82.95	0.00	0.00	Closed	0.00	0.00	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	83.12	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	83.12	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.63	161.47	0.00	0.00	Closed	0.00	0.00	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.63	161.47	0.00	0.00	Closed	0.00	0.00	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.63	161.47	0.00	0.00	Closed	0.00	0.00	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	125.19	108.10	255.93	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	125.19	108.10	255.93	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	125.19	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	125.19	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	125.19	108.10	255.93	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	110.50	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	110.50	0.00	0.00	Closed	0.00	0.00	0.00

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		ID	Elevation (ft)	Upstream Pressure (psi)	Downstream Pressure (psi)	Flow (gpm)	Head Gain (ft)	Status	Setting	Available NPSH (ft)	Cavitation Index
1	<input type="checkbox"/>	BMESA1	1,001.00	41.60	81.99	0.00	0.00	Closed	0.00	0.00	0.00
2	<input type="checkbox"/>	HMESA1	1,001.00	41.60	82.16	0.00	0.00	Closed	0.00	0.00	0.00
3	<input type="checkbox"/>	HMESA2	1,001.00	41.60	82.16	0.00	0.00	Closed	0.00	0.00	0.00
4	<input type="checkbox"/>	RAINBOW1	820.00	57.63	161.19	0.00	0.00	Closed	0.00	0.00	0.00
5	<input type="checkbox"/>	RAINBOW2	820.00	57.63	161.19	0.00	0.00	Closed	0.00	0.00	0.00
6	<input type="checkbox"/>	RAINBOW3	820.00	57.63	161.19	0.00	0.00	Closed	0.00	0.00	0.00
7	<input type="checkbox"/>	VIACANTAMAR2	920.00	14.30	125.14	108.14	255.82	Open	1.00	66.08	0.00
8	<input type="checkbox"/>	VIACANTAMAR3	920.00	14.30	125.14	108.14	255.82	Open	1.00	66.08	0.00
9	<input type="checkbox"/>	VIACANTAMAR4	920.00	14.30	125.14	0.00	0.00	Closed	0.00	0.00	0.00
10	<input type="checkbox"/>	VIACANTAMAR5	920.00	14.30	125.14	0.00	0.00	Closed	0.00	0.00	0.00
11	<input type="checkbox"/>	VIACANTIMAR1	920.00	14.30	125.14	108.14	255.82	Open	1.00	66.08	0.00
12	<input type="checkbox"/>	WEST1	937.00	6.93	109.76	0.00	0.00	Closed	0.00	0.00	0.00
13	<input type="checkbox"/>	WEST2	937.00	6.93	109.76	0.00	0.00	Closed	0.00	0.00	0.00

Tank HAUCKMESA [BASE]



Tank OLDCOUNTRYCLUB [BASE]

