Agenda

Sacramento Suburban Water District

Facilities and Operations Committee

3701 Marconi Avenue, Suite 100
Sacramento, CA 95821

Tuesday, October 27, 2020
5:00 p.m.

In accordance with the California Department of Public Health's and the Governor's Executive Orders N-29-20 and N-33-20, the District's Boardroom is closed and this meeting will take place solely by videoconference and teleconference. The public is invited to listen, observe, and provide comments during the meeting by either method provided for below. The Chairperson will call for public comment on each agenda item at the appropriate time and all votes will be taken by roll call.

For members of the public interested in viewing and having the ability to comment at the public meeting via Zoom, an internet enabled computer equipped with a microphone and speaker or a mobile device with a data plan is required. Use of a webcam is optional. You also may call in to the meeting using teleconference without video. Please use the following login information for videoconferencing or teleconferencing:

Join the meeting from a computer, tablet or smartphone:
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Where appropriate or deemed necessary, the Facilities and Operations Committee (Committee) may take action on any item listed on the agenda, including items listed as information items. Public documents relating to any open session item listed on this agenda that are distributed to the Committee Members less than 72 hours before the meeting can be made available for public inspection in the customer service area of the District's Administrative Office at the address listed above.

The public may address the Committee concerning an agenda item either before or during the Committee's consideration of that agenda item. The Chairperson will call for comments at the appropriate time. Comments will be subject to reasonable time limits (3 minutes).

In compliance with the Americans with Disabilities Act, if you have a disability, and you need a disability-related modification or accommodation to participate in this meeting, then please contact Sacramento Suburban Water District Human Resources at 916.679.3972. Requests must be made as early as possible, and at least one full business day before the start of the meeting.

Call to Order

Roll Call

Announcements

Public Comment
This is an opportunity for the public to comment on non-agenda items within the subject matter jurisdiction of the Committee. Comments are limited to 3 minutes.

Consent Items
The Committee will be asked to approve all Consent Items at one time without discussion. Consent Items are expected to be routine and non-controversial. If any member of the Committee, staff, or interested person requests that an item be removed from the Consent Items, it will be considered with the Action Items.

1. Minutes of the September 2, 2020, Facilities and Operations Committee Meeting
   Recommendation: Approve subject minutes.

Items for Discussion and/or Action

2. Groundwater Well Asset Management Plan
   Recommendation: Receive the updated draft Groundwater Well Asset Management Plan and recommend to the full Board approving the updated Plan as a Consent Item at the November 16, 2020, regular Board meeting.

Adjournment

* *

Upcoming Meetings:
Monday, November 16, 2020, at 6:00 p.m., Regular Board Meeting

* *

I certify that the foregoing agenda for the October 27, 2020, meeting of the Sacramento Suburban Water District Facilities and Operations Committee was posted by October 23, 2020,

in a publicly-accessible location at the Sacramento Suburban Water District office, 3701 Marconi Avenue, Suite 100, Sacramento, California, and was made available to the public during normal business hours.

Dan York
General Manager/Secretary
Sacramento Suburban Water District

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Agenda Item: 1
Minutes

Sacramento Suburban Water District
Facilities and Operations Committee
Wednesday, September 2, 2020

Location:
Video and Audio Conference Only at 1-669-900-6833, or Zoom at Meeting Id #876 2976 8843

Call to Order – Videoconference/Audioconference Meeting
Chair Jones called the meeting to order at 5:08 p.m.

Roll Call
Directors Present: Dave Jones.

Directors Absent: Kathleen McPherson.

Staff Present: General Manager Dan York, Assistant General Manager Mike Huot, Amy Bullock, Matt Underwood, Dana Dean, David Espinoza, Mitchell McCarthy, and Tommy Moulton.

Public Present: Kevin Thomas.

Announcements
None.

Public Comment
None.

Consent Items

1. **Minutes of the July 15, 2020, Facilities and Operations Committee Meeting**

   Chair Jones approved Item 1.

AYES:	Jones	ABSTAINED:	
NOES:		RECUSED:	
ABSENT:	McPherson		

Items for Discussion and/or Action

2. **Transmission Main Asset Management Plan**
   Chair Jones inquired about the two transmission mains identified in the plan on El Camino Avenue and Marconi Avenue, which are 16-inch mains, and installed as oversized distribution mains. Chair Jones further inquired if staff needs to make the correction since it is the only 16-inch pipe with a connection to a 12-inch pipe for the inflow of water. Chair Jones further noted if staff could call them transmission mains based on that, in addition, they have services on them, which is not common for transmission mains.

Assistant General Manager, Mike Huot (AGM Huot) stated that staff discussed Chair Jones' concern and one of the differentiating factors between the D-Main Plan and T-Main Plan is the T-Mains are 16 inches or larger and so the 16-inch pipe is included in the T-Main AMP, which is managed similarly to the D-Main AMP.

Dana Dean (Mr. Dean) stated that the District has many short transmission main segments with services because it was the District's standard at the time. Additionally, some were installed by developers to meet the Districts' Standards for the type of development. So, the 16-inch pipes with services are identified as transmission mains based on size and staff can look into adjusting it in 5 years for the next plan.

Senior Engineer, David Espinoza (Mr. Espinoza) presented the staff report and went through a PowerPoint presentation.

Chair Jones praised staff, the document, and the tool that staff will be able to use. Chair Jones inquired on the language of the direct method. Recommending changing language to read, direct method is important, but only under the direction if the General Manager approves.

Mr. Espinoza stated that there is language in the report on page 4-32 and it reads the direct method shall be utilized as recommended by the Engineering Manager as approved through the General Manager.

Chair Jones inquired between C-Bar-C and the Antelope Transmission Pipeline and said there are very few gate valves and is wondering if more gate valves should be installed and be put into the Transmission Main Asset Management Plan.

Mr. Espinoza stated as staff assesses the need for further transmission mains or additional infrastructure to the existing mains, staff will analyze or determine the need for additional valves in the future as staff coordinates with the Operations Department.

General Manager, Dan York (GM York) stated this might be an opportunity for staff to look for some locations to install the valves; however, staff will need to budget for them ahead of time.

Chair Jones mentioned staff's efforts on the report and appreciated the detail that went into the report and recommends taking the item to the full Board as a Consent Item.

Adjournment
Chair Jones adjourned the meeting at 5:26 p.m.

Dan York
General Manager/Secretary
Sacramento Suburban Water District

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Facilities and Operations Committee

Agenda Item: 2

Date: October 27, 2020

Subject: Groundwater Well Asset Management Plan

Staff Contact: James Arenz, Senior Project Manager

Recommended Committee Action:
Receive the updated draft Groundwater Well Asset Management Plan and recommend to the full Board approving the updated Plan as a Consent Item at the November 16, 2020, regular Board meeting.

Background:
The Sacramento Suburban Water District (District) Board of Directors adopted the first Groundwater Well Asset Management Plan (GWAMP) on January 26, 2009. The 2009 GWAMP focused primarily on the borehole and well casing (below ground components) as these are the most expensive components of a groundwater well facility.

Discussion:
The 2020 GWAMP is more than just an update of the 2009 GWAMP, as it has been completely revised to focus on managing groundwater wells as well as all of their components and considers all factors pertaining to maintenance, repair, and replacement decisions. These factors include the District's well inventory, system wide risk and reliability, maintenance plan requirements, and rehabilitation and replacement cost decisions.

Brown & Caldwell (B&C) worked with staff and provided needed expertise to develop the updated GWAMP. B&C's expertise includes in depth experience and knowledge of asset management planning, risk assessment for water systems, and managing well asset inventory.

The GWAMP documents the existing groundwater wells and components, documents Levels of Service and Performance Measures, and provides a Risk Assessment to help the District prioritize maintenance, repair, and replacement needs. Additionally, the GWAMP includes Condition Assessment (CA) framework to help optimize operations and maintenance of groundwater wells.

The GWAMP serves several purposes with the main purposes as follows:

- Provide improved long term planning for the maintenance, repair, and replacement of groundwater wells.
- Bring focus to the District's existing strategy for maximizing useful life of groundwater wells.
- Provide an overarching framework for achieving the GWAMP purpose and vision using the District's 2019 Strategic Plan Goals.
- Transition from reactive to proactive maintenance, repair, and replacement of groundwater well components.

The goals of the GWAMP are to:

- Continue providing a reliable and safe supply of groundwater.
- Optimize capital investments for groundwater well facilities.
- Prioritize the need for maintenance, repair, and replacement of groundwater well facilities based on CA.
- Provide an assessment and monitoring tool that is adaptable to new and evolving technologies, management practices, and District needs.
- Inform the District's long term Capital Improvement Program (CIP).

This GWAMP is a tool for ongoing communication between the Board and staff with regard to capital expenditures for groundwater well maintenance, repair, and replacement. Furthermore, the GWAMP is a planning tool used to inform staff and the Board during annual CIP and Operations and Maintenance (O&M) budget discussions. Similar to the District's other Asset Management Plans, the GWAMP will be updated every 4 to 6 years and incorporate advances in technology, new analysis techniques, and new information found after performing CAs. The GWAMP is attached to this staff report as Attachment 1.

Fiscal Impact:

No fiscal impact at this time.

Strategic Plan Alignment:

Goal A: Provide a High Quality, Reliable Water Supply by Ensuring It Is Sustainable, Clean, and Safe

Goal B: Optimize Operational and Organizational Efficiencies

The updated Plan benefits District customers, as it is an additional tool to be used by staff to better prioritize allocation of District funds.

Attachments:

1. Draft Groundwater Well Asset Management Plan
2. Groundwater Well Asset Management Plan Presentation

Brown AND Caldwell

REPORT | Prepared for
Sacramento Suburban Water District

SACRAMENTO SUBURBAN WATER DISTRICT

Sacramento Suburban Water District Groundwater Well Asset Management Plan

October 2020 | DRAFT-FINAL

DRAFT-FINAL

Groundwater Well Asset Management Plan

Prepared for
Sacramento Suburban Water District
Sacramento, California 95821
October 2020

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DRAFT-FINAL

Groundwater Well Asset Management Plan

Prepared for
Sacramento Suburban Water District
Sacramento, California 95821
October 2020

Brown AND Caldwell
11020 White Rock Road, Suite 200
Rancho Cordova, CA 95670

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11020 White Rock Road, Suite 200
Rancho Cordova, CA 95670

T: 916-444-0123

October 5, 2020

Jim Arenz
Senior Project Manager
Sacramento Suburban Water District
3701 Marconi Avenue
Sacramento, CA 95821

154110

Subject: Sacramento Suburban Water District Draft-Final Groundwater Well Asset Management Plan

Dear Mr. Arenz:

I am pleased to submit to you this draft-final Groundwater Well Asset Management Plan (GWAMP) for Sacramento Suburban Water District (SSWD). Levels of service and performance metrics are established so that SSWD can monitor system performance with respect to the SSWD Strategic Plan goals. The GWAMP documents your existing groundwater well assets and objects. A risk analysis is performed to help SSWD prioritize improvements and maintenance for these assets and objects.

Condition assessment is an important part of this process and focuses on the highest risk assets. Condition assessment informs the recommended improvements and the implementation plan that are provided to inform SSWD staff of next steps to put this GWAMP into action.

Very truly yours,
Brown and Caldwell

Melanie Holton, PE (No. 64983)
Project Manager

MH:ds

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Acknowledgements

Brown and Caldwell (BC) acknowledges the valuable contributions made by Sacramento Suburban Water District (SSWD) in updating this Groundwater Well Asset Management Plan.

Specifically, the project team recognizes the following SSWD personnel for their efforts:

- Jim Arenz, Senior Project Manager
- Dana Dean, Engineering Manager
- Matt Underwood, Operations Manager
- Doug Cater, Production Superintendent

BC project team members included:

- Melanie Holton, Project Manager
- Paul Selsky
- Ken Worster
- Ricardo Campos
- Anne Kennedy
- Simon Watson
- Mike Wademan
- Dennis Mulacek
- Kaitlyn Konecny

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List of Abbreviations

AWWA	American Water Works Association
AM	Asset Management
BC	Brown and Caldwell
CA	condition assessment
CoF	Consequence of Failure
CIP	Capital Improvement Program
CM	Corrective Maintenance
CMMS	Computerized Maintenance Management System
CMOM	Capacity, Management, Operations, and Maintenance
EPA	U.S. Environmental Protection Agency
FRP	fiberglass reinforced polyester
FTE	full time equivalent
GIS	Geographic Information System
gpm	gallons per minute
GWAMP	Groundwater Well Asset Management Plan
GWI	groundwater well inventory
HVAC	heating, ventilation, and air conditioning
IIMM	International Infrastructure Management Manual
IM	Implementation
IPWEA	Institute of Public Works Engineering Australasia
ISO	International Standards Organization
KPI	key performance indicator
LoF	Likelihood of Failure
LOS	Level of Service
LTRRWP	Long-term Rehabilitation and Replacement Well Plan
MG	million gallons
MM	Maintenance Management
MMP	Maintenance Management Plan
NETP	North East Treatment Plant
NSA	North Service Area
OSHA	Occupational Safety and Health Administration
O&M	operations and maintenance
PdM	Predicative Maintenance
PM	Preventive Maintenance
PCR	Problem, Cause, Remedy
RM	Risk Management
RPAVM	Replacement Planning and Asset Valuation Model
RRA	Risk and Resilience Assessment
R/R	Rehabilitation and Replacement
RR	Rehabilitation and Replacement
SMRP	Society of Maintenance Reliability Professionals
SOP	standard operating procedures
SSA	South Service Area
SSWD	Sacramento Suburban Water District
TBD	to be determined
TRIR	total recordable incident rate

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Section 1

Introduction

Sacramento Suburban Water District (SSWD) operates a well field and has adopted a risk-based asset management approach to decide how much to invest in the repair, rehabilitation, and replacement of its existing groundwater wells. SSWD also uses this risk-based approach to determine a maintenance management strategy to cost effectively maximize the useful life of the existing wells and to optimize the use of both recently constructed wells and wells that are reaching the end of their useful life.

To accomplish this, SSWD has updated its Groundwater Well Asset Management Plan (GWAMP) to focus on managing the well field assets while considering factors that impact rehabilitation, repair, and replacement decisions. The multiple factors include SSWD's well inventory, systemwide risk and reliability, maintenance plan requirements, and the cost of rehabilitation and replacement decisions.

1.1 GWAMP Overview

This GWAMP is the primary document that will:

- Guide SSWD's efforts to administer asset management activities associated with SSWD's groundwater well assets
- Bring focus to the strategy for improved asset management (AM)
- Provide the overarching framework for achieving the GWAMP purpose and vision using SSWD's Strategic Plan (SSWD, 2020) goals

The GWAMP serves several purposes:

1. Provides information about where the asset inventory data are located (Section 2)
2. Provides information on the established asset-related levels of service (LOS) and key performance indicators (KPI) (Section 3)
3. Provides consistent criticality criteria to determine individual asset inspection, replacement, and rehabilitation rankings (Section 4)
4. Provides a basis for a visual condition assessment and condition monitoring (Section 5)
5. Identifies maintenance management strategies to support asset management activities (Section 6)
6. Identifies asset renewal and replacement strategies and techniques (Section 7)
7. Summarizes implementation activities for moving forward (Section 8)

1.2 Sources of Information

This GWAMP update incorporates information and data from multiple sources. A data request was submitted to acquire key information needed for the GWAMP. Key information sources include:

- Computerized maintenance management system (CMMS) data hierarchy from SSWD's geographical information system (GIS)
- Preventive maintenance records
- SSWD Strategic Plan (SSWD, 2020)
- SSWD Draft 2015 Groundwater Well Facility Asset Management Plan (SSWD, 2015)

- Data/hierarchy in GIS
- SSWD 2017 Water System Master Plan (Brown and Caldwell, 2017)
- SSWD Risk and Resilience Assessment (RRA) (Brown and Caldwell, 2020 (2))

Note that the RRA is a U.S. Environmental Protection Agency (EPA)-required document mandated for all water utilities and is intended to provide high-level risk assessment of all water system components. The RRA and resulting Emergency Response Plan are separate documents from this GWAMP and intended for different uses by SSWD.

1.3 GWAMP Update Approach

The GWAMP update is a collaborative effort; SSWD staff provided input at the various meetings held throughout the life of this project. These meetings were implemented to obtain input for the sections contained within this GWAMP and included establishing a practical process for SSWD to maintain and update the GWAMP over time. The key communication activities are listed in Table 1-1.

Table 1-1. Key Project Communication Activities

Date	Purpose
October 17, 2019	Conduct kickoff meeting, and discuss data request, and maintenance, and organizational objectives
October 18, 2019	Define LOS goals and performance measures
October 25, 2019	Review well asset hierarchy and asset inventory
November 12, 2019	Define likelihood of failure (LoF) and consequence of failure (CoF) criteria; assess LoF and CoF for well assets and objects
December 9, 2019	Provide project status overview to SSWD management
January 9, 2020	Discuss maintenance management plans
February 6, 2020	Review rehabilitation and replacement analysis
May 29, 2020	Conduct condition assessment site visits

Note that there were additional follow-up working meetings and phone calls between SSWD and BC not mentioned above

1.4 Asset Management Overview

AM is a systematic process of operating, maintaining, and upgrading assets to achieve the desired return on investment while providing reliable service. This definition is in alignment with industry standards, including the International Infrastructure Management Manual (IIMM) and International Standards Organization (ISO), ISO55000. An overview of the AM process is shown on Figure 1-1. The AM progression is illustrated on Figure 1-2. The steps depicted on Figure 1-1 show the relationships between the AM elements and how these elements are related to a successful overall AM program. The AM element topics in this flow chart were covered in the meetings listed in Table 1-1. Figure 1-2 details the fundamental questions and progression sequence necessary to build an AM program. These questions are fundamental to AM, and the GWAMP was structured so SSWD staff have a methodology in place to answer these questions.

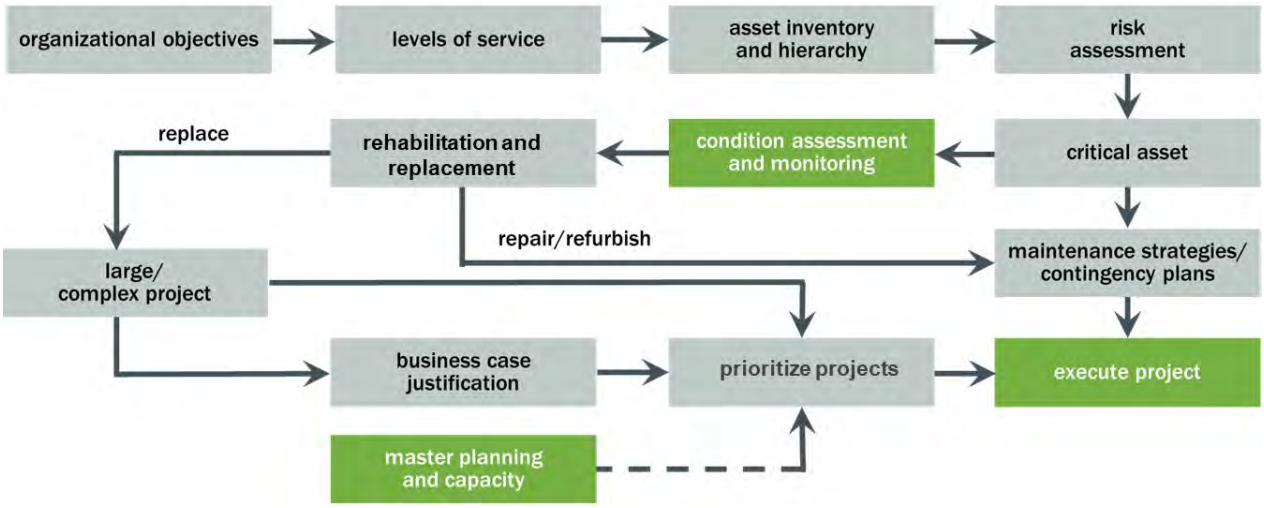

Figure 1-1. Asset management overview

Figure 1-2. Asset management progression

1.5 Nomenclature

Frequently used terminology throughout this GWAMP is defined below:

- **Asset**: In the context of this document, asset refers to an SSWD well.
- **Condition:** a measure of the physical state of an asset or object
- **Consequence:** the impact on LOS, SSWD staff, customers, or public resulting from an asset or object failure
- **Failure:** the inability of an asset or object to provide the function for which it was installed
- **Lifecycle cost:** total cost of an asset or object throughout its life (including planning, design, acquisition, operations and maintenance (O&M), rehabilitation, and disposal costs)
- **Likelihood:** the chance of an occurrence, such as an asset failure
- **Level of Service:** describes the output or objectives SSWD intends to deliver to its stakeholders (i.e. public, Board of Directors, regulators)
- **Performance:** a measure of whether the asset or object is delivering LOS requirements
- **Object:** equipment or component of an asset (further defined in Section 2.2)

Section 2

Groundwater Well Inventory

The groundwater well inventory (GWI) is a fundamental building block of SSWD's groundwater well AM program; it provides essential information regarding an asset to help decision makers choose among well repair, rehabilitation or replacement. SSWD's well asset inventory and object hierarchy and inventory are described in this section.

2.1 Groundwater Well Asset Inventory

The SSWD well asset inventory was developed by extracting the existing inventory and hierarchy stored in the GIS and used in SSWD's CMMS. Table 2-1 lists the Active and Standby wells considered for this GWAMP update by North Service Area (NSA) and South Service Area (SSA). Figure 2-1 illustrates the locations of the Active and Standby wells considered for this GWAMP update.

Table 2-1. Groundwater Well Asset Inventory

NSA			SSA		
Number	Name	Drill Date	Number	Name	Drill Date
27	Melrose/Channing	1953	2A	El Prado/Park Estates	1964
34[a]	La Cienega/Melrose	1956	3A	Kubel/Armstrong	1962
39[a]	Thomas/Elkhorn	1957	4B	Bell/Marconi	1994
52	Weddigen/Gothberg	1959	9	Ravenwood/Eastern	1949
56A	Fairbairn/Karl	2000	13	Calderwood/Marconi	1949
59A	Bainbridge/Holmes School	2000	18	Riding Club/Ladino	1951
64	Galbrath/Antelope Woods	1968	20A	Watt/Arden	1969
MC10	McClellan Park	1945	24	Becerra/Woodcrest	1952
MCC1[a]	Capehart MC-C1	1958	25	Thor/Mercury	1952
MCC3[a]	Capehart MC-C3	1960	26	Greenwood/Marconi	1953
N1	Evergreen	1957	28	Red Robin/Darwin	1954
N3	Engle	1942	30	Rockbridge/Keith	1954
N5	Hillsdale	1959	32A	Eden/Root	1999
N6A	Palm	2016	33A	Auburn/Norris	2001
N7	Rosebud	1961	35	Ulysses/Mercury	1956
N8	Field	1961	37	Morse/Cottage Park	1957
N9	Cameron	1964	40A	Auburn/Yard	2000
N10	Walnut	1964	41	Albatross/Iris	1957
N12	St. Johns	1966	43	Edison/Traux	1957
N14	Orange Grove	1968	46	Jonas/Sierra Mills	1958

Table 2-1. Groundwater Well Asset Inventory					
NSA			SSA		
Number	Name	Drill Date	Number	Name	Drill Date
N17	Oakdale	1972	47	Copenhagen/Arden	1959
N20	Cypress	1973	55A	Stewart/Lyndale	1999
N22	River College	1975	60	Whitney/Concetta	1965
N23A	Freeway	2011	65	Merrily/Annadale	1972
N24	Don Julio	1976	66	Eastern/Woodside Church	1972
N25	Sutter	1976	68	Northrop/Dornajo	1989
N26	Monument	1984	69	Hillsdale/Cooper	1977
N29	Merrihill	1957	70	Sierra/Blackmer	1976
N30	Parkoaks	1958	71	River Drive/Jacob	1998
N32A	Poker A	1989	72	River Walk/NETP	1998
N32B	Poker B	1989	73	River Walk/NETP East	1999
N32C	Poker C	1989	74	River Walk/NETP South	1998
N33[a]	Walerga	1989	76	Fulton/Fair Oaks	1960
N34	Cottage	1992	77	Larch/Northrop	1971
N35	Antelope North	2001			
N36	Verner	2007			
N38	Coyle	2013			
N39	Rutland	2016			

Note: This table is current as of July 16, 2020.

a. Standby well

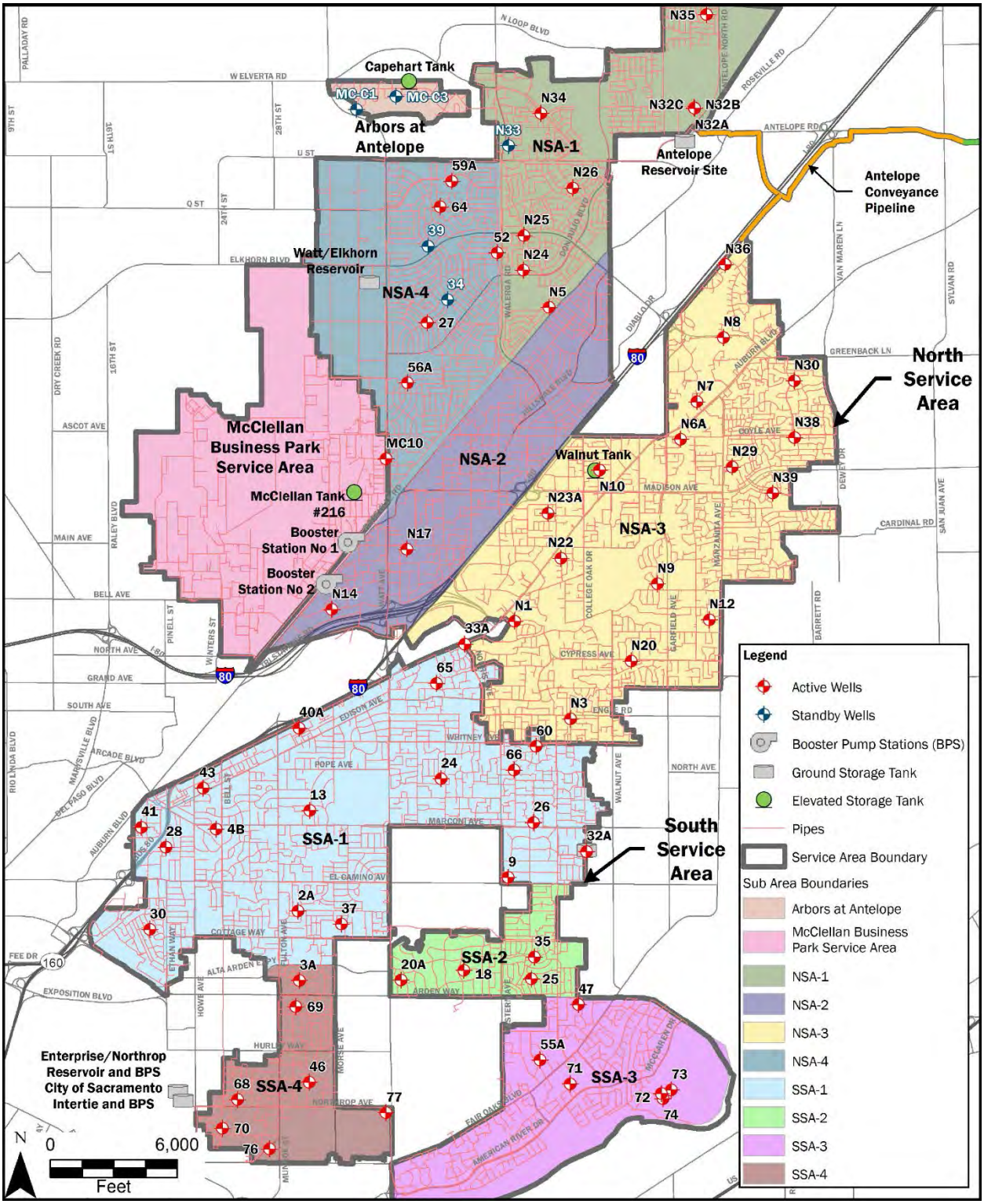

Figure 2-1. SSWD Active and Standby groundwater well asset locations

2.2 Object Hierarchy

SSWD's groundwater well object hierarchy is currently stored in the GIS. Well assets are defined as the well site, and the well objects are the components that SSWD maintains, such as mechanical equipment, electrical equipment, and structures. Well objects included in this GWAMP are equipment that meet at least one of the following criteria and are currently stored in SSWD's GIS database.

- Replacement value of $5,000 (tied to purchase order process) or more
- Useful life of three or more years
- Requires maintenance, referring to the performance of condition monitoring, preventive maintenance, predictive maintenance, or run-to-failure. In this case, the equipment can be anything SSWD maintains, such as mechanical equipment and structures
- Critical for facility operations that affect health and safety, regulatory compliance, or LOS

The criteria that triggered each of the objects for inclusion in this GWAMP are shown in Table 2-2.

Table 2-2. Criteria Triggers for Well Objects

Object	Replacement Value > $5,000	Useful Life > 3 years	Requires Maintenance	Critical to Operations
Air Release Valve		X	X	X
Alarm System	X	X	X	X
Backflow Assembly		X	X	X
Check Valve		X	X	X
Chemical Analyzer	X	X	X	X
Chemical System	X	X	X	X
Climate Control	X	X	X	X
Filter	X	X	X	X
Flow Meter	X	X	X	X
Generator	X	X	X	X
Hydraulic Valve	X	X	X	
Level Transducer		X	X	X
Motor	X	X	X	X
Motor Control Center (MCC)	X	X	X	X
Motor Operated Valve	X	X	X	X
Pressure Transducer	X	X	X	X
Pump	X	X	X	X
Remote Telemetry Unit	X	X	X	X
Sand Separator	X	X	X	X
Sound Enclosure	X	X		X
Sump		X	X	
Sump Pump		X		
Tank	X	X	X	X
Valving	X	X	X	X
Variable Frequency Drive	X	X	X	X

Some of the objects in Table 2-2 have components that are further defined, as listed below.

Well Object Hierarchy

- Backflow
  - Site Irrigation
  - Surface Wash
  - Backwash Recovery
- Chemical System
  - Chlorination System 1
  - Chlorination System 2
  - Dechlorination System
  - Fluoride System
  - Fiberglass reinforced polyester (FRP) Enclosure 1
  - FRP Enclosure 2
- Climate Control
  - Building heating, ventilation, and air conditioning (HVAC)
  - MCC HVAC
  - Generator Exhaust
  - Building Exhaust
- Filter
  - Filter 1
  - Filter 2
- Flow Meter
  - Well Discharge
  - Booster Discharge
  - Filter Discharge
  - Backwash Recovery
  - Waste Discharge
- Motor
  - Well Pump
  - Surface Wash Pump
  - Backwash Recovery Pump
  - Backwash Recirculation Pump
  - Booster Pump
- Variable Frequency Drive
  - Pump
  - Well
  - Surface Wash
  - Backwash Recovery
  - Backwash Recirculation
  - Booster

2.3 Object Inventory

The object inventory is a centralized repository of groundwater well equipment information used to track, organize, and analyze object information, including risk, condition, maintenance, rehabilitation and replacement. The information used for this GWAMP update is based on SSWD's asset and object data located in GIS. SSWD staff updated the data for all asset and objects to ensure the information is complete and accurate. The 72 Active and Standby well assets contain 1,323 objects. A summary of the number of objects by type is included in Table 2-3. A detailed object inventory is included in Appendix A. This object inventory is also provided for this GWAMP electronically under a separate cover in an MS Excel format for SSWD's use.

Table 2-3. Number of Objects by Type

Object Type	Number of Objects
Air Release Valve	98
Alarm System	9
Backflow Assembly	21
Check Valve	78
Chemical Analyzer	4
Chemical System	169
Climate Control	17
Filter	3
Flow Meter	80
Generator	17
Hydraulic Valve	49
Level Transducer	36
Motor	73
Motor Control Center	72
Motor Operated Valve	25
Pressure Transducer	75
Pump	75
Remote Telemetry Unit	66
Sand Separator	9
Sound Enclosure	10
Sump	10
Sump Pump	1
Tank	72
System Well	24
Valving	210
Variable Frequency Drive	20
TOTAL	**1,323**

2.4 Groundwater Well Inventory Recommendations

The following recommendations related to the groundwater well asset inventory are listed below for ready reference and further detailed in Section 8 of this GWAMP.

- Implement GWAMP asset and object hierarchy updates to create a complete asset list in the proper hierarchy
- Implement GWAMP asset and object inventory updates to populate appropriate data fields associated with assets
- Maintain asset and object inventory periodically updating data fields as appropriate

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Section 3

Levels of Service and Performance Measures

Levels of service are any services that a stakeholder perceives as valuable and that can be defined and measured. LOS usually relate to quality, quantity, reliability, responsiveness, environmental acceptability, and cost. LOS set expectations for managing SSWD's assets and the outcomes that SSWD strives to achieve.

3.1 LOS Goals

LOS goals are directly tied to SSWD's mission to deliver a high quality, reliable supply of water and superior customer service at the lowest responsible water rate. SSWD Strategic Plan goals, adopted as LOS in this GWAMP, include:

A. Providing a high-quality reliable water supply by ensuring it is sustainable, clean, and safe

B. Optimizing operational and organizational efficiencies

C. Ensuring fiscal responsibility and affordable rates

D. Maintaining excellent customer service

E. Retaining and recruiting a qualified and stable workforce

3.2 Performance Measures

Performance measures are specific indicators used to demonstrate how an organization is doing in relation to delivering LOS. They are written in a clear, easy-to-understand language so that they may be shared with a wide audience, both internally and externally. The data associated with a performance measure are typically collected through various systems and groups and stored in a central location for trending and reporting. Performance measures were developed as part of the GWAMP and focus on standards for SSWD's groundwater well field specifically related to asset management. The measures listed in Table 3-1 are intended to be collected, tracked, and analyzed for the use and benefit of SSWD.

The recommended priority of each of the performance measures is noted as current or future. Performance measures with a current priority are those with targets that can be measured with data that is currently collected. Performance measures with a future priority are those with targets that require data that is not yet able to be collected by SSWD. In some cases there are industry standards for performance measure targets. These industry standards are from organizations and guidelines including the American Water Works Association (AWWA) (AWWA, 2018), Occupational Safety and Health Administration (OSHA), and Society of Maintenance Reliability Professionals (SMRP) (SMRP, 2011). The targets for Performance Measures with a future priority shall be reviewed and updated on future revisions as data becomes available.

Table 3-1. Levels of Service and Performance Measures

LOS Goal	Performance Measure Number	Recommended Priority[a]	Performance Measure	Measure Definition	Target	Industry Standard
A.	A-1	Current	Supply capacity	Percent of water supply availability in terms of peak hour demand	Sum of reliable storage pumping capacity and 80 percent of Active well capacity is not less than peak hour demand from most recent maximum day	--Evaluation of North Service Area Capacity and Storage Needs (Brown and Caldwell, 2020 (1))
	A-2	Current	Regulatory compliance rate	Comply with applicable regulatory requirements (occurrence-based instead of days)	100% compliance	--
	A-3	Future	Drinking water outages-production	Percent of retail customers experiencing water outages as a result of production interruptions	0%	--
	A-4	Future	Water system pressure (system level)	Occurrences of water pressure reported outside of LOS parameters of 40 to 70 pounds per square in (psi); number of complaints reported below the LOS parameter of 40 psi.	<5/month	--
B.	B-1	Current	Overtime	Percent of O&M overtime hours relative to regular O&M hours	<5%	SMRP Section 5.5.8
	B-2	Current	Preventive maintenance (PM)/predictive maintenance (PdM) compliance	Preventive maintenance compliance (PM/PdM completed by due date)	>90%	SMRP Section 5.4.14
	B-3	Current	Direct energy usage per million gallons (MG) pumped	Measure of energy use (electricity and/or natural gas) for operating each well during the reporting period	Future state based on trended data	--
	B-4	Future	Work schedule compliance	Adherence to monthly maintenance schedule (all work orders that are scheduled); number of work orders performed as scheduled/total number of work orders	>90%	SMRP Section 5.4.4
	B-5	Future	Reactive work	Urgent work that interrupts the monthly schedule	<10%	SMRP Section 5.4.1
	B-6	Future	PM schedule compliance	The percentage of scheduled PM work orders that are completed in the week planned	>90%	
	B-7	Future	Work order schedule compliance	Adherence to weekly maintenance schedule (all work orders that are scheduled); number of work orders performed as scheduled/total number of work orders	>90%	SMRP Section 5.4.4
	B-8	Future	Condition assessment (CA) compliance rate	The percentage of condition assessment work orders planned for assets that are completed, including assessment scoring and data entry	>80%	

Table 3-1. Levels of Service and Performance Measures

LOS Goal	Performance Measure Number	Recommended Priority[a]	Performance Measure	Measure Definition	Target	Industry Standard
C.	C-1	Current	O&M Cost/MG water	O&M costs per MG produced	To be determined (TBD)	AWWA Utility Benchmarking
	C-2	Future	Capital investment progress - as planned	Percent of capital investment projects started as planned	>80%	
	C-3	Future	Asset renewal and replacement	Total actual expenditures (or total amount of funds reserved for renewal and replacement for well assets) divided by the total present worth of rehabilitation/replacement (R/R) for well assets	TBD	AWWA Utility Benchmarking
D.	D-1	Current	Customer complaints	The number of customer service complaints by category type per month. Complaints for this measure include taste, odor, color, and pressure.	TBD	AWWA Utility Benchmarking
E.	E-1	Current	Required certification rate	Percent of employees eligible for certification that have it.	100%	
	E-2	Current	Mandatory training rate	Percent of employees that complete mandatory training as planned	100%	
	E-3	Current	Employee turnover rate	Annual percentage of turnover within production department	<4.5%	AWWA Utility Benchmarking
	E-4	Current	Total recordable incident rate (TRIR)	Measure of occupational safety derived from combining the number of safety incidents and total work hours of all employees with a standard employee group; typically 100 employees working 40 hours a week for 50 weeks of the year.	1.1	OSHA

a. *Shaded cells are performance measures with recommended future priority because data needed to measure status of the performance measure is not currently available to SSWD staff.*

3.3 Level of Service and Performance Measures Recommendations

The following recommendations related to LOS and performance measures are included in this section for ready reference and further detailed in Section 8 of this GWAMP.

- Begin collecting data in support of current priority performance measures
- Finalize future performance measure definitions and begin collecting data in support of GWAMP identified measures
- Build visualizations for GWAMP performance measures as appropriate

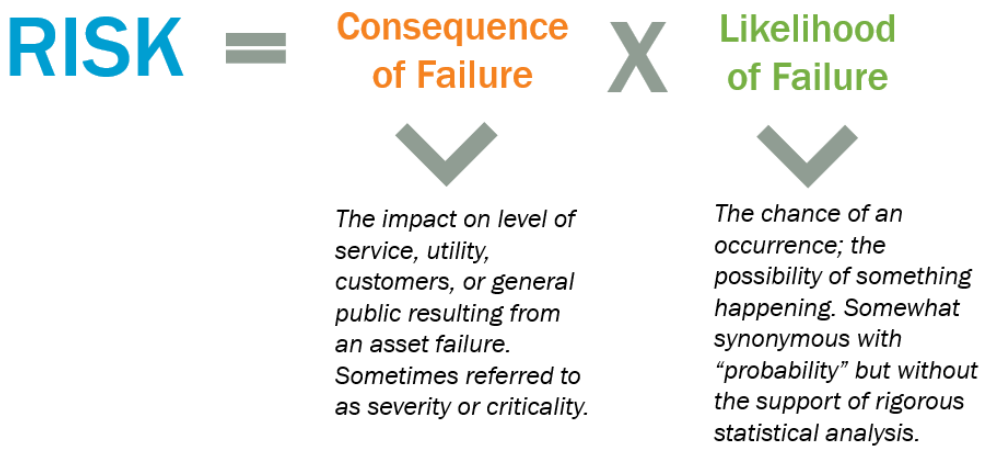
Section 4

Risk Management

Risk in terms of LoF and CoF is used to prioritize activities related to SSWD's well assets and objects. Criteria to evaluate LoF and CoF are defined and applied to develop risk scores for each of the wells assets and objects.

4.1 Definition of Risk

Risk relates to the consequence of an event happening and the probability that it will happen. Within the context of asset management, risk is defined as the "consequence" resulting from the asset failure, combined with the "likelihood" that an asset is unable to provide the function for which it was installed. Risk is calculated based on assigned CoF and LoF scores using the formula in Figure 4-1.



Source:
Implementing Asset Management: A Practical Guide, WEF NACWA, and AMWA (2007)

Figure 4-1. Risk formula

The resulting CoF and LoF scores are typically plotted on a matrix like the one depicted on Figure 4-2. Risk is then used to focus the condition assessment, formulate repairs, make replacement and rehabilitation decisions, and shape maintenance strategies as depicted on Figure 4-3.

Figure 4-2. Risk matrix

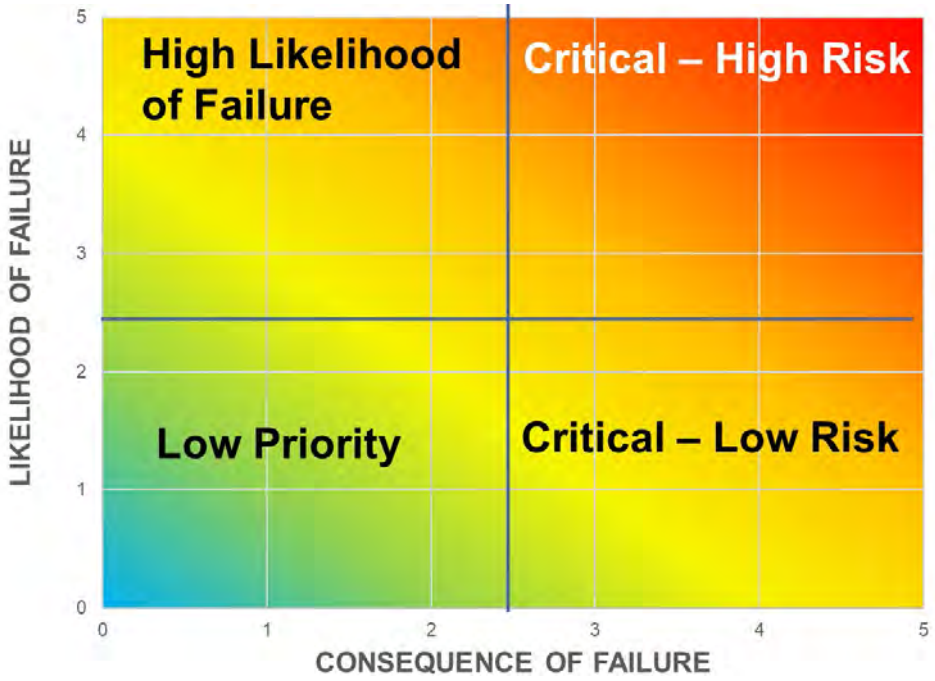


Figure 4-3. CoF and LoF matrix quadrants

4.2 Likelihood of Failure and Consequence of Failure Criteria

SSWD staff developed and vetted the LoF and CoF criteria used in this GWAMP for ease of applicability and explanation, and benefit to SSWD. The scoring scale is weighted based on percentage; criteria with a greater significance to SSWD were weighted higher. These criteria can be used to identify critical groundwater well assets and objects.

4.2.1 Likelihood of Failure Criteria

The LoF criteria developed for groundwater wells describe the possibility of an asset or object failure occurring. The criteria definitions, scoring, and weighting are detailed in Table 4-1.

Table 4-1. Likelihood of Failure (LoF) Criteria

Criteria	Definition	Score					Weight
		1 - None	2 - Low	3 - Moderate	4 - High	5 - Severe	
Planned Maintenance History [a]	Asset Planned Maintenance combined with compliance percentage for all objects (completed vs. scheduled) over the past 9 years	Greater than 90%	75% to 90%	50% to 74%	25% to 49%	Less than 25%	30
Remaining Useful Life	An asset's or object's time remaining before it no longer provides the required LOS	New or like new	Near 75%	Near 50%	Near 25%	Near 10%	25
Complexity	Number of critical components (objects) that would cause an asset (well) to fail	10 or less	11 to 13	14 to 16	17 to 19	20 or more	25
Critical Component Failure History [a]	Number of corrective maintenance (CM) work orders for critical objects in past 2 years	0	1	2	3 or 4 OR 2 for the same object	5 or more OR 2 or more for at least 2 different objects	20

a. *Historical data source is a future-state criterion. Data exists, but not in a readily usable format for review. For this scoring analysis, staff will estimate the score based on system knowledge and available records.*

The approach to scoring each of the assets and objects for each of the LoF criteria is described in Table 4-2.

Table 4-2. Consequence of Failure (CoF) Criteria Scoring Approach		
Criteria	**Asset**	**Object**
Planned Maintenance History	• Site-specific perspective • Reviewed PM spreadsheet provided by SSWD • Evaluated work completed in 2018 and 2019 by well run • Assigned overall well run score for each well asset	• Evaluated work completed in 2018 and 2019 by well run • Assigned object scores (if available) based on percent completed of object-specific PM by well run • Assigned well run percent completed to objects without a defined well run object PM
Remaining Useful Life	• Well-specific perspective • Based on 55-year life of well	• SSWD provided install dates for objects based on options (1 to 3) • Estimated useful life values based on industry standards and adjusted by SSWD for objects • Based on install dates of objects compared to estimated useful life values and verified by install/rehab/replacement dates with SSWD

Complexity	• Site-specific perspective
	• Based on number of critical components (objects) per well
		• SSWD provided global scores for objects
		• Scoring based on object type based on complexity of the object as it relates to failure possibility.
		  • Score '1': Low
		  • Score '3': Moderate
		  • Score '5': High

Critical Component Failure History [a]	• Site- and well-specific perspectives
	• Future-state item when additional data is collected
	• SSWD scored qualitatively
		• SSWD scored each object qualitatively
		• Mixed global and exceptions by object type
		• Scoring assigned globally based on failure history
		  • Score '1': Low
		  • Score '2': Moderate
		  • Score '3': Frequent
		  • Mostly '1' scores due to incomplete history

a. *Historical data source is a future-state criterion. Data exists, but not in a readily usable format for review. For this scoring analysis, staff will estimate the score based on system knowledge and available records.*

4.2.2 Consequence of Failure Criteria

The CoF criteria developed for groundwater wells identify the impact an asset or object failure may have on the levels of service. The criteria definitions, scoring, and weighting are detailed in Table 4-3.

Table 4-3. Consequence of Failure Criteria

Criteria	Definition	Score					Weight
		1 – None	2 – Low	3 - Moderate	4 – High	5 – Severe	
Public and Employee Safety and Regulatory Compliance	Ensure public and employee health and safety by conducting operations in accordance with statutory and regulatory requirements	No injury or self-aid required. 100% regulatory compliance.	Injury requiring basic first aid. Minor regulatory incident that is not reportable.	Injury requiring medical care. Reportable incident with no enforcement action.	Injury requiring admission to a hospital. Reportable violation with potential enforcement action.	Serious injury or death. Enforcement action with potential fines and/or legal action.	30
Available Capacity	Current (2020) production capacity (gallons per minute [gpm])	Less than 500	500 – 1,000	1,001-1,500	1,501- 2,000	>2,000	25
Cost of Failure	Total cost to repair or replace assets or objects and return to pre-failure conditions.	Less than $5,000	$5,000 to $50,000	$50,001 to $200,000	$200,001 to $500,000	Greater than $500,000	25
Reliability: System Disruption	Asset or object failures that may impact system(s).	Single object disruption		Asset wide disruption		Impacts multiple assets or service areas	10
Reliability: Time to Repair/Replace	Time required to return assets or objects to pre-failure conditions.	Outage resolved in less than 1 week	Outage resolved in less than 1 month	Outage resolved in less than 3 months	Outage resolved in less than 9 months	Outage takes greater than 9 months to resolve	10

The approach to score each of the assets and objects for each of the CoF criteria is described in Table 4-4.

Table 4-4. Consequence of Failure (CoF) Criteria Scoring Approach		
Criteria	**Well Asset**	**Object**
Public & Employee Safety and Regulatory Compliance	• Well-specific perspective • Based on ability to meet demands • Scores ranged from 1 to 3 • Score of 3 for well 32A • Score of 2 for wells N26, MC10, 24, 32, 9, and 26 • Score of 1 for all other wells	• SSWD provided global scores for objects • Score of 1, 3, 4, or 5 based on severity of injury by type of object failure or regulatory impact
Available Capacity	• Standby wells (34, 39, MC-C1, MC-C3, and N33) will be scored as 1 • Score of 1 for <500 gpm • Score of 2 for >500 to 100 gpm • Score of 3 for 1,001 to 1,500 gpm • Score of 4 for 1,501 to 2,000 gpm • Score of 5 for >2,000 gpm	• Objects inherit asset score
Cost of Failure	• Well-specific perspective • Dependent on well construction (depth of well, length of screen, diameter, etc.) • Well rehab costs increase with well depth and diameter • Scores of 2 and 3 for rehab – useful life < well age • Scores of 4 and 5 for replacement – useful life > well age	• SSWD provided global scores for objects • Object score typically is the same for each well and not vary by well/location
Reliability: System Disruption	• Well-specific perspective • Based on area of the water system and future blending • Score of 3 for impacts to other agencies	• SSWD provided global scores for objects • Detailed scoring provided by SSWD for objects with noted exceptions • Score of 1, 3, or 5 based on impact on well operation
Reliability: Time to Repair/Replace	• Well-specific perspective • Scores of 5 for all	• SSWD provided global scores for objects • Scores assigned by object for either repair or replacement • Object score typically the same for each well and does not vary by well/location

4.3 Risk Analysis Scoring Process

The standardized LoF and CoF criteria were used to identify critical assets and objects as follows:

- **Step 1.** Apply the LoF and CoF criteria at the well asset level.
- **Step 2.** Apply the LoF and CoF criteria at the well object level using the asset level scoring as a starting point.
- **Step 3.** Identify assets and objects that have a high LoF and CoF.
- **Step 4.** Calculate a risk score for each asset and object by multiplying the LoF score by the CoF score.
- **Step 5.** Review the preliminary scores with SSWD staff and revise based on feedback.
- **Step 6.** Prioritize the assets and objects based on the revised LoF and CoF results.

An MS Excel workbook was developed for the risk analysis with two key worksheets to calculate risk: asset risk analysis and object risk analysis. Additional worksheets are included to graph the results on risk matrices. All assets and objects are included in this workbook. This risk analysis workbook can be updated in the future as assets and object attributes and related criteria scores change.

4.4 Risk Analysis Results

The outcome of risk analysis process is a risk-ranking of assets and objects that can be used to prioritize condition assessment activities, O&M activities, spare parts inventories, and risk-mitigation projects (such as R/R). Risk ratings are also used to determine the priority and timeframe for corrective actions as part of capital planning.

4.4.1 Critical Well Assets

Critical assets are those assets that are likely to result in a more significant financial, environmental, and social cost in terms of impact on organizational objectives. A summary of the well asset likelihood and CoF scoring is provided on Figure 4-4. The following critical well assets received LoF and CoF scores of 3 or greater:

- WE32A – Eden/Root
- WE4B – Bell/Marconi
- WE55A – Stewart/Lynndale
- WE71 – Rodney T Franz
- WE33A – Auburn/Norris
- WE40A – Auburn/Yard

The critical assets listed above include several of the largest capacity wells in the SSWD system. These assets also have the potential for significant system disruption in the event of a failure. The critical assets have an average calculated remaining useful life of 33.5 years; however, it is important to assess the condition and performance of these wells as described in Section 5 of the GWAMP to identify early signs of asset deterioration.

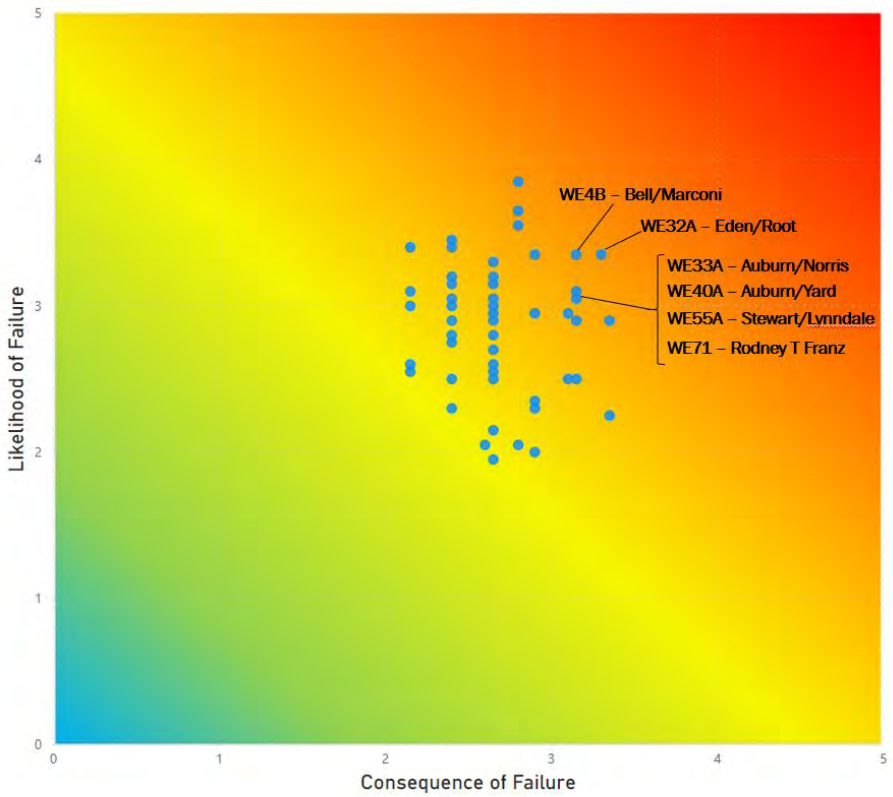


Figure 4-4. Groundwater well asset risk matrix

4.4.2 Critical Objects

A summary of the object likelihood and consequence of failure scoring is provided on Figure 4-5. A list of critical objects was developed based on establishing a threshold value of 3 for CoF and LoF, as shown in Table 4-5. These threshold values were established for the initial list of critical assets and may be reevaluated periodically as part of the GWAMP update. The list of critical objects encompasses 27 groundwater wells and includes objects such as hydraulic valves, motors, motor control centers, wellheads, and tanks. The detailed list of objects' LoF and CoF scores is included in Appendix B.

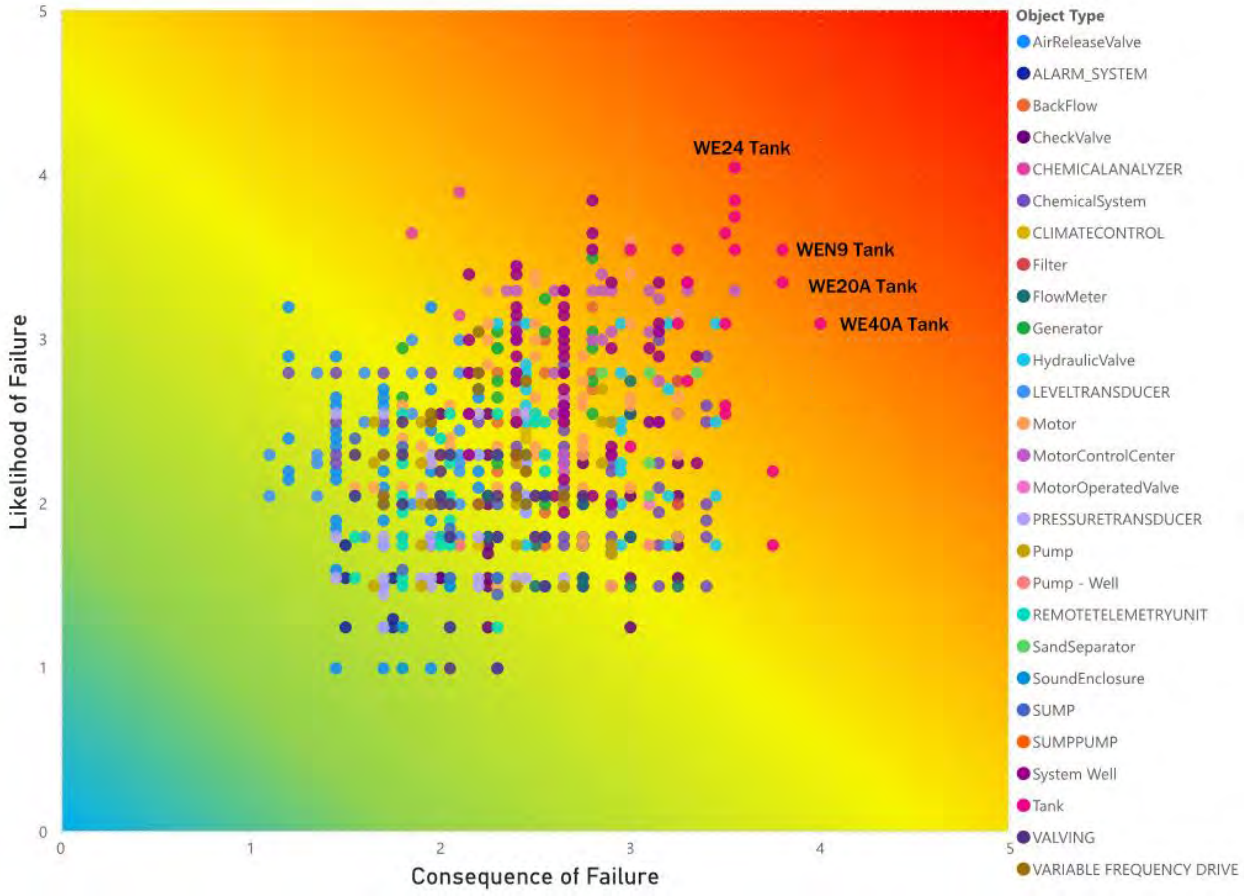


Figure 4-5. Groundwater well object risk matrix

Table 4-5. Critical Objects						
Well	Well Name	Equipment ID	Object Name	LoF	CoF	Risk (LoF x CoF)
WE18	RIDING CLUB / LADINO	TA18-1	Tank 1	3.55	3.55	12.60
WE20A	WATT / ARDEN	TA20A-1	Tank 1	3.35	3.80	12.73
WE24	BECERRA / WOODCREST	TA24-1	Tank 1	4.05	3.55	14.38
WE24	BECERRA / WOODCREST	TA24-2	Tank 2	3.85	3.55	13.67
WE26	GREENWOOD / MARCONI	TA26-1	Tank 1	3.55	3.55	12.60
WE26	GREENWOOD / MARCONI	TA26-2	Tank 2	3.55	3.55	12.60
WE32A	EDEN / ROOT	HV32A-1	HydraulicValve1	3.10	3.20	9.92
WE32A	EDEN / ROOT	MC32A-1	MotorControlCenter1	3.05	3.10	9.46
WE32A	EDEN / ROOT	SW-32A	System Well 1	3.35	3.30	11.06
WE33A	AUBURN / NORRIS	SW-33A	System Well 1	3.05	3.15	9.61
WE35	ULYSSES / MERCURY	TA35-1	Tank 1	3.55	3.55	12.60
WE40A	AUBURN YARD	SW-40A	System Well 1	3.05	3.15	9.61
WE40A	AUBURN YARD	TA40A-1	Tank 1	3.10	4.00	12.40
WE4B	BELL / MARCONI	MC4B-1	MotorControlCenter1	3.05	3.15	9.61
WE4B	BELL / MARCONI	SW-04B	System Well 1	3.35	3.15	10.55
WE55A	STEWART / LYNNDALE	HV55A-1	HydraulicValve1	3.10	3.45	10.70
WE55A	STEWART / LYNNDALE	MC55A-1	MotorControlCenter1	3.25	3.15	10.24
WE55A	STEWART / LYNNDALE	MO55A-1	MOTOR 01	3.15	3.25	10.24
WE55A	STEWART / LYNNDALE	SW-55A	System Well 1	3.10	3.15	9.77
WE56A	FAIRBAIRN / KARL	HV56A-1	HydraulicValve1	3.10	3.20	9.92
WE59A	BAINBRIDGE / HOLMES SCHOOL	HV59A-1	HydraulicValve1	3.10	3.45	10.70
WE59A	BAINBRIDGE / HOLMES SCHOOL	MC59A-1	MotorControlCenter1	3.05	3.15	9.61
WE65	MERRILY / ANNADALE	TA65-1	Tank 1	3.65	3.50	12.78
WE66	EASTERN / WOODSIDE CHURCH	TA66-1	Tank 1	3.65	3.50	12.78
WE68	NORTHROP / DORNAJO	MC68-1	MotorControlCenter1	3.30	3.10	10.23
WE70	SIERRA / BLACKMER	TA70-1	Tank 1	3.10	3.25	10.08
WE71	RODNEY T FRANZ	HV71-1	HydraulicValve1	3.10	3.45	10.70
WE71	RODNEY T FRANZ	MC71-1	MotorControlCenter1	3.05	3.15	9.61
WE71	RODNEY T FRANZ	MO71-1	MOTOR 01	3.15	3.25	10.24
WE71	RODNEY T FRANZ	SW-71	System Well 1	3.10	3.15	9.77
WE73	RIVER WALK / NETP EAST	HV73-1	HydraulicValve1	3.10	3.45	10.70
WE73	RIVER WALK / NETP EAST	MC73-1	MotorControlCenter1	3.05	3.15	9.61
WE74	RIVER WALK / NETP SOUTH	HV74-1	HydraulicValve1	3.10	3.45	10.70
WE74	RIVER WALK / NETP SOUTH	MC74-1	MotorControlCenter1	3.05	3.15	9.61
WE74	RIVER WALK / NETP SOUTH	MO74-1	MOTOR 01	3.15	3.25	10.24
WEMC-C1	CAPEHART MC-C1	TAMC-C1-1	Tank 1	3.35	3.30	11.06

Table 4-5. Critical Objects						
Well	Well Name	Equipment ID	Object Name	LoF	CoF	Risk (LoF x CoF)
WEN22	RIVER COLLEGE	TAN22-1	Tank 1	3.55	3.25	11.54
WEN24	DON JULIO	TAN24-1	Tank 1	3.10	3.50	10.85
WEN3	ENGLE	TAN3-1	Tank 1	3.75	3.55	13.31
WEN32A	POKER A	MCN32A-1	MotorControlCenter1	3.30	3.30	10.89
WEN32B	POKER B	MCN32B-1	MotorControlCenter1	3.30	3.55	11.72
WEN35	ANTELOPE NORTH	MCN35-1	MotorControlCenter1	3.05	3.15	9.61
WEN9	CAMERON	TAN9-1	Tank 1	3.55	3.80	13.49

4.4.3 Risk Management Recommendations

The following recommendations related to risk management are included in this section for ready reference and further detailed in Section 8 of this GWAMP.

- Review and refine list of critical assets and objects
- In coordination with development of AWIA RRA/ERP, document existing and develop (if not previously developed) risk mitigation strategies

Section 5

Condition Assessment

Monitoring and assessing asset condition provides essential information to decision makers regarding when to repair, rehabilitate, and replace assets. Condition assessment also informs asset managers on how best to operate and maintain an asset and how to assess the useful life of an asset.

5.1 Condition and Performance Ratings

Standardized condition and performance ratings are used to ensure consistent documentation of asset condition at all SSWD groundwater wells. A standardized approach supports a consistent method of planning and prioritizing R/R decisions. When conducting visual inspection, the assessment team can document its findings using the standardized condition assessment format, which includes the condition ratings listed in Table 5-1 and the performance ratings in Table 5-2.

Table 5-1. Condition Ratings

Rating	Description
1	Excellent
2	Fair - Slight visible degradation
3	Moderate - Visible degradation
4	Poor - Asset compromised
5	Failed - Asset severely compromised

Table 5-2. Performance Ratings

Rating	Description
1	Excellent - Asset functioning as intended
2	Fair - In service, but higher than expected O&M
3	Moderate - In service, but function is impaired
4	Poor - In service, but function is highly impaired
5	Failed - Asset is not functioning as intended

Based on the results of the visual inspection or condition monitoring, a recommendation should be made using the recommendation ratings in Table 5-3 for any needed further action.

Table 5-3. Recommendation Ratings	
Rating	Description
1	No immediate action required
2	Initiate more detailed inspection
3	Schedule corrective action
4	Replace/Refurbish
5	Immediate corrective action required

5.2 Visual Inspection Methodology

Visual inspection includes the use of visual, auditory, tactile, and olfactory senses to document the physical state of an asset (i.e., condition) and determine whether an asset is delivering its LOS requirements (i.e., performance). At a minimum, the following are noted by the assessment team if observed during an inspection:

- Vibration
- Abnormal temperature
- Noise
- Corrosion
- Wear and material loss
- Leaking
- Loose or damaged components
- Cavitation
- Unusual odors

Based on these sensory observations and knowledge of the asset's desired LOS, each object is given a 1 to 5 rating based on its condition and a 1 to 5 rating based on its performance at the time of observation. Any recommended follow-up actions, including repair, rehabilitation or replacement, are also noted. Visual condition assessment guidelines, including assessment forms, were developed and are included in Appendix C. The forms further define condition scoring for different assets, including mechanical, electrical, and structural.

5.3 Visual Condition Assessment Inspection Results

To update the GWAMP, visual inspections were conducted at critical groundwater wells where assets and objects were identified during the risk assessment as having a high CoF and LoF. Site accessibility was also considered. These wells were selected collaboratively with SSWD staff, and the following six wells were selected for inspection:

- WE32A – Eden/Root
- WE4B – Bell/Marconi
- WE71 – Rodney T Franz
- WE26 – Greenwood /Marconi
- WEN24 – Don Julio
- WE24 – Becerra/Woodcrest

More than 145 objects were assessed at the six wells. The key findings for objects requiring further action from SSWD are summarized in Table 5-4. Detailed condition assessment results for all the objects that were assessed are included in Appendix D. Recommendations and candidate improvements to address these defects are discussed in Section 7.

Table 5-4. Condition Assessment Findings and Recommendations

Well	Object	Condition Rating	Performance Rating	Issues/Findings	Recommendation Ratings
WE24 – Becerra/Woodcrest	MC24-1: Motor Control Center 1	4	2	Original 1952 installation is obsolete and passed its useful life	4 – Replace/ refurbish
	AR24-2: Air Release Valve 2	3	2	Surficial corrosion at joint and in poor condition. May need to recoat and check/replace gasket.	3 – Schedule corrective action
WE26 – Greenwood/Marconi	SS26-1: Sand Separator 1	5	5	Failed (currently planned for replacement)	4 – Replace/ refurbish
	CV26-1: Check Valve 1	5	5	Failed (currently planned for replacement)	4 – Replace/ refurbish
WE32A – Eden/Root	PU32A-4: Pump 4 (Booster Pump)	3	2	Discharge head showing signs of wear/leaking around packing gland, shaft wear	3 – Schedule corrective action
	CV32A-2: Booster Pump Check Valve	2	2	Leaking around the swing arm shaft. May need to replace the seal.	3 – Schedule corrective action
	Cascade Aerator	2	1	Issue with aerator causing humidity levels and condensation in the well causing corrosion in surrounding equipment	2 – Initiate more detailed inspection
WE4B – Bell/Marconi	PU4B-1 Well Pump	3	2	Discharge head showing signs of wear/leaking around packing gland, shaft wear	3 – Schedule corrective action
	LT4B-2 Level Transducer 2	4	2	Corrosion on the junction box. May need to recoat and/or replace junction box.	3 – Schedule corrective action
WEN24 – Don Julio	FRP Enclosure Fan for Chlorination System	4	2	Corrosion on fan. May need to recoat and/or replace fan.	3 – Schedule corrective action

5.4 Condition Monitoring

Condition monitoring involves tracking specific asset parameters (i.e., vibration or temperature) over time with the goal of identifying changes that may indicate an impending failure. Figure 5-1 illustrates how condition monitoring may be used to predict an asset failure over time.

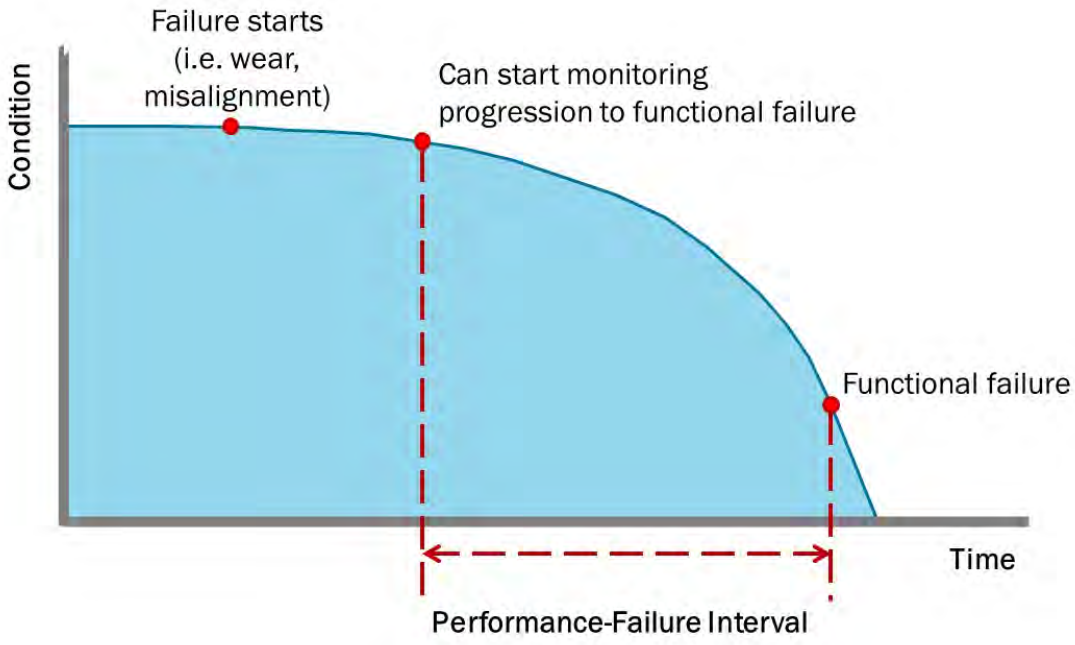


Figure 5-1. Performance-Failure curve

Condition monitoring is used as part of a predictive maintenance strategy to predict and avoid unanticipated failures and intervene before catastrophic failures occur. Some of the parameters that may be monitored by SSWD to predict asset failure include:

- Vibration
- Bearing wear
- Pressure
- Flow (running at full speed)
- Amperage (motors)
- Insulation resistance (motors)
- Run times (motors)
- Voltage (motors)
- Temperature (bearings, housing)

SSWD currently monitors some of these parameters. Condition monitoring activities conducted by SSWD are described in Section 6 as part of the Groundwater Well Maintenance Management Plan (Appendix E).

5.5 Condition Assessment Recommendations

The following recommendations related to condition assessment are included in this section for ready reference and are further detailed in Section 8 of this GWAMP.

- Create standardized data collection framework, reports, and tools
- Develop and implement a plan to visually inspect the remaining 66 wells whose condition was not assessed under the GWAMP
- Develop, document, and implement condition monitoring plan described in Section 5 to conduct condition monitoring of high consequence objects
- Analyze condition assessment and condition monitoring data

Section 6

Maintenance Management

Maintenance is defined as the actions taken to sustain a desired level of asset performance. A successful maintenance program is intended to:

- Efficiently and effectively do the right thing at the right time
- Increase overall asset availability
- Reduce the volume, severity, and frequency of emergency work undertaken with little to no planning/scheduling

The GWAMP focuses on maintenance management activities that directly support and sustain assets and objects operated and maintained by SSWD. Maintenance activities typically fall into one of the following categories:

- Preventive Maintenance– action performed to prevent failure and preserve an asset's function (time-based)
- Predictive Maintenance – condition monitoring activities used to predict failure (condition-based)
- Corrective Maintenance – remedial actions performed as a result of failure to restore an asset or component to a specified condition (failure-based)
- Emergency Maintenance – immediate remedial actions performed as a result of failure of critical equipment during a scheduled operating period.

From discussions with SSWD staff, most of the maintenance work performed currently by SSWD is either preventive, emergency, or corrective. The intent of implementing this GWAMP is to reduce the emergency maintenance work. As such, the GWAMP will focus on the preventive maintenance activities for the groundwater wells in an effort to reduce corrective and emergency work. As the program matures, and condition data is collected staff will look for ways to optimize the maintenance program through the implementation of predictive maintenance activities and adjusting preventive maintenance frequencies.

6.1 Recommended Preventive Maintenance

PM is an equipment maintenance strategy based on replacing or restoring an asset at a fixed interval (calendar or hours of operation) that is planned and scheduled. The Groundwater Well Maintenance Management Plan (MMP) identifies the recommended specific PM activities that are to be performed at each well and how often they should be performed. Maintenance optimization should be completed as the program matures and more asset data is made available to determine if a maintenance activity should be adjusted.

The recommended activities performed for each well are determined based on key differentiating characteristics of the well sites, including chemical analyzer type, presence of a generator, and whether the well is in the NSA or SSA. PM activities are performed at the following frequencies: weekly, monthly, 3 months, 6 months, 1 year, 3 years, and 5 years. The activities performed at each of these frequencies are summarized herein. The full Groundwater Well MMP is included as Appendix E.

6.1.1 Weekly PM Activities

Weekly rounds are performed at each well and include visual checks of key equipment at each site. NSA weekly rounds are performed on Monday and Thursday. SSA weekly rounds are performed on Monday, Wednesday and Friday.

6.1.2 PM Activities Performed Monthly

There are two activities associated with the monthly frequency PM:

- **Chemical Analyzer PM** – Monthly activities vary based on the chemical analyzer type at each site. Prominent chemical analyzers are calibrated and are at wells 32A, N6A, and N39 only. Well N36 has a Hach chemical analyzer that requires reagent replacement.
- **Generator Exercise with No Load** – Inspect and exercise the generators at the following wells: 33A, 40A, 4B, 55A, 56A, 59A, 66, 72, N10, N17, N23A, N29, N32 (supplies power to N32A, N32B, and N32C) , N35, N38, N39, N5.

6.1.3 PM Activities Performed Every 3 Months

There are two activities associated with the 3-month frequency PM:

- **Generator Exercise with Load** – Inspect and exercise under load the generators at the following wells: 33A, 40A, 4B, 55A, 56A, 59A, 66, 72, N10, N17, N23A, N29, N32 (supplies power to N32A, N32B, and N32C), N35, N38, N39, and N5.
- **Tesco Endurance Variable-Frequency Drive (VFD) PM –** Wells with Endurance VFDs include N6A and N25.

6.1.4 PM Activities Performed Every 6 Months

The activities associated with the 6-month frequency PM were developed based on well characteristics related to chemical analyzer type and presence, as well as HVAC and exhaust fan presence on site. Table 6-1 contains the 6-month frequency PMs.

Table 6-1. 6-Month Frequency PM

Well characteristics	Wells included
Prominent Analyzer (both an HVAC and exhaust fan)	N39
Prominent Analyzer (just an exhaust fan)	32A
Hach Analyzer (both an HVAC and exhaust fan)	N36
No Analyzer (both an HVAC and exhaust fan)	33A, 40A, 56A, 59A, 72
No Analyzer (just exhaust fan)	N20
No Analyzer (just an HVAC)	4B, 55A, 71, N5, N10, N34, N35, N38

6.1.5 PM Activities Performed Annually (1-year)

The activities associated with the 1-year frequency PM were developed based on whether a site has a generator and/or a fluoride system. Table 6-2 contains the annual frequency PM. Additionally, wells N6A and 32A are the only two wells with the annual PM activity “Treatment Facility Backwash Tank/Sump”.

Table 6-2. 1-Year Frequency PM	
Well characteristics	Wells included
With generator	
SSA	66, 33A, 40A, 4B, 72, 55A
NSA	56A, 59A, N10, N17, N23A, N29, N32 (supplies power to N32A, N32B, and N32C), N35, N38, N39, N5
No generator	
SSA	All other SSA wells not listed above
NSA	All other NSA wells not listed above
Other	
Treatment Facility Backwash Tank/Sump	32A, N6A

6.1.6 PM Activities Performed Every 3 Years

PM activities performed once every 3 years were developed based on the chemical analyzer type at each site and on the number of hydropneumatic tanks at each site. Table 6-3 contains the 3-year-PM frequencies.

Table 6-3. 3-Year PM Frequency Breakdown	
Well characteristics	Wells included
Prominent Analyzer with no Tank	32A, N39, N6A
No Analyzer + 1 tank	18, 20A, 34, 35, 40A, 56A, 64, 65, 66, 69, 70, 72, 77, MCC1, N17, N22, N24, N3, N9
No Analyzer + 2 tanks	24, 26
Hach Analyzer with no tank	N36

6.1.7 PM Activities Performed Every 5 Years

PM activities are performed once every 5 years at the following sites with hydropneumatic tank air compressors: 18, 20A, 34, 35, 40A, 56A, 64, 65, 66, 69, 70, 72, 77, MCC1, N17, N22, N24, N3, N9, 24, and 26.

6.2 Corrective Maintenance

Corrective work that is needed at a well is typically identified through routine inspections or PM tasks and is completed prior to failure to restore its function. Operational data is also evaluated; any deviations found may indicate that corrective maintenance is required. Corrective work orders should be tracked in the CMMS.

6.3 Maintenance Staffing

The MMP in Appendix E lists the hours required for each PM. These hours are used to estimate the annual full-time employee equivalent (FTE) required to complete the PM work. An FTE is based on 2,080 total work hours each year. To determine the number of hours an employee is available to complete PM and other activities, the annual hours related to the non-maintenance activities are

deducted from the total work hours as shown in Table 6-4. Non-maintenance activities deductions tend to change over time given the evolving seniority of the staff and mandatory training requirements. The FTE for operations is 1,500 hours.

Using 1,500 hours of available time for operations, the FTE requirements for completing all annual maintenance activities is 4.5. It is important to note that this does not include travel time to each site. It only accounts for the actual time spent completing the maintenance activity. Additionally, additional staffing time is needed to address corrective maintenance and completing special projects.

Table 6-4. Calculation of Available Time for 1 FTE

Activity type	Available hours
Total activities	2,080
Non-maintenance activities [a]	580
PM and other activities	1,500

a. Training, vacation, sick, holiday

6.4 Maintenance Management Recommendations

The following recommendations related to LOS and performance measures are included in this section for ready reference and further detailed in Section 8 of this GWAMP.

- Enter current PM activities in CMMS
- Develop PM standard operating procedures (SOP) template and use template to consistently document PM activities for objects
- Develop annual maintenance schedule
- Document all maintenance activities
- Develop and implement the maintenance optimization process
- Develop and implement a failure analysis of assets

Section 7

Rehabilitation and Replacement

The GWAMP details the strategy for asset Rehabilitation and Replacement (R/R). SSWD can use this data to set and justify funding levels for groundwater well R/R, proactively budget for annual groundwater well R/R projects, provide input to the LoF analysis, and support justifying and prioritizing projects in the Capital Improvement Program (CIP). The following section details the process that SSWD currently uses to support this strategy, including how to identify and justify an asset need, as well as how to identify the best funding source to finance the asset R/R.

7.1 R/R Inputs

Estimating long-term R/R funding needs requires understanding the remaining useful life of assets and objects. Key inputs to developing an R/R plan include typical useful lives, installation dates, and R/R unit costs. The development of each of these elements is described herein.

7.1.1 Useful Lives

Typical useful lives may be used to calculate remaining useful life (in number of years) as follows:

$$\text{Remaining Useful Life} = (Install\ year + Typical\ useful\ life) - Current\ Year$$

Appendix F contains the typical useful lives that were developed based on industry standards and adjusted in collaboration with SSWD staff based on historical R/R practices. Typical useful lives are used as a planning and budgeting tool, but consideration should be given to factors that may impact (increase or decrease) the life of an asset. Some factors that are typically considered include:

- Design quality and standards
- Installation and construction quality and standards
- Material quality
- Operating conditions
- Historical O&M

Differences in these factors may result in actual useful lives that are significantly higher or lower than the typical useful lives.

7.1.2 Installation Dates

Installation dates are used to determine R/R dates and calculate the remaining useful life for SSWD objects. SSWD historical records contained “well drilled” dates for all the wells and installation dates for some objects. As a result, SSWD worked with BC to develop the following three options to estimate the missing object installation dates:

- **Option 1:** SSWD manually assigns an installation date to each object based on staff knowledge.
- **Option 2:** SSWD assumes each object has been rehabilitated/replaced as intended (based on useful life) from the original “well drilled” date and assigns installation dates based on this.
- **Option 3:** Assign “well drilled” date to objects corresponding with each well site.

Based on discussions with SSWD staff, the preferred option was selected for each of the object types for obtaining installation dates. SSWD staff manually assigned missing installation dates where

possible under Option 1 and calculated the installation dates for Options 2 and 3. An example for Option 2 would be that for an air release valve at a well drilled in 1949, assuming a 30-year-useful life, that has been replaced twice (in 1979 and 2009) and is due to be replaced again in 2039. The application of scores (actual and calculated) will aid SSWD when planning for object replacement over time and when making the appropriate decisions for their assets with their available funding. The installation dates of the objects developed under the GWAMP are shown on Figure 7-2 and this information is also provided in the spreadsheet transmitted to SSWD to aid in R/R planning. Figure 7-2 shows that a significant number of objects have been replaced since 2000.

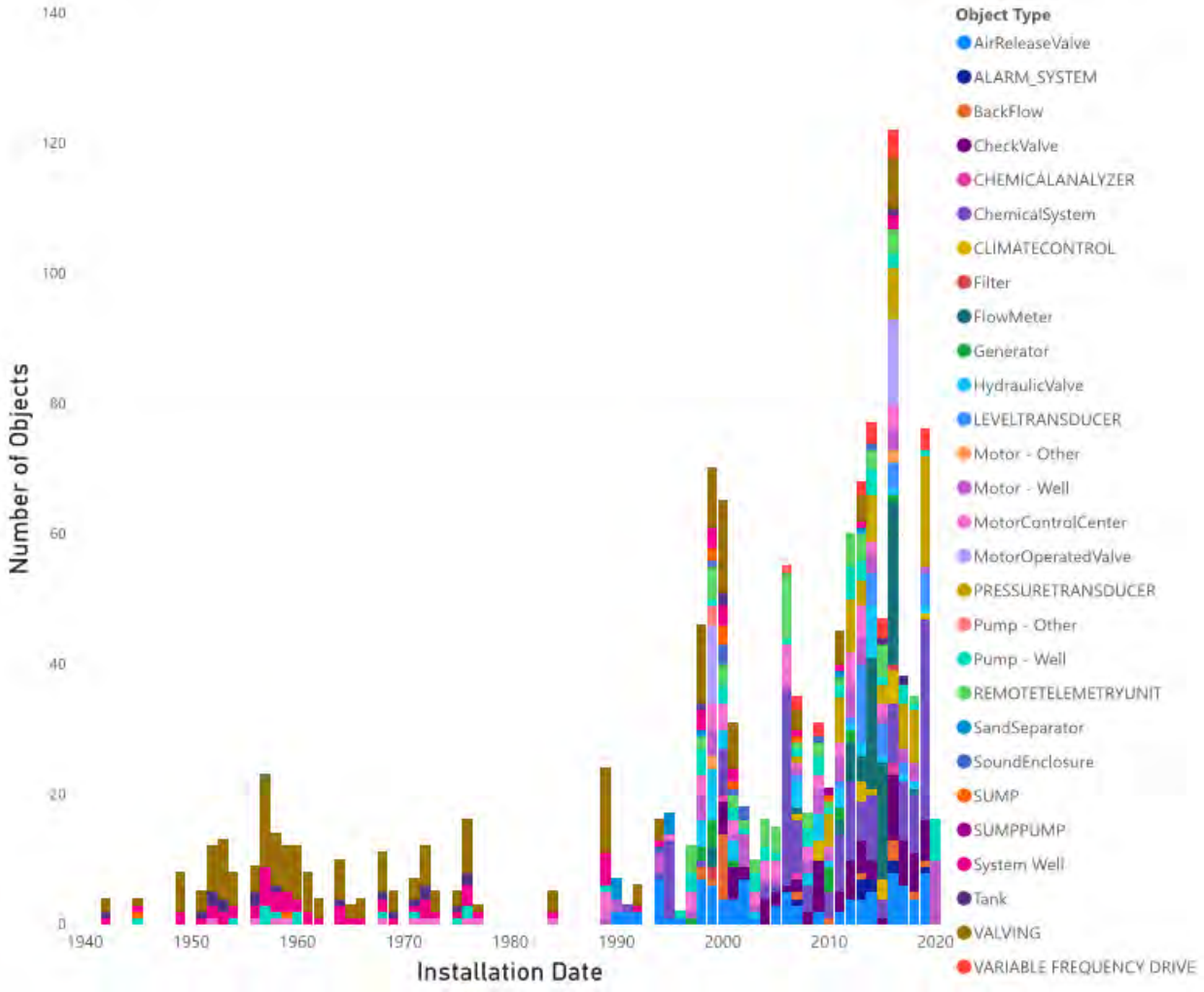


Figure 7-1. SSWD groundwater well object installation dates

7.1.3 R/R Unit Costs

R/R unit costs were developed for each object type for use in calculating long-term R/R costs for groundwater wells. The costs were developed in collaboration with SSWD and were based on recent well construction costs which, at the time of the time of this analysis, were $1.5 million for a new groundwater well. Rehabilitation costs were only developed for object types where those costs are applicable. Based on that assumed overall cost, individual costs were developed for each object type. Appendix F contains the R/R unit costs.

7.2 Long-term R/R Well Plan

An important component of SSWD's GWAMP is to determine long-term replacement needs to develop a better understanding of anticipated capital costs to replace aging assets and objects. These needs must be easily communicated and justified to stakeholders and decision makers to develop funding and programmatic support. The Long-term R/R Well Plan (LTRRWP) is used to ensure that capital expenditures and funding levels are adequate to sustain SSWD's groundwater wells. To perform this analysis we used a computer model referred to as the Replacement Planning and Asset Valuation Model (RPAVM). The RPAVM calculates future annual replacement and refurbishment needs based on the inputs described in Section 7.1. A Power BI tool was developed for SSWD to analyze the results of the RPAVM in comparison to asset and object inputs and risk analysis results. The Power BI tool was provided to SSWD under separate cover in April 2020. Two scenarios were evaluated using the RPAVM: a base scenario and an optimistic scenario, described herein.

7.2.1 Base Scenario

A base scenario was evaluated utilizing the approach used in the SSWD Water System Plan developed in 2017. The approach assigns the useful life of the system well object based on the risk of failure (ROF). Using the results from Section 4, system well objects were assigned a useful life as follows:

- Low ROF wells– Wells with LoF and CoF scores less than 3. Assume 60-year useful life. Add an additional 5 years of life for wells currently over 60 years old.
- Medium ROF wells– Wells with LoF scores less than 3 and CoF scores of 3 or greater and wells with an LoF score of 3 or greater but a CoF score less than 3. Assume 55-year useful life. Add an additional 5 years of life for wells currently over 55 years old.
- High ROF wells– Wells with LoF and CoF scores of 3 or greater. Assume 50 years useful life for wells currently under 50 years. For wells over 50 years in age, develop plans for well replacement immediately.

The LTRRWP for the base scenario is summarized on Figure 7-2 and includes R/R costs over a 50-year period. Below are some observations on Figure 7-2.

- The average annual R/R cost over the 50-year period is $3.1 million.
- The overall replacement value in 2020 dollars is $118 million, if the entire portfolio of groundwater well assets and objects had to be replaced today. This is consistent with the assumed $1.5 million per well assumption for in-kind replacement.
- A peak in projected R/R costs occurs in 2025 due to 32 wells requiring replacement that were installed on or before 1965.
- Over the next 10 years:
  - The total R/R costs are $36 million
  - The average annual R/R costs are $3.6 million
  - 778 well assets and objects require R/R
  - 41 wells require replacement at a total in-kind replacement (i.e. well casing and screen only) cost of $20.5 million, not including property acquisition
  - Full replacement of the 41 wells, including all new objects (i.e. pump, motor, MCC) and assuming $1.5 million per well, would be $61.5 million.

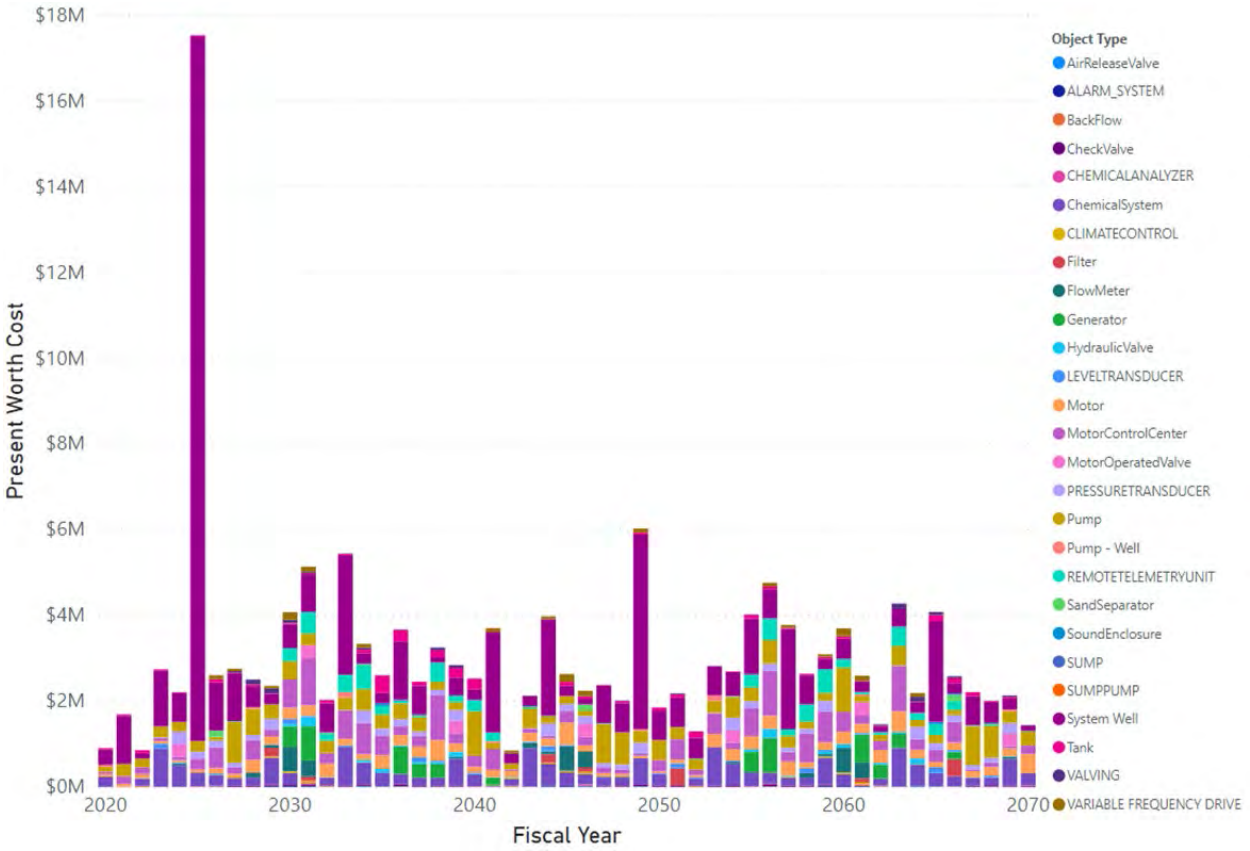


Figure 7-2. Base Scenario Groundwater well R/R forecast (2020 dollars)

7.2.2 Optimistic Scenario

An optimistic scenario was evaluated utilizing the key assumption that all wells will last as long as the current oldest well that was installed in 1942 and is currently 78 years old. The LTRRWP for the optimistic scenario is summarized on Figure 7-3 and includes R/R costs over a 50-year period. Below are some observations on Figure 7-3.

- The average annual R/R cost over the 50-year period is $3 million.
- The overall replacement value in 2020 dollars is $118 million, if the entire portfolio of groundwater well assets and objects had to be replaced today. This is consistent with the $1.5 million per well assumption for in-kind replacement.
- Over the next 10 years:
  - The total R/R costs are $20 million
  - The average annual R/R costs are $2 million
  - 768 well assets and objects require R/R
  - 5 wells require replacement at a total in-kind replacement (i.e. well casing and screen only) cost of $2.5 million, not including property acquisition
  - Full replacement of the 5 wells, including all new objects (i.e. pump, motor, MCC) and assuming $1.5 million per well, would be $7.5 million

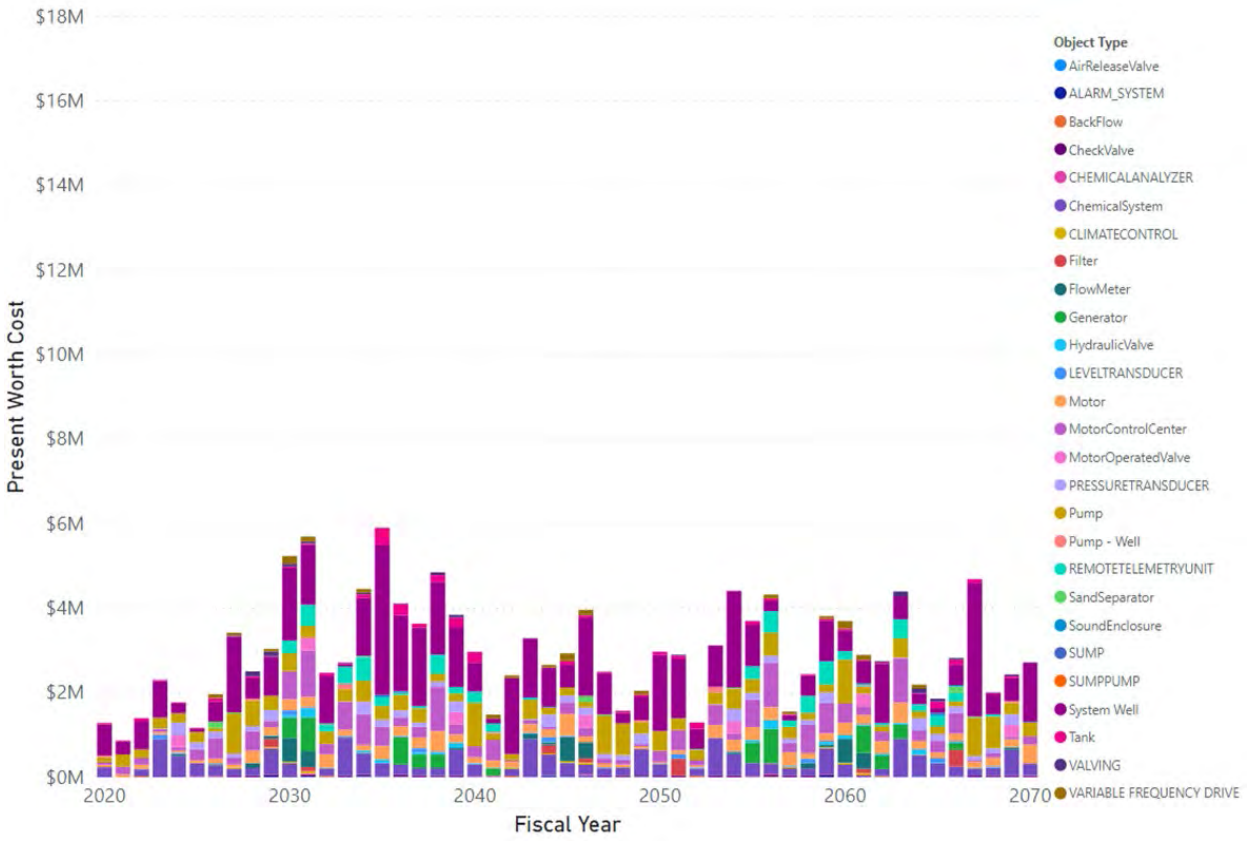


Figure 7-3. Optimistic Scenario Groundwater well R/R forecast (2020 dollars)

7.3 Near-term Improvements

Near-term improvements describe groundwater well activities that should be conducted within the next 5 years. Recommendations to address the defects identified during the visual condition assessment, described in Section 5, are summarized in Table 7-1. The recommendations include costs, where applicable. Some of the defects may be resolved by SSWD maintenance staff. It should be noted that these improvements only cover the six wells that were assessed and do not include improvements needed for the other 66 wells.

Table 7-1. Condition Assessment Recommendation				
Well	Object	Issues/Findings	Recommended Mitigating Actions	Replacement Cost
WE24 – Becerra/Woodcrest	MC24-1: Motor Control Center 1	Original 1952 installation is obsolete and past its useful life	Replace	$100,000
	AR24-2: Air Release Valve 2	Surficial corrosion at joint and in poor condition	Maintenance (recoat and check/replace gasket)	-
WE26 – Greenwood/Marconi	SS26-1: Sand Separator 1	Failed (currently planned for replacement)	Replace	$25,000
	CV26-1: Check Valve 1	Failed (currently planned for replacement)	Replace	$5,000
WE32A – Eden/Root	PU32A-4: Pump 4 (Booster Pump)	Discharge head showing signs of wear/leaking around packing gland, shaft wear	Maintenance (packing and packing gland)	-
	CV32A-2: Booster Pump Check Valve	Leaking around the swing arm shaft	Maintenance (replace seal)	-
	Cascade Aerator	Moisture and condensation in the well causing corrosion in surrounding equipment	Further evaluation to mitigate moisture and condensation issue.	-
WE4B – Bell/Marconi	PU4B-1 Well Pump	Discharge head showing signs of wear/leaking around packing gland, shaft wear	Maintenance (packing and packing gland)	-
	LT4B-2 Level Transducer 2	Corrosion on the junction box	Maintenance (recoat and/or replace junction box)	-
WEN24 – Don Julio	FRP Enclosure Fan for Chlorination System	Extensive corrosion	Replace	$1,000

While recommendations are based on actual observations during the visual condition assessment, to the extent additional conditions exist but were not observed or conditions change after the visual condition assessment observation, such factors could potentially impact the recommendations in a substantial manner. In addition, it should be noted that, consistent with the sensory-level observation approach used, the visual condition assessment did not include any destructive or invasive testing, nor was any sampling, laboratory testing, or other follow-up investigatory technique employed.

7.4 Rehabilitation and Replacement Recommendations

The following recommendations related to R/R are included in this section for ready reference and further detailed in Section 8 of this GWAMP.

- Develop asset and object commissioning and decommissioning process
- Implement a condition-based approach for identifying asset funding needs
- Update the LTRRWP based on any updates that are made to the asset and object information

Section 8

Implementation

Staff roles and responsibilities to implement this GWAMP are provided in this section. An implementation plan matrix and schedule are also provided based on the analysis and recommendations documented in this GWAMP.

8.1 Staff Responsible for Managing Assets at SSWD

Managing the GWAMP is a dynamic process of continuous planning, implementation, evaluation, and resultant adaptation to changing conditions and lessons learned. The primary staff responsible for managing well assets are referred to as the AM Team. The AM Team is responsible for identifying, tracking, documenting, reviewing, and approving changes to the GWAMP document. Their specific responsibilities and required actions as well as the recommended frequency of these activities are listed by position or staff group in Table 8-1. The IT Team staff group is defined in Table 8-2.

Table 8-1. AM Team Staff Responsible for GWAMP Activities

Position/staff group	Functional Responsibility	Frequency
General Manager	Ensure GWAMP implementation and compliance	Ongoing
	Accountable for meeting LOS metric targets	Ongoing
Assistant General Manager	Work with Engineering Manager and Operations Manager to implement GWAMP	Ongoing
	Set LOS metrics	Ongoing
	Accountable for data accuracy and completeness	Ongoing
Engineering Manager	Assemble and analyze LOS metrics for review	Ongoing
	Review and analyze condition monitoring data	Ongoing
	Modify GWAMP once changes are approved. Record changes in a change log maintained with the GWAMP document file. This change log will be used to track potential GWAMP modifications for inclusion in the document's update.	Annually
	Review critical asset list	Annually
	Coordinate GWAMP document review/implementation status meetings (See Table 8-3)	Annually
	Review GWAMP and provide recommendations for consideration	Annually
	Review GWAMP and prepare documentation for approved changes	Annually
Operations Manager	Ensure that maintenance staff know their roles and responsibilities	Ongoing
	Bring forth the identified improvement recommendations from staff to the AM team	Ongoing
	Responsible for data entry, accuracy, and completeness	Ongoing
	Refine/add key performance indicators	Ongoing
	Review critical asset list	Annually
	Identify GWAMP changes for improvement and relay to Engineering Manager	Ongoing
	Review GWAMP and provide recommendations for consideration	Annually

Table 8-1. AM Team Staff Responsible for GWAMP Activities		
Position/staff group	Functional Responsibility	Frequency
Production Superintendent	Monitor and analyze performance metrics	Monthly
	GWAMP champion to defend and support the GWAMP	Ongoing
	Identify GWAMP changes for improvement and relay to Operations Manager	Ongoing
	Review AM Team suggested revisions for AM Team review and approval	Annually
IT Team	Implement specific GWAMP functions specific to their job responsibilities	Ongoing
	Responsible for asset data accuracy and completeness in CMMS and GIS database	Ongoing

Table 8-2. IT Team	
Title	Role to Support GWAMP Activities
IT Manager	Coordinate updates to asset and object database in GIS and CMMS.
IT Analyst	Support activities under the IT Manager
GIS Coordinator	Coordinate asset and object GIS database in coordination with IT and CMMS
Field Operations Coordinator	Coordinate CMMS updates. Liaison between operations and IT. Check that data is entered accurately and is complete.

Additionally, annual GWAMP meetings will be conducted for purposes of holistically reviewing and updating this GWAMP. Table 8-3 lists the specific actions related to these annual GWAMP meetings.

Table 8-3. Annual GWAMP Update Actions	
Action	Activities
Perform annual GWAMP review	Meet to review status of the GWAMP Identify successes in GWAMP program implementation Identify ways to address gaps in recommendations Confirm roles and responsibilities are still appropriate
Assess whether improvement activities are performing as expected	Assess improvement activity performance Determine if the correct information is being gathered to track performance; adjust as necessary
Add or reprioritize improvement activities as needed	Discuss newly needed improvement activities Confirm priorities

8.2 GWAMP Implementation Plan

As this GWAMP update was prepared, SSWD staff identified several initiatives that warrant additional development. Table 8-4 lists the prioritized improvement action items to help SSWD continuously improve asset management. The improvement action items describe the tasks and effort needed to fully develop and implement the components of the GWAMP presented in the preceding sections. The GWAMP Implementation Plan contains:

- **ID #** – For item identification only and not intended to be reflective of sequencing or priority. ID # includes the abbreviation letters for each GWAMP element.
- **GWAMP section** – Aligned with the relevant GWAMP elements

- **Recommendation** – Identifies needed asset management improvements.
- **Activities** – Describes specific actions to implement the recommendation
- **Benefit** – Describes the anticipated outcome of implementing the improvements
- **Estimated completion date** – Provides an estimated date of completion for achieving this recommendation.
- **Priority** – Assigns a level of importance to each improvement related to the implementation timing, including:
  - Quick win: highest priority recommendation that may be implemented within the **next six months** and are anticipated to require minimal effort/cost while having very high benefits.
  - Near-term: high priority recommendation that may be implemented **within the next year**.
  - Long-term: high to moderate priority recommendation that may be implemented within the next **one to five years**. These recommendations may require significant internal and/or external resources and may be dependent on completion of the quick win and near-term recommendations.
- **Level of effort** – Defines anticipated SSWD staff labor hours associated with implementing the recommended improvements.
- **Completion status** – Reflects the completion status of this implementation item for tracking purposes.

Immediately following the summary table is a graphical depiction (Figure 8-1) of the anticipated completion schedule by the corresponding ID # in Table 8-4.

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Table 8-4. GWAMP Implementation Plan

ID #	GWAMP Section	Recommendation	Activities	Benefit	Estimated Completion Date	Priority	Level of Effort (hours)	Responsible Staff	Completion Status
GWI-1	Section 2- Groundwater Well Inventory	Implement GWAMP asset and object hierarchy updates to create a complete asset list in the proper hierarchy.	Update the asset and object hierarchy in the GIS and CMMS. Ensure that any changes are reflected in the asset and object inventories.	SSWD will be better able to manage asset and object data and maintenance management activities in support of groundwater well operations.	Q4 2020	Quick Win	4 hours	Production Superintendent with GIS Coordinator	
GWI-2	Section 2- Groundwater Well Inventory	Implement GWAMP asset and object inventory updates to populate appropriate data fields associated with assets.	Upload changes and/or new data into the GIS and CMMS. Confirm data accuracy of the populated fields. (GWI-1 must be completed before GWI-2 can be started)	This data will support work management activities in support of operating the groundwater wells.	Q1 2021	Near Term	20 hours initial effort, then ongoing effort to keep data up to date	Initial effort: GIS Coordinator with review by Production Superintendent	
GWI-3	Section 2- Groundwater Well Inventory	Maintain asset and object inventory periodically updating data fields as appropriate.	Maintain the GIS database with updated asset objects (GWI-3 is dependent on the process developed in RR-1).	This data will support work management activities in support of operating the groundwater wells.	Q2 2022, monthly	Long Term	4 hours per month	Production Superintendent with assistance from Engineering Manager on large projects	
LOS-1	Section 3- Levels of Service	Begin collecting data in support of current priority performance measures	Collect data and enter data into appropriate system of record per measure to support metrics reporting for measures that are fully defined.	These standardized metrics will be tracked and monitored to provide guidance on where continuous improvements can be implemented.	Q1 2021, monthly (Pending review by IT Team)	Near Term	Pending review by IT Team	Production Superintendent with IT Team support	
LOS-2	Section 3- Levels of Service	Finalize future performance measure definitions and begin collecting data in support of GWAMP identified measures	Fully develop the performance measures included in the GWAMP described as future measures and initiate data collection efforts to support these measures.	These metrics will allow SSWD to gauge performance on measures that are directly relevant to organizational success.	Q4 2021 – finalize definitions, begin collecting data Q1 2023 – Report on metrics, monthly	Long Term	Pending review by IT Team	Production Superintendent with IT Team support	
LOS-3	Section 3-Levels of Service	Build visualizations for GWAMP performance measures as appropriate	Develop queries and data visualizations to drive performance (LOS-3 contingent on LOS-1 and LOS-2)	Provides transparency of information and performance.	Q4 2022	Long Term	Pending review by IT Team	IT Team	
RM-1	Section 4- Risk Management	Review and refine list of critical assets and objects	Using methodology described in the GWAMP, revisit the critical asset list and update list on annual basis. Refine the risk analysis spreadsheet (coordinate with CA-1 and GWI-3).	Allows SSWD to determine frequency of condition assessment, maintenance activities and resource support.	Q4 2021, annually	Long Term	20 hours	Engineering Manager and Operations Manager with support from Production Superintendent	
RM-2	Section 4- Risk Management	In coordination with development of AWIA RRA/ERP, document existing and develop (if not previously developed) risk mitigation strategies	Document, develop, and/or update emergency response plans for critical assets and well field as required.	Developing risk mitigation strategies will allow staff to prepare and readily respond in the event of an emergency.	Q4 2020 and update as necessary (Q3 2020 as AWIA ERP is completed)	Quick Win	8 hours per plan	Operations Manager	
CA-1	Section 5- Condition Assessment	Create standardized data collection framework, reports, and tools.	Establish framework to collect condition assessment data in CMMS. Build reports, mobile data collection capabilities, and data visualization tools.	Developing a consistent approach to collecting and storing data will allow staff to efficiently, collect, review, and analyze the data.	Q4 2020 (Pending review by IT Team)	Quick Win	Pending review by IT Team	IT Team in coordination with Operations Manager	
CA-2	Section 5- Condition Assessment	Develop and implement a plan to visually inspect the remaining 66 wells whose condition was not assessed under the GWAMP.	Using the condition assessment data collection framework in CA-1, inspect the remaining 66 wells. The collected visual inspection and condition monitoring data will be entered into the CMMS on the asset and object records	Asset condition provides essential information to decision makers regarding when to repair, rehabilitate, and replace assets. It can also inform maintenance programs.	Q3 2021	Near Term	96 hours (field work)	Production Superintendent	
CA-3	Section 5- Condition Assessment	Develop, document, and implement condition monitoring plan described in Section 5 to conduct condition monitoring of high consequence objects.	Develop the plan (methodology, frequency, and technologies) for condition monitoring of critical objects. Develop object type specific for condition monitoring implementation (RM-1 will define critical objects and CMMS configuration in CA-1 will impact CA-3 schedule).	Condition monitoring provides greater asset information and can help to predict and avoid unanticipated failures allowing for intervention before catastrophic failures occur.	Q2 2021	Near Term	80 hours	Operations Manager	
CA-4	Section 5- Condition Assessment	Analyze condition assessment and condition monitoring data.	Analyze the data for identification/trending of changes to the asset lifecycle and assess needs for program changes. (from CA-2 and CA-3 data using MM-5 process). This information will also be used for capital projects to evaluate useful life vs need to adapt maintenance strategies. (MM-5 and RR-2 develops process for using that data and making decisions.)	Collection of the appropriate data maintained in the proper location for ready access and analysis will allow SSWD to make informed and planned decisions regarding asset maintenance, rehabilitation, and replacement.	Q1 2022, annually	Long Term	60 hours	Engineer Manager and Operations Management	

Table 8-4. GWAMP Implementation Plan

ID #	GWAMP Section	Recommendation	Activities	Benefit	Estimated Completion Date	Priority	Level of Effort (hours)	Responsible Staff	Completion Status
MM-1	Section 6- Maintenance Management	Enter current PM Activities in CMMS	Enter PM activities as identified in the Annual Maintenance Plan into the CMMS	This will ensure all required maintenance activities are being completed.	Q4 2020	Quick Win	60 hours	Production Superintendent with support from Field Operations Coordinator	
MM-2	Section 6- Maintenance Management	Develop PM SOP template and use template to consistently document PM activities for objects	Develop standardized PM SOP template and document PM activities for objects including steps to complete each task and parts need to complete the task. Link them to the appropriate PM activity.	This will standardize the approach and increase efficiency in completing task.	Q2 2021 – Kickoff Q2 2022 – Development	Near Term (kickoff), Long term (development)	240 hours	Production Superintendent	
MM-3	Section 6- Maintenance Management	Develop Annual Maintenance Schedule	Develop and implement annual PM maintenance schedule for all the identified maintenance activities from MM-1 and MM-2.	Provides the foundation for planning and scheduling maintenance activities, will allow for resource loading to ensure all PM activities are completed and gives the ability to track activity completion	Q4 2020, annual update	Quick Win	20 hours	Production Superintendent	
MM-4	Section 6- Maintenance Management	Document all Maintenance Activities on completed work	Document all maintenance activities on work orders and ensure they are associated with the appropriate object or asset.	This will provide documentation to support the maintenance performance measures identified in Section 2 of the report.	Q4 2020, ongoing	Quick Win	16 hours	Production Superintendent	
MM-5	Section 6- Maintenance Management	Develop and Implement Maintenance Optimization Process	Develop and implement a process for analyzing maintenance data and condition assessment data to optimize maintenance activities. Determine how condition data impacts the maintenance regime. Determine if staff should modify the maintenance program. (This activity is needed for CA-4.)	This process will ensure the correct frequency and maintenance activities are being completed to improve object and asset availability.	Q4 2021, annually do optimization review	Long Term	Pending review by IT Team	Operations Manager and Engineering Manager with support from IT Team	
MM-6	Section 6- Maintenance Management	Develop and Implement Failure Analysis of Assets	Develop the process for capturing failure modes and completing an analysis. (This is likely implemented in coordination with MM-5)	This information will be useful in identifying failure modes for assets and objects as well as provide documentation for vendor selection, equipment selection, and need for asset rehabilitation and replacement.	Q4 2021	Long Term	Pending review by IT Team	Operations Manager and Engineering Manager with support from IT Team	
RR-1	Section 7- Rehabilitation and Replacement	Develop asset and object commissioning and decommissioning process.	Develop asset and object commissioning and decommissioning process that outlines the roles and responsibilities for updating asset and object data whenever the status of an asset or object changes. The process may include SSWD's current red line marking system process combined with gathering new well project information from the Engineering Manager and coordinating with the process to update GIS. (This process should be considered when implementing GWI-3.)	Maintains an up-to-date asset and object inventory to maintain the integrity of the asset management program.	Q1 2021	Near Term	Pending review by IT Team	Production Superintendent and IT Team	
RR-2	Section 7- Rehabilitation and Replacement	Implement a condition-based approach for identifying asset funding needs	Develop and document a standardized approach for identifying asset funding needs based on condition assessment data. This should include updating the Rehabilitation and Replacement Plan periodically as additional condition assessment and monitoring results are collected at other groundwater wells.	The condition assessment data supports a risk-based approach to inform decision making for asset rehabilitation and replacement.	Q4 2021, annually	Long Term	40 hours	Engineer Manager and Operations Manager	
RR-3	Section 7- Rehabilitation and Replacement	Update the LTRRWP based on any updates that are made to the asset and object information.	As updates are made to installation dates and other critical asset and object information, the rehabilitation and replacement estimates should be updated periodically to reflect the changes. (following GWI-3) Review to determine when next update is needed.	Provides a long-term projection of necessary investments and justifies a defensible capital program for groundwater wells.	Q4 2021 , annually	Long Term	20 hours	Engineer Manager and Operations Manager	

Table 8-4. GWAMP Implementation Plan

ID #	GWAMP Section	Recommendation	Activities	Benefit	Estimated Completion Date	Priority	Level of Effort (hours)	Responsible Staff	Completion Status
IM-1	Section 8- Implementation	Form SSWD AM Team	Form SSWD AM Team to implement, refine, revise, and update the GWAMP document. Confirm roles defined in Table 8-1. Review and update completion status of GWAMP Implementation Plan.	This group will ensure GWAMP implementation and sustainability through process of continuous improvement.	Q3 2020, monthly	Quick Win	Core group to meet on regular basis at a frequency determined by the group. Assume 1 hour per attendee per month.	Engineer Manager and Operations Manager	
IM-2	Section 8- Implementation	GWAMP annual maintenance, including review and updates	AM Team to review the GWAMP, identify implementation changes/improvements, and update the GWAMP on annual basis. Document updates in change log maintained by SSWD AM Team.	The GWAMP will be continuously improved during implementation. Revisions on annual basis will ensure standardization and consistency as well as capturing advancement in the AM program	Q3 2021, annually GWAMP complete document update every 4 to 6 years	Long Term	Annual effort is 40 hours	Engineer Manager and Operations Manager	

Condition Assessment (CA)
Groundwater Well Inventory (GWI)
Implementation (IM)
Level of Service (LOS)
Maintenance Management (MM)
Risk Management (RM)
Rehabilitation and Replacement (RR)

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	Quick Win				Near Term				Long Term							
	2020				2021				2022				2023			
ID #	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
IM-1			IM-1	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
GWI-1				GWI-1												
RM-2				RM-2												
MM-1				MM-1												
MM-3				MM-3				MM-3				MM-3				MM-3
MM-4				MM-4	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
CA-1				CA-1	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
LOS-1					LOS-1	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
RR-1					RR-1	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
GWI-2					GWI-2											
GWI-3						GWI-3	·····	·····	·····	·····	·····	·····	·····	·····	·····	·····
MM-2						MM-2						MM-2				
CA-3						CA-3										
IM-2							IM-2				IM-2				IM-2	
CA-2							CA-2									
RM-1								RM-1				RM-1				RM-1
LOS-2								LOS-2	·····	·····	·····	·····	·····	·····	·····	·····
MM-5								MM-5				MM-5				MM-5
MM-6								MM-6	·····	·····	·····	·····	·····	·····	·····	·····
RR-2								RR-2				RR-2				RR-2
RR-3								RR-3				RR-3				RR-3
CA-4									CA-4				CA-4			
LOS-3												LOS-3				

Figure 8-1. GWAMP implementation schedule

- Condition Assessment (CA)
- Groundwater Well Inventory (GWI)
- Implementation (IM)
- Level of Service (LOS)
- Maintenance Management (MM)
- Risk Management (RM)
- Rehabilitation and Replacement (RR)

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Section 9

References

American Water Works Association. Utility Benchmarking Performance Management for Water and Wastewater. 2018.

American Water Works Association, Water Environment Federation, and National Association of Clean Water Agencies. Implementing Asset Management: A Practical Guide. 2007

Brown and Caldwell. SSWD Water System Master Plan. April 2017

Brown and Caldwell. Evaluation of North Service Area Supply Capacity and Storage Needs. March 2020. (1)

Brown and Caldwell. SSWD Risk and Resilience Assessment. March 2020. (2)

Institute of Public Works Engineering Australasia (IPWEA). *International Infrastructure Management Manual*. 2015

Sacramento Suburban Water District. SSWD Strategic Plan. 2020

Sacramento Suburban Water District. Groundwater Well Facility Asset Management Plan. 2015

Society of Maintenance Reliability Professionals (SMRP). Best Practices Metrics, 3rd Edition. October 2011.

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Appendix A: Detailed Object Inventory

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Well	Name	Address	Equipment ID	Label	Intallation Date
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	AR13-1	Air Release Valve 1	2009
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	CS13-CL1	Chlorination Sys 1	2019
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	CS13-FE1	RFP Enclosure 1	2012
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	CS13-FE2	RFP Enclosure 2	2012
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	CS13-FL1	Fluoride Sys 1	2019
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	CV13-1	CheckValve 1	2009
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	FM13-1	FlowMeter 1	2012
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	HV13-1	HydraulicValve1	1999
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	MC13-1	MotorControlCenter1	2012
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	MO13-1	MOTOR 01	2014
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	PT13-1	PressureTransducer 1	2019
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	PU13-1	PUMP 1	2014
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	RT13-1	RemoteTelemetryUnit1	2012
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	SE13	Sound Enclosure 1	2009
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	SW-13	System Well 1	1949
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	VA13-1	Valving 1	1949
WE13	CALDERWOOD / MARCONI	2951 CALDERWOOD LN	VA13-2	Valving 2	1949
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	AR18-1	Air Release Valve 1	2011
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	CS18-CL1	Chlorination Sys 1	2011
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	CS18-FE1	RFP Enclosure 1	2006
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	CS18-FL1	Fluoride Sys	2006
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	CV18-1	CheckValve 1	2011
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	FM18-1	FlowMeter 1	2014
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	MC18-1	MotorControlCenter1	2006
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	MO18-1	MOTOR 01	1997
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	PT18-1	PressureTransducer 1	2011
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	PU18-1	PUMP 1	1997
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	RT18-1	RemoteTelemetryUnit1	2006
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	SS18-1	SandSeparator 1	2011
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	SW-18	System Well 1	1951
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	TA18-1	Tank 1	1951
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	VA18-1	Valving 1	1951
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	VA18-2	Valving 2	1951
WE18	RIDING CLUB / LADINO	4012 RIDING CLUB LN	VA18-3	Valving 3	1951
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	AR20A-1	Air Release Valve 1	1999
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	CS20A-CL1	Chlorination Sys 1	2019
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	CS20A-FL1	Fluoride Sys 1	2019
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	CS20-FE1	RFP Enclosure 1	2006
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	CV20A-1	CheckValve 1	2009
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	FM20A-1	FlowMeter 1	2016
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	MC20A-1	MotorControlCenter1	2011
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	MO20A-1	MOTOR 01	2017
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	PT20A-1	PressureTransducer 1	2019
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	PU20A-1	PUMP 1	1998
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	RT20A-1	RemoteTelemetryUnit1	2006
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	SE20A	Sound Enclosure 1	1999
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	SW-20A	System Well 1	1969
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	TA20A-1	Tank 1	1969
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	VA20A-1	Valving 1	1969
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	VA20A-2	Valving 2	1969
WE20A	WATT / ARDEN	ARDEN WAY AND WATT AVE	VA20A-3	Valving 3	1969
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	AR24-1	Air Release Valve 1	2012
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	AR24-2	Air Release Valve 2	2012
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	CS24-CL1	Chlorination Sys 1	2012
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	CS24-FE1	RFP Enclosure 1	2006
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	CS24-FL1	Fluoride Sys 1	2012
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	CV24-1	CheckValve 1	2012
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	FM24-1	FlowMeter 1	2015
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	MC24-1	MotorControlCenter1	1952
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	MO24-1	MOTOR 01	2009
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	PT24-1	PressureTransducer 1	2012
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	PU24-1	PUMP 1	2013
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	RT24-1	RemoteTelemetryUnit1	2004
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	SS24-1	SandSeparator 1	1990
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	SW-24	System Well 1	1952
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	TA24-1	Tank 1	1952
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	TA24-2	Tank 2	1952
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	VA24-1	Valving 1	1952
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	VA24-2	Valving 2	1952
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	VA24-3	Valving 3	1952
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	VA24-4	Valving 4	1952
WE25	THOR / MERCURY	4420 THOR WAY	AR25-1	Air Release Valve 1	2012

Well	Name	Address	Equipment ID	Label	Intallation Date
WE25	THOR / MERCURY	4420 THOR WAY	AR25-2	Air Release Valve 2	2012
WE25	THOR / MERCURY	4420 THOR WAY	CS25-CL1	Chlorination Sys 1	2012
WE25	THOR / MERCURY	4420 THOR WAY	CS25-FE1	RFP Enclosure 1	1995
WE25	THOR / MERCURY	4420 THOR WAY	CS25-FE2	RFP Enclosure 2	2006
WE25	THOR / MERCURY	4420 THOR WAY	CS25-FL1	Fluoride Sys 1	2012
WE25	THOR / MERCURY	4420 THOR WAY	CV25-1	CheckValve 1	2012
WE25	THOR / MERCURY	4420 THOR WAY	FM25-1	FlowMeter 1	2014
WE25	THOR / MERCURY	4420 THOR WAY	MC25-1	MotorControlCenter1	2006
WE25	THOR / MERCURY	4420 THOR WAY	MO25-1	MOTOR 01	1994
WE25	THOR / MERCURY	4420 THOR WAY	PT25-1	PressureTransducer 1	2012
WE25	THOR / MERCURY	4420 THOR WAY	PU25-1	PUMP 1	2000
WE25	THOR / MERCURY	4420 THOR WAY	RT25-1	RemoteTelemetryUnit1	2006
WE25	THOR / MERCURY	4420 THOR WAY	SW-25	System Well 1	1952
WE25	THOR / MERCURY	4420 THOR WAY	VA25-1	Valving 1	1952
WE25	THOR / MERCURY	4420 THOR WAY	VA25-2	Valving 2	1952
WE25	THOR / MERCURY	4420 THOR WAY	VA25-3	Valving 3	1952
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	AR26-1	Air Release Valve 1	2013
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	AR26-2	Air Release Valve 2	2013
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	CS26-CL1	Chlorination Sys 1	2013
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	CS26-FE1	RFP Enclosure 1	2006
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	CS26-FL1	Fluoride Sys 1	2013
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	CV26-1	CheckValve 1	2013
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	FM26-1	FlowMeter 1	2016
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	MC26-1	MotorControlCenter1	2006
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	MO26-1	MOTOR 01	2011
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	PT26-1	PressureTransducer 1	2013
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	PU26-1	PUMP 1	2011
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	RT26-1	RemoteTelemetryUnit1	2006
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	SS26-1	SandSeparator 1	2013
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	SW-26	System Well 1	1953
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	TA26-1	Tank 1	1953
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	TA26-2	Tank 2	1953
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-1	Valving 1	1953
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-2	Valving 2	1953
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-3	Valving 3	1953
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-4	Valving 4	1953
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-5	Valving 5	1953
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-6	Valving 6	1953
WE27	MELROSE / CHANNING	6503 MELROSE DR	AR27-1	Air Release Valve 1	2013
WE27	MELROSE / CHANNING	6503 MELROSE DR	CS27-CL1	Chlorination Sys 1	2013
WE27	MELROSE / CHANNING	6503 MELROSE DR	CS27-FE1	RFP Enclosure 1	2013
WE27	MELROSE / CHANNING	6503 MELROSE DR	CV27-1	CheckValve 1	2013
WE27	MELROSE / CHANNING	6503 MELROSE DR	FM27-1	FlowMeter 1	2012
WE27	MELROSE / CHANNING	6503 MELROSE DR	HV27-1	HydraulicValve1	2003
WE27	MELROSE / CHANNING	6503 MELROSE DR	LT27-1	LevelTransducer 1	2016
WE27	MELROSE / CHANNING	6503 MELROSE DR	MC27-1	MotorControlCenter1	2012
WE27	MELROSE / CHANNING	6503 MELROSE DR	MO27-1	MOTOR 01	2012
WE27	MELROSE / CHANNING	6503 MELROSE DR	PT27-1	PressureTransducer 1	2013
WE27	MELROSE / CHANNING	6503 MELROSE DR	PU27-1	PUMP 1	2012
WE27	MELROSE / CHANNING	6503 MELROSE DR	RT27-1	RemoteTelemetryUnit1	2012
WE27	MELROSE / CHANNING	6503 MELROSE DR	SW-27	System Well 1	1953
WE27	MELROSE / CHANNING	6503 MELROSE DR	VA27-1	Valving 1	1953
WE27	MELROSE / CHANNING	6503 MELROSE DR	VA27-2	Valving 2	1953
WE27	MELROSE / CHANNING	6503 MELROSE DR	VA27-3	Valving 3	1953
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	AR28-1	Air Release Valve 1	2014
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	AR28-2	Air Release Valve 2	2014
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	CS28-CL1	Chlorination Sys 1	2014
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	CS28-FE1	RFP Enclosure 1	2006
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	CS28-FL1	Fluoride Sys 1	2014
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	CV28-1	CheckValve 1	2014
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	FM28-1	FlowMeter 1	2016
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	MC28-1	MotorControlCenter1	2006
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	MO28-1	MOTOR 01	1998
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	PT28-1	PressureTransducer 1	2014
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	PU28-1	PUMP 1	1954
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	RT28-1	RemoteTelemetryUnit1	2006
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	SE28	Sound Enclosure 1	2014
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	SS28-1	SandSeparator 1	1995
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	SW-28	System Well 1	1954
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	VA28-1	Valving 1	1954
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	VA28-2	Valving 2	1954
WE28	RED ROBIN / DARWIN	RED ROBIN LN (RED)	VF28	VARIABLE FREQUENCY DRIVE 1	2014

Well	Name	Address	Equipment ID	Label	Intallation Date
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	AR2A-1	Air Release Valve 1	1994
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	CS2A-CL1	Chlorination Sys 1	2017
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	CS2A-FE1	RFP Enclosure 1	2006
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	CS2A-FL1	Fluoride Sys 1	2014
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	CV2A-1	CheckValve 1	2004
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	FM2A-1	FlowMeter 1	2012
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	HV2A-1	HydraulicValve1	2014
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	HV2A-2	HydraulicValve2	2014
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	LT2A-1	LevelTransducer 1	2013
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	LT2A-2	LevelTransducer 2	2013
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	MC2A-1	MotorControlCenter1	2016
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	MO2A-1	MOTOR 01	2020
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	PT2A-1	PressureTransducer 1	2014
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	PU2A-1	PUMP 1	2017
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	RT2A-1	RemoteTelemetryUnit1	2016
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	SW-02A	System Well 1	1964
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	VA2A-1	Valving 1	1964
WE2A	EL PRADO / PARK ESTATES	2250 PARK ESTATES DR	VA2A-2	Valving 2	1964
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	AR30-1	Air Release Valve 1	2014
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	AR30-2	Air Release Valve 2	2014
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	CS30-CL1	Chlorination Sys 1	2014
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	CS30-FE1	RFP Enclosure 1	2006
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	CS30-FL1	Fluoride Sys 1	2014
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	CV30-1	CheckValve 1	2014
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	FM30-1	FlowMeter 1	2014
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	MC30-1	MotorControlCenter1	2006
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	MO30-1	MOTOR 01	2020
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	PT30-1	PressureTransducer 1	2014
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	PU30-1	PUMP 1	1997
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	RT30-1	RemoteTelemetryUnit1	2006
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	SW-30	System Well 1	1954
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	VA30-1	Valving 1	1954
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	VA30-2	Valving 2	1954
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	VA30-3	Valving 3	1954
WE30	ROCKBRIDGE / KEITH	2116 ROCKRIDGE RD (SIDE)	VF30	VARIABLE FREQUENCY DRIVE 1	2014
WE32A	EDEN / ROOT	4900 EDEN CT	AR32A-1	Air Release Valve 1	1999
WE32A	EDEN / ROOT	4900 EDEN CT	AR32A-2	Air Release Valve 2	1999
WE32A	EDEN / ROOT	4900 EDEN CT	AS32A	Alarm System 1	2014
WE32A	EDEN / ROOT	4900 EDEN CT	BF32A-1	Backflow 1	2000
WE32A	EDEN / ROOT	4900 EDEN CT	BF32A-2	Backflow 2	2000
WE32A	EDEN / ROOT	4900 EDEN CT	BF32A-3	Backflow 3	2000
WE32A	EDEN / ROOT	4900 EDEN CT	CA32A-1	ChemicalAnalyzer 1	2000
WE32A	EDEN / ROOT	4900 EDEN CT	CS32A-CL1	Chlorination Sys 1	2014
WE32A	EDEN / ROOT	4900 EDEN CT	CS32A-FE1	RFP Enclosure 1	2019
WE32A	EDEN / ROOT	4900 EDEN CT	CS32A-FL1	Fluoride Sys 1	2006
WE32A	EDEN / ROOT	4900 EDEN CT	CV32A-1	CheckValve 1	2019
WE32A	EDEN / ROOT	4900 EDEN CT	FI32A-1	Filter 1	1999
WE32A	EDEN / ROOT	4900 EDEN CT	FI32A-2	Filter 2	1999
WE32A	EDEN / ROOT	4900 EDEN CT	FM32A-1	FlowMeter 1	2015
WE32A	EDEN / ROOT	4900 EDEN CT	FM32A-2	FlowMeter 2	1999
WE32A	EDEN / ROOT	4900 EDEN CT	FM32A-3	FlowMeter 3	1999
WE32A	EDEN / ROOT	4900 EDEN CT	FM32A-4	FlowMeter 4	1999
WE32A	EDEN / ROOT	4900 EDEN CT	FM32A-5	FlowMeter 5	2015
WE32A	EDEN / ROOT	4900 EDEN CT	HV32A-1	HydraulicValve1	1999
WE32A	EDEN / ROOT	4900 EDEN CT	HV32A-2	HydraulicValve2	1999
WE32A	EDEN / ROOT	4900 EDEN CT	HV32A-3	HydraulicValve3	1999
WE32A	EDEN / ROOT	4900 EDEN CT	HV32A-4	HydraulicValve4	1999
WE32A	EDEN / ROOT	4900 EDEN CT	LT32A-1	LevelTransducer 1	2013
WE32A	EDEN / ROOT	4900 EDEN CT	LT32A-2	LevelTransducer 2	2013
WE32A	EDEN / ROOT	4900 EDEN CT	LT32A-3	LevelTransducer 3	2013
WE32A	EDEN / ROOT	4900 EDEN CT	LT32A-4	LevelTransducer 4	2013
WE32A	EDEN / ROOT	4900 EDEN CT	MC32A-1	MotorControlCenter1	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MO32A-1	MOTOR 01	2013
WE32A	EDEN / ROOT	4900 EDEN CT	MO32A-2	MOTOR 02	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MO32A-3	MOTOR 03	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-1	MotorOperatedValve 1	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-10	MotorOperatedValve10	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-11	MotorOperatedValve11	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-12	MotorOperatedValve12	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-2	MotorOperatedValve 2	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-3	MotorOperatedValve 3	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-4	MotorOperatedValve 4	1999

Well	Name	Address	Equipment ID	Label	Intallation Date
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-5	MotorOperatedValve 5	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-6	MotorOperatedValve 6	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-7	MotorOperatedValve 7	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-8	MotorOperatedValve 8	1999
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-9	MotorOperatedValve 9	1999
WE32A	EDEN / ROOT	4900 EDEN CT	PT32A-1	PressureTransducer 1	2019
WE32A	EDEN / ROOT	4900 EDEN CT	PT32A-2	PressureTransducer 2	2019
WE32A	EDEN / ROOT	4900 EDEN CT	PT32A-3	PressureTransducer 3	2019
WE32A	EDEN / ROOT	4900 EDEN CT	PT32A-4	PressureTransducer 4	2019
WE32A	EDEN / ROOT	4900 EDEN CT	PU32A-1	PUMP 1	2003
WE32A	EDEN / ROOT	4900 EDEN CT	PU32A-2	PUMP 2	1999
WE32A	EDEN / ROOT	4900 EDEN CT	PU32A-3	PUMP 3	1999
WE32A	EDEN / ROOT	4900 EDEN CT	PU32A-4	PUMP 4	1999
WE32A	EDEN / ROOT	4900 EDEN CT	RT32A-1	RemoteTelemetryUnit1	1999
WE32A	EDEN / ROOT	4900 EDEN CT	SU32A-1	Sump 1	1999
WE32A	EDEN / ROOT	4900 EDEN CT	SU32A-2	Sump 2	1999
WE32A	EDEN / ROOT	4900 EDEN CT	SW-32A	System Well 1	1999
WE32A	EDEN / ROOT	4900 EDEN CT	VA32A-1	Valving 1	1999
WE32A	EDEN / ROOT	4900 EDEN CT	VA32A-2	Valving 2	1999
WE32A	EDEN / ROOT	4900 EDEN CT	VA32A-3	Valving 3	1999
WE32A	EDEN / ROOT	4900 EDEN CT	VA32A-4	Valving 4	1999
WE32A	EDEN / ROOT	4900 EDEN CT	VF32A	VARIABLE FREQUENCY DRIVE 1	2014
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	AR33A-1	Air Release Valve 1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	BF33A-1	Backflow 1	2000
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	CC33A-1	ExFn	2016
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	CC33A-2	Wall	2016
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	CC33A-3	MCC	2016
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	CS33A-CL1	Chlorination Sys 1	2011
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	CS33A-FE1	RFP Enclosure 1	2000
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	CS33A-FE2	RFP Enclosure 2	2006
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	CS33A-FL1	Fluoride Sys 1	2019
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	CV33A-1	CheckValve 1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	FM33A-1	FlowMeter 1	2015
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	GE33A	Generator 1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	HV33A-1	HydraulicValve1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	LT33A-1	LevelTransducer 1	2015
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	LT33A-2	LevelTransducer 2	2015
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	MC33A-1	MotorControlCenter1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	MO33A-1	MOTOR 01	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	PT33A-1	PressureTransducer 1	2011
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	PU33A-1	PUMP 1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	RT33A-1	RemoteTelemetryUnit1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	SE33A	Sound Enclosure 1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	SU33A-1	Sump 1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	SW-33A	System Well 1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	VA33A-1	Valving 1	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	VA33A-2	Valving 2	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	VA33A-3	Valving 3	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	VA33A-4	Valving 4	2001
WE33A	AUBURN / NORRIS	4004 AUBURN BLVD	VF33A	VARIABLE FREQUENCY DRIVE 1	2016
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	AR34-1	Air Release Valve 1	2016
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	AR34-2	Air Release Valve 2	2016
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	CS34-CL1	Chlorination Sys 1	2004
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	CS34-FE1	RFP Enclosure 1	2004
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	CV34-1	CheckValve 1	2016
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	FM34-1	FlowMeter 1	2014
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	MC34-1	MotorControlCenter1	1956
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	MO34-1	MOTOR 01	2004
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	PT34-1	PressureTransducer 1	2016
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	PU34-1	PUMP 1	2004
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	SS34-1	SandSeparator 1	1990
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	SW-34	System Well 1	1956
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	TA34-1	Tank 1	1956
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	VA34-1	Valving 1	1956
WE34	LA CIENEGA / MELROSE	6503 LA CIENEGA DR	VA34-2	Valving 2	1956
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	AR35-1	Air Release Valve 1	2016
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	AR35-2	Air Release Valve 2	2016
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	CS35-CL1	Chlorination Sys 1	2016
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	CS35-FE1	RFP Enclosure 1	2006
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	CS35-FL1	Fluoride Sys 1	2019
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	CV35-1	CheckValve 1	2016
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	FM35-1	FlowMeter 1	2014

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WE35	ULYSSES / MERCURY	4421 ULYSSES DR	MC35-1	MotorControlCenter1	2004
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	MO35-1	MOTOR 01	2020
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	PT35-1	PressureTransducer 1	2016
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	PU35-1	PUMP 1	2014
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	RT35-1	RemoteTelemetryUnit1	2006
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	SS35-1	SandSeparator 1	1995
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	SW-35	System Well 1	1956
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	TA35-1	Tank 1	1956
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	VA35-1	Valving 1	1956
WE35	ULYSSES / MERCURY	4421 ULYSSES DR	VA35-2	Valving 2	1956
WE37	MORSE / COTTAGE PARK	3169 ELLINGTON CIR (REAR)	AR37-1	Air Release Valve 1	2017
WE37	MORSE / COTTAGE PARK	3169 ELLINGTON CIR (REAR)	CV37-1	CheckValve 1	2017
WE37	MORSE / COTTAGE PARK	3169 ELLINGTON CIR (REAR)	FM37-1	FlowMeter 1	2016
WE37	MORSE / COTTAGE PARK	3169 ELLINGTON CIR (REAR)	MC37-1	MotorControlCenter1	2013
WE37	MORSE / COTTAGE PARK	3169 ELLINGTON CIR (REAR)	PT37-1	PressureTransducer 1	2017
WE37	MORSE / COTTAGE PARK	3169 ELLINGTON CIR (REAR)	PU37-1	PUMP 1	1957
WE37	MORSE / COTTAGE PARK	3169 ELLINGTON CIR (REAR)	SS37-1	SandSeparator 1	1990
WE37	MORSE / COTTAGE PARK	3169 ELLINGTON CIR (REAR)	SW-37	System Well 1	1957
WE37	MORSE / COTTAGE PARK	3169 ELLINGTON CIR (REAR)	VA37-1	Valving 1	1957
WE37	MORSE / COTTAGE PARK	3169 ELLINGTON CIR (REAR)	VA37-2	Valving 2	1957
WE39	THOMAS / ELKHORN	6900 THOMAS DR	AR39-1	Air Release Valve 1	2017
WE39	THOMAS / ELKHORN	6900 THOMAS DR	CV39-1	CheckValve 1	2017
WE39	THOMAS / ELKHORN	6900 THOMAS DR	FM39-1	FlowMeter 1	2014
WE39	THOMAS / ELKHORN	6900 THOMAS DR	MC39-1	MotorControlCenter1	2013
WE39	THOMAS / ELKHORN	6900 THOMAS DR	PT39-1	PressureTransducer 1	2017
WE39	THOMAS / ELKHORN	6900 THOMAS DR	PU39-1	PUMP 1	1957
WE39	THOMAS / ELKHORN	6900 THOMAS DR	SW-39	System Well 1	1957
WE39	THOMAS / ELKHORN	6900 THOMAS DR	VA39-1	Valving 1	1957
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	AR3A-1	Air Release Valve 1	1992
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	CS3A-CL1	Chlorination Sys 1	2012
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	CS3A-FE1	RFP Enclosure 1	2006
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	CS3A-FL1	Fluoride Sys 1	2019
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	CV3A-1	CheckValve 1	2002
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	FM3A-1	FlowMeter 1	2016
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	HV3A-1	HydraulicValve1	2012
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	MC3A-1	MotorControlCenter1	2013
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	MO3A-1	MOTOR 01	2015
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	PT3A-1	PressureTransducer 1	2012
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	PU3A-1	PUMP 1	2015
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	RT3A-1	RemoteTelemetryUnit1	2013
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	SW-03A	System Well 1	1962
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	VA3A-1	Valving 1	1962
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	VA3A-2	Valving 2	1962
WE3A	KUBEL / ARMSTRONG	1791 KUBEL CIR	VA3A-3	Valving 3	1962
WE40A	AUBURN YARD	2736 AUBURN BL	AR40A-1	Air Release Valve 1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	BF40A-1	Backflow 1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	CC40A-1	Wall	2015
WE40A	AUBURN YARD	2736 AUBURN BL	CS40A-CL1	Chlorination Sys 1	2006
WE40A	AUBURN YARD	2736 AUBURN BL	CS40A-FE1	RFP Enclosure 1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	CS40A-FE2	RFP Enclosure 2	2006
WE40A	AUBURN YARD	2736 AUBURN BL	CS40A-FL1	Fluoride Sys 1	2019
WE40A	AUBURN YARD	2736 AUBURN BL	CV40A-1	CheckValve 1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	FM40A-1	FlowMeter 1	2015
WE40A	AUBURN YARD	2736 AUBURN BL	GE40A-1	Generator 1	1999
WE40A	AUBURN YARD	2736 AUBURN BL	HV40A-1	HydraulicValve1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	LT40A-1	LevelTransducer 1	2014
WE40A	AUBURN YARD	2736 AUBURN BL	LT40A-2	LevelTransducer 2	2014
WE40A	AUBURN YARD	2736 AUBURN BL	MC40A-1	MotorControlCenter1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	MO40A-1	MOTOR 01	2018
WE40A	AUBURN YARD	2736 AUBURN BL	PT40A-1	PressureTransducer 1	2010
WE40A	AUBURN YARD	2736 AUBURN BL	PU40A-1	PUMP 1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	RT40A-1	RemoteTelemetryUnit1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	SE40A	Sound Enclosure 1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	SU40A-1	Sump 1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	SW-40A	System Well 1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	TA40A-1	Tank 1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	VA40A-1	Valving 1	2000
WE40A	AUBURN YARD	2736 AUBURN BL	VA40A-2	Valving 2	2000
WE40A	AUBURN YARD	2736 AUBURN BL	VA40A-3	Valving 3	2000
WE40A	AUBURN YARD	2736 AUBURN BL	VA40A-4	Valving 4	2000
WE40A	AUBURN YARD	2736 AUBURN BL	VA40A-5	Valving 5	2000
WE40A	AUBURN YARD	2736 AUBURN BL	VA40A-6	Valving 6	2000

Well	Name	Address	Equipment ID	Label	Intallation Date
WE40A	AUBURN YARD	2736 AUBURN BL	VF40A	VARIABLE FREQUENCY DRIVE 1	2015
WE41	ALBATROSS / IRIS	1812 IRIS AVE	AR41-1	Air Release Valve 1	2017
WE41	ALBATROSS / IRIS	1812 IRIS AVE	CS41-CL1	Chlorination Sys 1	2017
WE41	ALBATROSS / IRIS	1812 IRIS AVE	CS41-FE1	RFP Enclosure 1	2006
WE41	ALBATROSS / IRIS	1812 IRIS AVE	CS41-FE2	RFP Enclosure 2	2006
WE41	ALBATROSS / IRIS	1812 IRIS AVE	CS41-FL1	Fluoride Sys 1	2017
WE41	ALBATROSS / IRIS	1812 IRIS AVE	CV41-1	CheckValve 1	2017
WE41	ALBATROSS / IRIS	1812 IRIS AVE	FM41-1	FlowMeter 1	2014
WE41	ALBATROSS / IRIS	1812 IRIS AVE	MC41-1	MotorControlCenter1	2006
WE41	ALBATROSS / IRIS	1812 IRIS AVE	MO41-1	MOTOR 01	2008
WE41	ALBATROSS / IRIS	1812 IRIS AVE	PT41-1	PressureTransducer 1	2017
WE41	ALBATROSS / IRIS	1812 IRIS AVE	PU41-1	PUMP 1	2008
WE41	ALBATROSS / IRIS	1812 IRIS AVE	RT41-1	RemoteTelemetryUnit1	2006
WE41	ALBATROSS / IRIS	1812 IRIS AVE	SW-41	System Well 1	1957
WE41	ALBATROSS / IRIS	1812 IRIS AVE	VA41-1	Valving 1	1957
WE41	ALBATROSS / IRIS	1812 IRIS AVE	VA41-2	Valving 2	1957
WE43	EDISON / TRUAX	3101 TRUAX CT	AR43-1	Air Release Valve 1	2017
WE43	EDISON / TRUAX	3101 TRUAX CT	CS43-CL1	Chlorination Sys 1	2017
WE43	EDISON / TRUAX	3101 TRUAX CT	CS43-FE1	RFP Enclosure 1	2007
WE43	EDISON / TRUAX	3101 TRUAX CT	CS43-FE2	RFP Enclosure 2	2007
WE43	EDISON / TRUAX	3101 TRUAX CT	CS43-FL1	Fluoride Sys 1	2019
WE43	EDISON / TRUAX	3101 TRUAX CT	CV43-1	CheckValve 1	2017
WE43	EDISON / TRUAX	3101 TRUAX CT	FM43-1	FlowMeter 1	2016
WE43	EDISON / TRUAX	3101 TRUAX CT	HV43-1	HydraulicValve1	2007
WE43	EDISON / TRUAX	3101 TRUAX CT	MC43-1	MotorControlCenter1	2000
WE43	EDISON / TRUAX	3101 TRUAX CT	MO43-1	MOTOR 01	1994
WE43	EDISON / TRUAX	3101 TRUAX CT	PT43-1	PressureTransducer 1	2017
WE43	EDISON / TRUAX	3101 TRUAX CT	PU43-1	PUMP 1	1998
WE43	EDISON / TRUAX	3101 TRUAX CT	RT43-1	RemoteTelemetryUnit1	2013
WE43	EDISON / TRUAX	3101 TRUAX CT	SW-43	System Well 1	1957
WE43	EDISON / TRUAX	3101 TRUAX CT	VA43-1	Valving 1	1957
WE43	EDISON / TRUAX	3101 TRUAX CT	VA43-2	Valving 2	1957
WE43	EDISON / TRUAX	3101 TRUAX CT	VA43-3	Valving 3	1957
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	AR46-1	Air Release Valve 1	2018
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	CS46R-CL1	Chlorination Sys 1	2018
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	CV46-1	CheckValve 1	2018
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	FM46-1	FlowMeter 1	2014
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	HV46-1	HydraulicValve1	2008
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	MC46-1	MotorControlCenter1	2013
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	MO46-1	MOTOR 01	1994
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	PT46-1	PressureTransducer 1	2018
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	PU46-1	PUMP 1	1996
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	RT46-1	RemoteTelemetryUnit1	2013
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	SS46-1	SandSeparator 1	1998
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	SW-46	System Well 1	1958
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	VA46-1	Valving 1	1958
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	VA46-2	Valving 2	1958
WE46	JONAS / SIERRA MILLS	2912 SIERRA MILLS LN	VA46-3	Valving 3	1958
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	AR47-1	Air Release Valve 1	2019
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	CS47-CL1	Chlorination Sys1	2017
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	CS47-FE1	RFP Enclosure 1	2006
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	CS47-FE2	RFP Enclosure 2	2006
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	CS47-FL1	Fluoride Sys 1	2019
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	CV47-1	CheckValve 1	2019
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	FM47-1	FlowMeter 1	2015
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	HV47-1	HydraulicValve1	2009
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	MC47-1	MotorControlCenter1	2012
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	MO47-1	MOTOR 01	2012
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	PT47-1	PressureTransducer 1	2019
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	PU47-1	PUMP 1	2008
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	RT47-1	RemoteTelemetryUnit1	2006
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	SU47-1	Sump 1	1959
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	SW-47	System Well 1	1959
WE47	COPENHAGEN / ARDEN	1631 COPENHAGEN WAY	VA47-1	Valving 1	1959
WE4B	BELL / MARCONI	2841 BELL ST	AR4B-1	Air Release Valve 1	1994
WE4B	BELL / MARCONI	2841 BELL ST	BF4B-1	Backflow 1	2000
WE4B	BELL / MARCONI	2841 BELL ST	CC4B-1	ExFn 1	2009
WE4B	BELL / MARCONI	2841 BELL ST	CC4B-2	Wall	2009
WE4B	BELL / MARCONI	2841 BELL ST	CS4B-CL1	Chlorination Sys 1	2014
WE4B	BELL / MARCONI	2841 BELL ST	CS4B-FE1	RFP Enclosure 1	2000
WE4B	BELL / MARCONI	2841 BELL ST	CS4B-FE2	RFP Enclosure 2	2006
WE4B	BELL / MARCONI	2841 BELL ST	CS4B-FL1	Fluoride Sys 1	2019

Well	Name	Address	Equipment ID	Label	Intallation Date
WE4B	BELL / MARCONI	2841 BELL ST	CV4B-1	CheckValve 1	2014
WE4B	BELL / MARCONI	2841 BELL ST	FM4B-1	FlowMeter 1	2015
WE4B	BELL / MARCONI	2841 BELL ST	GE4B	Generator 1	1997
WE4B	BELL / MARCONI	2841 BELL ST	HV4B-1	HydraulicValve1	2019
WE4B	BELL / MARCONI	2841 BELL ST	LT4B-1	LevelTransducer 1	2015
WE4B	BELL / MARCONI	2841 BELL ST	LT4B-2	LevelTransducer 2	2015
WE4B	BELL / MARCONI	2841 BELL ST	MC4B-1	MotorControlCenter1	1999
WE4B	BELL / MARCONI	2841 BELL ST	MO4B-1	MOTOR 01	2019
WE4B	BELL / MARCONI	2841 BELL ST	PT4B-1	PressureTransducer 1	2014
WE4B	BELL / MARCONI	2841 BELL ST	PU4B-1	PUMP 1	2019
WE4B	BELL / MARCONI	2841 BELL ST	RT4B-1	RemoteTelemetryUnit1	1999
WE4B	BELL / MARCONI	2841 BELL ST	SE4B	Sound Enclosure 1	1994
WE4B	BELL / MARCONI	2841 BELL ST	SU4B-1	SumpPump 1	2010
WE4B	BELL / MARCONI	2841 BELL ST	SU4B-2	Sump 1	2010
WE4B	BELL / MARCONI	2841 BELL ST	SW-04B	System Well 1	1994
WE4B	BELL / MARCONI	2841 BELL ST	VA4B-1	Valving 1	1994
WE4B	BELL / MARCONI	2841 BELL ST	VA4B-2	Valving 2	1994
WE4B	BELL / MARCONI	2841 BELL ST	VA4B-3	Valving 3	1994
WE4B	BELL / MARCONI	2841 BELL ST	VF4B	VARIABLE FREQUENCY DRIVE 1	2009
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	AR52-1	Air Release Valve 1	2019
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	CS52-CL1	Chlorination Sys 1	2007
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	CS52-FE1	RFP Enclosure 1	2007
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	CV52-1	CheckValve 1	2019
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	FM52-1	FlowMeter 1	2015
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	HV52-1	HydraulicValve1	2009
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	MC52-1	MotorControlCenter1	1959
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	MO52-1	MOTOR 01	2013
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	PT52-1	PressureTransducer 1	2019
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	PU52-1	PUMP 1	2013
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	RT52-1	RemoteTelemetryUnit1	2005
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	SW-52	System Well 1	1959
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	VA52-1	Valving 1	1959
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	VA52-2	Valving 2	1959
WE52	WEDDIGEN / GOTHBERG	6820 WEDDIGEN WAY	VA52-3	Valving 3	1959
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	AR55A-1	Air Release Valve 1	1999
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	AR55A-2	Air Release Valve 2	1999
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	AS55A	Alarm System 1	2014
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	BF55A-1	Backflow 1	1999
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	CC55A-1	AC Room Unit	2014
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	CS55A-CL1	Chlorination Sys 1	2019
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	CS55A-FE1	RFP Enclosure 1	2006
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	CS55A-FL1	Fluoride Sys 1	2019
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	CV55A-1	CheckValve 1	2019
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	FM55A-1	FlowMeter 1	2015
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	GE55A	Generator 1	2012
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	HV55A-1	HydraulicValve1	1999
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	LT55A-1	LevelTransducer 1	2013
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	LT55A-2	LevelTransducer 2	2013
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	MC55A-1	MotorControlCenter1	1999
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	MO55A-1	MOTOR 01	1999
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	PT55A-1	PressureTransducer 1	2019
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	PU55A-1	PUMP 1	1999
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	RT55A-1	RemoteTelemetryUnit1	1999
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	SW-55A	System Well 1	1999
WE55A	STEWART / LYNNDALE	1210 STEWARD RD	VA55A-1	Valving 1	1999
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	AR56A-1	Air Release Valve 1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	AR56A-2	Air Release Valve 2	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	BF56A-1	Backflow 1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	CC56A-1	AC Wall Unit	2015
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	CS56A-CL1	Chlorination Sys 1	2010
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	CS56A-FE1	RFP Enclosure 1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	CV56A-1	CheckValve 1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	FM56A-1	FlowMeter 1	2013
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	GE56A	Generator 1	1999
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	HV56A-1	HydraulicValve1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	LT56A-1	LevelTransducer 1	2014
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	MC56A-1	MotorControlCenter1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	MO56A-1	MOTOR 01	2018
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	PT56A-1	PressureTransducer 1	2010
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	PU56A-1	PUMP 1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	RT56A-1	RemoteTelemetryUnit1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	SE56A	Sound Enclosure 1	2000

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WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	SU56A-1	Sump 1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	SW-56A	System Well 1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	TA56A-1	Tank 1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	VA56A-1	Valving 1	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	VA56A-2	Valving 2	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	VA56A-3	Valving 3	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	VA56A-4	Valving 4	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	VA56A-5	Valving 5	2000
WE56A	FAIRBAIRN / KARL	N END FAIRBAIRN DR	VF56A	VARIABLE FREQUENCY DRIVE 1	2015
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	AR59A-1	Air Release Valve 1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	BF59A-1	Backflow 1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	CC59A-1	AC MCC Unit	2015
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	CS59A-CL1	Chlorination Sys 1	2018
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	CS59A-FE1	RFP Enclosure 1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	CV59A-1	CheckValve 1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	FM59A-1	FlowMeter 1	2015
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	GE59A	Generator 1	1999
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	HV59A-1	HydraulicValve1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	MC59A-1	MotorControlCenter1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	MO59A-1	MOTOR 01	2016
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	PT59A-1	PressureTransducer 1	2010
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	PU59A-1	PUMP 1	2020
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	RT59A-1	RemoteTelemetryUnit1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	SE59A	Sound Enclosure 1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	SU59A-1	Sump 1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	SW-59A	System Well 1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	VA59A-1	Valving 1	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	VA59A-2	Valving 2	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	VA59A-3	Valving 3	2000
WE59A	BAINBRIDGE / HOLMES SCHOOL	3948 BAINBRIDGE DR	VF59A	VARIABLE FREQUENCY DRIVE 1	2015
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	AR60-1	Air Release Valve 1	1995
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	CS60-CL1	Chlorination Sys 1	2015
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	CS60-FE1	RFP Enclosure 1	2006
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	CS60-FL1	Fluoride Sys 1	2019
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	CV60-1	CheckValve 1	2005
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	FM60-1	FlowMeter 1	2015
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	HV60-1	Hydraulic Valve1	2015
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	LT60-1	LevelTransducer 1	2014
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	LT60-2	LevelTransducer 2	2014
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	MC60-1	MotorControlCenter1	2003
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	MO60-1	MOTOR 01	2006
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	PT60-1	PressureTransducer 1	2015
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	PU60-1	PUMP 1	2006
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	RT60-1	RemoteTelemetryUnit1	2003
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	SW-60	System Well 1	1965
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	VA60-1	Valving 1	1965
WE60	WHITNEY / CONCETTA	BET 4528 AND 4534 WHITNEY AVE	VA60-2	Valving 2	1965
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	AR64-1	Air Release Valve 1	1998
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	AR64-2	Air Release Valve 2	1998
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	CS64-CL1	Chlorination Sys 1	2018
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	CS64-FE1	RFP Enclosure 1	2008
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	CV64-1	CheckValve 1	2008
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	FM64-1	FlowMeter 1	2016
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	MC64-1	MotorControlCenter1	2010
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	MO64-1	MOTOR 01	2014
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	PT64-1	PressureTransducer 1	2018
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	PU64-1	PUMP 1	2014
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	RT64-1	RemoteTelemetryUnit1	2010
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	SS64-1	SandSeparator 1	1995
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	SW-64	System Well 1	1968
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	TA64-1	Tank 1	1968
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	VA64-1	Valving 1	1968
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	VA64-2	Valving 2	1968
WE64	GALBRATH / ANTELOPE WOODS	GALBRATH / ANTELOPE WOODS	VA64-3	Valving 3	1968
WE65	MERRILY / ANNADALE	E END MERRILY WAY	AR65-1	Air Release Valve 1	2002
WE65	MERRILY / ANNADALE	E END MERRILY WAY	AR65-2	Air Release Valve 2	2002
WE65	MERRILY / ANNADALE	E END MERRILY WAY	BF65-1	Backflow 1	2019
WE65	MERRILY / ANNADALE	E END MERRILY WAY	CS65-CL1	Chlorination Sys 1	2012
WE65	MERRILY / ANNADALE	E END MERRILY WAY	CS65-FE1	RFP Enclosure 1	2006
WE65	MERRILY / ANNADALE	E END MERRILY WAY	CS65-FL1	Fluoride Sys 1	2019
WE65	MERRILY / ANNADALE	E END MERRILY WAY	CV65-1	CheckValve 1	2012
WE65	MERRILY / ANNADALE	E END MERRILY WAY	FM65-1	FlowMeter 1	2011

Well	Name	Address	Equipment ID	Label	Intallation Date
WE65	MERRILY / ANNADALE	E END MERRILY WAY	MC65-1	MotorControlCenter1	1972
WE65	MERRILY / ANNADALE	E END MERRILY WAY	MO65-1	MOTOR 01	2018
WE65	MERRILY / ANNADALE	E END MERRILY WAY	PT65-1	PressureTransducer 1	2012
WE65	MERRILY / ANNADALE	E END MERRILY WAY	PU65-1	PUMP 1	2018
WE65	MERRILY / ANNADALE	E END MERRILY WAY	RT65-1	RemoteTelemetryUnit1	2006
WE65	MERRILY / ANNADALE	E END MERRILY WAY	SE65	Sound Enclosure 1	2002
WE65	MERRILY / ANNADALE	E END MERRILY WAY	SW-65	System Well 1	1972
WE65	MERRILY / ANNADALE	E END MERRILY WAY	TA65-1	Tank 1	1972
WE65	MERRILY / ANNADALE	E END MERRILY WAY	VA65-1	Valving 1	1972
WE65	MERRILY / ANNADALE	E END MERRILY WAY	VA65-2	Valving 2	1972
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	AR66-1	Air Release Valve 1	2002
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	AR66-2	Air Release Valve 2	2002
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	CS66-CL1	Chlorination Sys 1	2012
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	CS66-FE1	RFP Enclosure 1	2006
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	CS66-FL1	Fluoride Sys 1	2019
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	CV66-1	CheckValve 1	2012
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	FM66-1	FlowMeter 1	2015
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	GE66-1	Generator 1	1999
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	MC66-1	MotorControlCenter1	1995
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	MO66-1	MOTOR 01	1998
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	PT66-1	PressureTransducer 1	2012
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	PU66-1	PUMP 1	1997
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	RT66-1	RemoteTelemetryUnit1	2002
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	SE66	Sound Enclosure 1	2002
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	SW-66	System Well 1	1972
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	TA66-1	Tank 1	1972
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	VA66-1	Valving 1	1972
WE66	EASTERN / WOODSIDE CHURCH	3312 EASTERN AVE	VA66-2	Valving 2	1972
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	AR68-1	Air Release Valve 1	2019
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	CS68-FE1	RFP Enclosure 1	2006
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	CS68-FE2	RFP Enclosure 2	2006
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	CS68R-CL1	Chlorination Sys	2019
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	CV68-1	CheckValve 1	2009
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	FM68-1	FlowMeter 1	2014
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	HV68-1	HydraulicValve1	2014
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	MC68-1	MotorControlCenter1	1989
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	MO68-1	MOTOR 01	1989
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	PT68-1	PressureTransducer 1	2019
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	PU68-1	PUMP 1	1989
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	RT68-1	RemoteTelemetryUnit1	2018
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	SW-68	System Well 1	1989
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	VA68-1	Valving 1	1989
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	VA68-2	Valving 2	1989
WE68	NORTHROP / DORNAJO	227' N of Northrop 630' W of Do	VA68-3	Valving 3	1989
WE69	HILLDALE / COOPER	2800 HILLDALE RD	AR69-1	Air Release Valve 1	2007
WE69	HILLDALE / COOPER	2800 HILLDALE RD	AR69-2	Air Release Valve 2	2007
WE69	HILLDALE / COOPER	2800 HILLDALE RD	CS69-CL2	Chlorination Sys 2	2017
WE69	HILLDALE / COOPER	2800 HILLDALE RD	CS69-FL1	Fluoride Sys 1	2019
WE69	HILLDALE / COOPER	2800 HILLDALE RD	CS69R-CL1	Chlorination Sys	2017
WE69	HILLDALE / COOPER	2800 HILLDALE RD	CV69-1	CheckValve 1	2017
WE69	HILLDALE / COOPER	2800 HILLDALE RD	FM69-1	FlowMeter 1	2012
WE69	HILLDALE / COOPER	2800 HILLDALE RD	MC69-1	MotorControlCenter1	1977
WE69	HILLDALE / COOPER	2800 HILLDALE RD	MO69-1	MOTOR 01	2020
WE69	HILLDALE / COOPER	2800 HILLDALE RD	PT69-1	PressureTransducer 1	2017
WE69	HILLDALE / COOPER	2800 HILLDALE RD	PU69-1	PUMP 1	2020
WE69	HILLDALE / COOPER	2800 HILLDALE RD	RT69-1	RemoteTelemetryUnit1	2012
WE69	HILLDALE / COOPER	2800 HILLDALE RD	SW-69	System Well 1	1977
WE69	HILLDALE / COOPER	2800 HILLDALE RD	TA69-1	Tank 1	2015
WE69	HILLDALE / COOPER	2800 HILLDALE RD	VA69-1	Valving 1	1977
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	AR70-1	Air Release Valve 1	2006
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	AR70-2	Air Release Valve 2	2006
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	CS70-CL1	Chlorination Sys 1	2016
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	CS70-FE1	RFP Enclosure 1	1995
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	CS70-FL1	Fluoride Sys 1	2019
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	CV70-1	CheckValve 1	2016
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	FM70-1	FlowMeter 1	2014
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	MC70-1	MotorControlCenter1	2016
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	MO70-1	MOTOR 01	2020
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	PT70-1	PressureTransducer 1	2016
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	PU70-1	PUMP 1	2020
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	RT70-1	RemoteTelemetryUnit1	2015
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	SW-70	System Well 1	1976

Well	Name	Address	Equipment ID	Label	Intallation Date
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	TA70-1	Tank 1	1976
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	VA70-1	Valving 1	1976
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	VA70-2	Valving 2	1976
WE70	SIERRA / BLACKMER	2281 SIERRA BLVD	VA70-3	Valving 3	1976
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	AR71-1	Air Release Valve 1	1998
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	AS71	Alarm System 1	2013
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	BF71-1	Backflow 1	2000
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	CC71-1	ExFn 1	2013
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	CS71-CL1	Chlorination Sys 1	2018
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	CS71-FE1	RFP Enclosure 1	2006
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	CS71-FL1	Fluoride Sys 1	2019
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	CV71-1	CheckValve 1	2018
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	FM71-1	FlowMeter 1	2015
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	HV71-1	HydraulicValve1	1998
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	LT71-1	LevelTransducer 1	2019
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	LT71-2	LevelTransducer 2	2019
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	MC71-1	MotorControlCenter1	1999
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	MO71-1	MOTOR 01	1998
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	PT71-1	PressureTransducer 1	2018
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	PU71-1	PUMP 1	1998
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	RT71-1	RemoteTelemetryUnit1	1999
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	SW-71	System Well 1	1998
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	VA71-1	Valving 1	1998
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	VA71-2	Valving 2	1998
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	VA71-3	Valving 3	1998
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	VA71-4	Valving 4	1998
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	VF71	VARIABLE FREQUENCY DRIVE 1	2013
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	AR72-1	Air Release Valve 1	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	AR72-2	Air Release Valve 2	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	AS72	Alarm System 1	2013
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	BF72-1	Backflow 1	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	CC72-1	AC Room Unit	2013
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	CS72-CL1	Chlorination Sys 1	2018
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	CS72-FE1	RFP Enclosure 1	2006
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	CS72-FL1	Fluoride Sys 1	2019
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	CV72-1	CheckValve 1	2018
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	FM72-1	FlowMeter 1	2018
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	GE72-1	Generator 1	2011
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	HV72-1	HydraulicValve1	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	LT72-1	LevelTransducer 1	2019
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	MC72-1	MotorControlCenter1	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	MO72-1	MOTOR 01	2009
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	PT72-1	PressureTransducer 1	2018
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	PU72-1	PUMP 1	2009
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	RT72-1	RemoteTelemetryUnit1	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	SW-72	System Well 1	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	TA72-1	Tank 1	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	VA72-1	Valving 1	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	VA72-2	Valving 2	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	VA72-3	Valving 3	1998
WE72	RIVER WALK / NETP	1000 RIVER WALK WAY	VA72-4	Valving 4	1998
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	AR73-1	Air Release Valve 1	1999
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	BF73-1	Backflow 1	2000
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	CS73-CL1	Chlorination Sys 1	2019
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	CS73-FE1	RFP Enclosure 1	2000
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	CS73-FE2	RFP Enclosure 2	2006
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	CS73-FL1	Fluoride Sys 1	2019
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	CV73-1	CheckValve 1	2019
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	FM73-1	FlowMeter 1	2016
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	HV73-1	HydraulicValve1	1999
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	LT73-1	LevelTransducer 1	2013
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	LT73-2	LevelTransducer 2	2013
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	MC73-1	MotorControlCenter1	1998
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	MO73-1	MOTOR 01	2013
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	PT73-1	PressureTransducer 1	2019
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	PU73-1	PUMP 1	2013
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	RT73-1	RemoteTelemetryUnit1	1999
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	SW-73	System Well 1	1999
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	VA73-1	Valving 1	1999
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	VA73-2	Valving 2	1999
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	VA73-3	Valving 3	1999
WE73	RIVER WALK / NETP EAST	1000 RIVER WALK WAY	VA73-4	Valving 4	1999

Well	Name	Address	Equipment ID	Label	Intallation Date
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	AR74-1	Air Release Valve 1	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	BF74-1	Backflow 1	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	CS74-CL1	Chlorination Sys 1	2018
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	CS74-FE1	RFP Enclosure 1	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	CS74-FE2	RFP Enclosure 2	2006
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	CS74-FL1	Fluoride Sys 1	2019
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	CV74-1	CheckValve 1	2018
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	FM74-1	FlowMeter 1	2016
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	HV74-1	HydraulicValve1	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	LT74-1	LevelTransducer 1	2019
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	LT74-2	LevelTransducer 2	2019
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	MC74-1	MotorControlCenter1	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	MO74-1	MOTOR 01	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	PT74-1	PressureTransducer 1	2018
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	PU74-1	PUMP 1	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	RT74-1	RemoteTelemetryUnit1	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	SW-74	System Well 1	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	VA74-1	Valving 1	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	VA74-2	Valving 2	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	VA74-3	Valving 3	1998
WE74	RIVER WALK / NETP SOUTH	1000 RIVER WALK WAY	VA74-4	Valving 4	1998
WE76	FULTON / FAIR OAKS	541 MONROE ST	AR76-1	Air Release Valve 1	1990
WE76	FULTON / FAIR OAKS	541 MONROE ST	CS76-CL1	Chlorination Sys 1	2010
WE76	FULTON / FAIR OAKS	541 MONROE ST	CS76-FE1	RFP Enclosure 1	2007
WE76	FULTON / FAIR OAKS	541 MONROE ST	CV76-1	CheckValve 1	2000
WE76	FULTON / FAIR OAKS	541 MONROE ST	FM76-1	FlowMeter 1	2013
WE76	FULTON / FAIR OAKS	541 MONROE ST	HV76-1	HydraulicValve1	2010
WE76	FULTON / FAIR OAKS	541 MONROE ST	LT76-1	LevelTransducer 1	2016
WE76	FULTON / FAIR OAKS	541 MONROE ST	MC76-1	MotorControlCenter1	2015
WE76	FULTON / FAIR OAKS	541 MONROE ST	MO76-1	MOTOR 01	1990
WE76	FULTON / FAIR OAKS	541 MONROE ST	PT76-1	PressureTransducer 1	2010
WE76	FULTON / FAIR OAKS	541 MONROE ST	PU76-1	PUMP 1	1960
WE76	FULTON / FAIR OAKS	541 MONROE ST	RT76-1	RemoteTelemetryUnit1	2015
WE76	FULTON / FAIR OAKS	541 MONROE ST	SW-76	System Well 1	1960
WE76	FULTON / FAIR OAKS	541 MONROE ST	VA76-1	Valving 1	1960
WE76	FULTON / FAIR OAKS	541 MONROE ST	VA76-2	Valving 2	1960
WE76	FULTON / FAIR OAKS	541 MONROE ST	VA76-3	Valving 3	1960
WE76	FULTON / FAIR OAKS	541 MONROE ST	VA76-4	Valving 4	1960
WE77	LARCH / NORTHROP	870 LARCH LN	AR77-1	Air Release Valve 1	2001
WE77	LARCH / NORTHROP	870 LARCH LN	AR77-2	Air Release Valve 2	2001
WE77	LARCH / NORTHROP	870 LARCH LN	CS77-CL1	Chlorination Sys 1	2011
WE77	LARCH / NORTHROP	870 LARCH LN	CS77-FE1	RFP Enclosure 1	2011
WE77	LARCH / NORTHROP	870 LARCH LN	CV77-1	CheckValve 1	2011
WE77	LARCH / NORTHROP	870 LARCH LN	FM77-1	FlowMeter 1	2016
WE77	LARCH / NORTHROP	870 LARCH LN	MC77-1	MotorControlCenter1	1971
WE77	LARCH / NORTHROP	870 LARCH LN	MO77-1	MOTOR 01	1990
WE77	LARCH / NORTHROP	870 LARCH LN	PT77-1	PressureTransducer 1	2011
WE77	LARCH / NORTHROP	870 LARCH LN	PU77-1	PUMP 1	1971
WE77	LARCH / NORTHROP	870 LARCH LN	RT77-1	RemoteTelemetryUnit1	2016
WE77	LARCH / NORTHROP	870 LARCH LN	SW-77	System Well 1	1971
WE77	LARCH / NORTHROP	870 LARCH LN	TA77-1	Tank 1	1971
WE77	LARCH / NORTHROP	870 LARCH LN	VA77-1	Valving 1	1971
WE77	LARCH / NORTHROP	870 LARCH LN	VA77-2	Valving 2	1971
WE77	LARCH / NORTHROP	870 LARCH LN	VA77-3	Valving 3	1971
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	AR9-1	Air Release Valve 1	2009
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	CS9-CL1	Chlorination Sys 1	2019
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	CS9-FE1	RFP Enclosure 1	2007
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	CS9-FL1	Fluoride Sys 1	2019
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	CV9-1	CheckValve 1	2009
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	FM9-1	FlowMeter 1	2013
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	HV9-1	HydraulicValve1	1999
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	LT9-1	LevelTransducer 1	2012
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	MC9-1	MotorControlCenter1	2013
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	MO9-1	MOTOR 01	2013
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	PT9-1	PressureTransducer 1	2019
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	PU9-1	PUMP 1	2012
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	RT9-1	RemoteTelemetryUnit1	2013
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	SW-9	System Well 1	1949
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	VA9-1	Valving 1	1949
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	VA9-2	Valving 2	1949
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	VA9-3	Valving 3	1949
WE9	RAVENWOOD / EASTERN	4308 RAVENWOOD AVE	VA9-4	Valving 4	1949

Well	Name	Address	Equipment ID	Label	Intallation Date
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	ARMC10-1	Air Release Valve 1	2005
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	CSMC10-CL1	Chlorination Sys 1	2015
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	CVMC10-1	CheckValve 1	2005
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	FMMC10-1	FlowMeter 1	2015
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	MCMC10-1	MotorControlCenter1	2008
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	MOMC10-1	MOTOR 01	1999
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	PTMC10-1	PressureTransducer 1	2015
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	PUMC10-1	PUMP 1	1945
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	RTMC10-1	RemoteTelemetryUnit1	2008
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	SUMC10-1	Sump 1	1945
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	SW-MC10	System Well 1	1945
WEMC10	McCLELLAN	McCLELLAN BUSINESS PARK	VAMC10-1	Valving 1	1945
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	ARMC-C1-1	Air Release Valve 1	2018
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	ARMC-C1-2	Air Release Valve 2	2018
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	BFMC-C1-1	Backflow 1	2018
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	CSMC-C1-CL1	Chlorination Sys 1	2018
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	CSMC-C1-FE1	RFP Enclosure 1	1995
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	CVMC-C1-1	CheckValve 1	2018
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	FMMC-C1-1	FlowMeter 1	2014
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	MCMC-C1-1	MotorControlCenter1	1958
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	MOMC-C1-1	MOTOR 01	1999
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	PTMC-C1-1	PressureTransducer 1	2018
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	PUMC-C1-1	PUMP 1	1958
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	RTMC-C1-1	RemoteTelemetryUnit1	2015
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	SW-MC-C1	System Well 1	1958
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	TAMC-C1-1	Tank 1	1958
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	VAMC-C1-1	Valving 1	1958
WEMC-C1	CAPEHART MC-C1	THE ARBORS AT ANTELOPE	VAMC-C1-2	Valving 2	1958
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	ARMC-C3-1	Air Release Valve 1	1990
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	CSMC-C3-CL1	Chlorination Sys 1	2010
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	CSMC-C3-FE1	RFP Enclosure 1	2007
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	CVMC-C3-1	CheckValve 1	2000
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	FMMC-C3-1	FlowMeter 1	2014
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	MCMC-C3-1	MotorControlCenter1	2012
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	MOMC-C3-1	MOTOR 01	1999
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	PTMC-C3-1	PressureTransducer 1	2010
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	PUMC-C3-1	PUMP 1	1960
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	RTMC-C3-1	RemoteTelemetryUnit1	2015
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	SW-MC-C3	System Well 1	1960
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	VAMC-C3-1	Valving 1	1960
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	VAMC-C3-2	Valving 2	1960
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	VAMC-C3-3	Valving 3	1960
WEMC-C3	CAPEHART MC-C3	7832 AZTEC WAY	VAMC-C3-4	Valving 4	1960
WEN1	EVERGREEN	4343 DARTMOUTH DR	ARN1-1	Air Release Valve 1	2017
WEN1	EVERGREEN	4343 DARTMOUTH DR	CSN1-CL1	Chlorination Sys 1	2017
WEN1	EVERGREEN	4343 DARTMOUTH DR	CSN1-FE1	RFP Enclosure 1	2008
WEN1	EVERGREEN	4343 DARTMOUTH DR	CVN1-1	CheckValve 1	2017
WEN1	EVERGREEN	4343 DARTMOUTH DR	FMN1-1	FlowMeter 1	2016
WEN1	EVERGREEN	4343 DARTMOUTH DR	HVN1-1	HydraulicValve1	2007
WEN1	EVERGREEN	4343 DARTMOUTH DR	MCN1-1	MotorControlCenter1	2015
WEN1	EVERGREEN	4343 DARTMOUTH DR	MON1-1	MOTOR 01	2002
WEN1	EVERGREEN	4343 DARTMOUTH DR	PTN1-1	PressureTransducer 1	2017
WEN1	EVERGREEN	4343 DARTMOUTH DR	PUN1-1	PUMP 1	1957
WEN1	EVERGREEN	4343 DARTMOUTH DR	RTN1-1	RemoteTelemetryUnit1	2015
WEN1	EVERGREEN	4343 DARTMOUTH DR	SW-N01	System Well 1	1957
WEN1	EVERGREEN	4343 DARTMOUTH DR	VAN1-1	Valving 1	1957
WEN1	EVERGREEN	4343 DARTMOUTH DR	VAN1-2	Valving 2	1957
WEN1	EVERGREEN	4343 DARTMOUTH DR	VAN1-3	Valving 3	1957
WEN10	WALNUT	5331 WALNUT AVE	ARN10-1	Air Release Valve 1	1994
WEN10	WALNUT	5331 WALNUT AVE	CCN10-1	AC	2009
WEN10	WALNUT	5331 WALNUT AVE	CSN10-CL1	Chlorination Sys 1	2014
WEN10	WALNUT	5331 WALNUT AVE	CVN10-1	CheckValve 1	2004
WEN10	WALNUT	5331 WALNUT AVE	FMN10-1	FlowMeter 1	2014
WEN10	WALNUT	5331 WALNUT AVE	GEN10-1	Generator 1	1998
WEN10	WALNUT	5331 WALNUT AVE	HVN10-1	HydraulicValve1	2014
WEN10	WALNUT	5331 WALNUT AVE	LTN10-1	LevelTransducer 1	2013
WEN10	WALNUT	5331 WALNUT AVE	MCN10-1	MotorControlCenter1	1997
WEN10	WALNUT	5331 WALNUT AVE	MON10-1	MOTOR 01	2020
WEN10	WALNUT	5331 WALNUT AVE	PTN10-1	PressureTransducer 1	2014
WEN10	WALNUT	5331 WALNUT AVE	PUN10-1	PUMP 1	2020
WEN10	WALNUT	5331 WALNUT AVE	RTN10-1	RemoteTelemetryUnit1	1997
WEN10	WALNUT	5331 WALNUT AVE	SW-N10	System Well 1	1964

Well	Name	Address	Equipment ID	Label	Intallation Date
WEN10	WALNUT	5331 WALNUT AVE	VAN10-1	Valving 1	1964
WEN10	WALNUT	5331 WALNUT AVE	VAN10-2	Valving 2	1964
WEN10	WALNUT	5331 WALNUT AVE	VFN10	VARIABLE FREQUENCY DRIVE 1	2009
WEN12	ST JOHNS	5753 LOCUST AVE	ARN12-1	Air Release Valve 1	1996
WEN12	ST JOHNS	5753 LOCUST AVE	CSN12-CL1	Chlorination Sys 1	2016
WEN12	ST JOHNS	5753 LOCUST AVE	CSN12-FE1	RFP Enclosure 1	2008
WEN12	ST JOHNS	5753 LOCUST AVE	CVN12-1	CheckValve 1	2006
WEN12	ST JOHNS	5753 LOCUST AVE	FMN12-1	FlowMeter 1	2014
WEN12	ST JOHNS	5753 LOCUST AVE	HVN12-1	HydraulicValve1	2016
WEN12	ST JOHNS	5753 LOCUST AVE	MCN12-1	MotorControlCenter1	2004
WEN12	ST JOHNS	5753 LOCUST AVE	MON12-1	MOTOR 01	2011
WEN12	ST JOHNS	5753 LOCUST AVE	PTN12-1	PressureTransducer 1	2016
WEN12	ST JOHNS	5753 LOCUST AVE	PUN12-1	PUMP 1	2003
WEN12	ST JOHNS	5753 LOCUST AVE	RTN12-1	RemoteTelemetryUnit1	2004
WEN12	ST JOHNS	5753 LOCUST AVE	SW-N12	System Well 1	1966
WEN12	ST JOHNS	5753 LOCUST AVE	VAN12-1	Valving 1	1966
WEN12	ST JOHNS	5753 LOCUST AVE	VAN12-2	Valving 2	1966
WEN12	ST JOHNS	5753 LOCUST AVE	VAN12-3	Valving 3	1966
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	ARN14-1	Air Release Valve 1	1998
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	CSN14-CL1	Chlorination Sys 1	2018
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	CSN14-FE1	RFP Enclosure 1	2008
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	CVN14-1	CheckValve 1	2008
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	FMN14-1	FlowMeter 1	2014
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	HVN14-1	HydraulicValve1	2018
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	MCN14-1	MotorControlCenter1	1968
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	MON14-1	MOTOR 01	2002
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	PTN14-1	PressureTransducer 1	2018
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	PUN14-1	PUMP 1	1968
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	RTN14-1	RemoteTelemetryUnit1	2014
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	SW-N14	System Well 1	1968
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	VAN14-1	Valving 1	1968
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	VAN14-2	Valving 2	1968
WEN14	ORANGE GROVE	2987 ORANGE GROVE AVE	VAN14-3	Valving 3	1968
WEN17	OAKDALE	3710 MYRTLE AVE	ARN17-1	Air Release Valve 1	2002
WEN17	OAKDALE	3710 MYRTLE AVE	CSN17-CL1	Chlorination Sys 1	2012
WEN17	OAKDALE	3710 MYRTLE AVE	CSN17-FE1	RFP Enclosure 1	1995
WEN17	OAKDALE	3710 MYRTLE AVE	CVN17-1	CheckValve 1	2012
WEN17	OAKDALE	3710 MYRTLE AVE	FMN17-1	FlowMeter 1	2016
WEN17	OAKDALE	3710 MYRTLE AVE	GEN17-1	Generator 1	2010
WEN17	OAKDALE	3710 MYRTLE AVE	MCN17-1	MotorControlCenter1	2009
WEN17	OAKDALE	3710 MYRTLE AVE	MON17-1	MOTOR 01	2017
WEN17	OAKDALE	3710 MYRTLE AVE	PTN17-1	PressureTransducer 1	2012
WEN17	OAKDALE	3710 MYRTLE AVE	PUN17-1	PUMP 1	2017
WEN17	OAKDALE	3710 MYRTLE AVE	RTN17-1	RemoteTelemetryUnit1	2009
WEN17	OAKDALE	3710 MYRTLE AVE	SW-N17	System Well 1	1972
WEN17	OAKDALE	3710 MYRTLE AVE	TAN17-1	Tank 1	2017
WEN17	OAKDALE	3710 MYRTLE AVE	VAN17-1	Valving 1	1972
WEN17	OAKDALE	3710 MYRTLE AVE	VAN17-2	Valving 2	1972
WEN20	CYPRESS	5210 CYPRESS AVE	ARN20-1	Air Release Valve 1	2003
WEN20	CYPRESS	5210 CYPRESS AVE	CSN20-CL1	Chlorination Sys 1	2013
WEN20	CYPRESS	5210 CYPRESS AVE	CVN20-1	CheckValve 1	2013
WEN20	CYPRESS	5210 CYPRESS AVE	FMN20-1	FlowMeter 1	2012
WEN20	CYPRESS	5210 CYPRESS AVE	HVN20-1	HydraulicValve1	1998
WEN20	CYPRESS	5210 CYPRESS AVE	MCN20-1	MotorControlCenter1	1973
WEN20	CYPRESS	5210 CYPRESS AVE	MON20-1	MOTOR 01	2020
WEN20	CYPRESS	5210 CYPRESS AVE	PTN20-1	PressureTransducer 1	2013
WEN20	CYPRESS	5210 CYPRESS AVE	PUN20-1	PUMP 1	2020
WEN20	CYPRESS	5210 CYPRESS AVE	SW-N20	System Well 1	1973
WEN20	CYPRESS	5210 CYPRESS AVE	VAN20-1	Valving 1	1973
WEN20	CYPRESS	5210 CYPRESS AVE	VAN20-2	Valving 2	1973
WEN20	CYPRESS	5210 CYPRESS AVE	VAN20-3	Valving 3	1973
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	ARN22-1	Air Release Valve 1	2005
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	ARN22-2	Air Release Valve 2	2005
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	CSN22-CL1	Chlorination Sys 1	2015
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	CSN22-FE1	RFP Enclosure 1	1995
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	CVN22-1	CheckValve 1	2015
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	FMN22-1	FlowMeter 1	2015
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	MCN22-1	MotorControlCenter1	2005
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	MON22-1	MOTOR 01	2002
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	PTN22-1	PressureTransducer 1	2015
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	PUN22-1	PUMP 1	1975
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	RTN22-1	RemoteTelemetryUnit1	2005

Well	Name	Address	Equipment ID	Label	Intallation Date
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	SW-N22	System Well 1	1975
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	TAN22-1	Tank 1	1975
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	VAN22-1	Valving 1	1975
WEN22	RIVER COLLEGE	4735 RIVER COLLEGE DR	VAN22-2	Valving 2	1975
WEN23A	FREEWAY	4517 FREEWAY CIR	ARN23A-1	Air Release Valve 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	CSN23A-CL1	Chlorination Sys 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	CSN23A-FE1	RFP Enclosure 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	CVN23A-1	CheckValve 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	FMN23A-1	FlowMeter 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	GEN23A-1	Generator 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	HVN23A-1	HydraulicValve1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	LTN23A-1	LevelTransducer 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	MCN23A-1	MotorControlCenter1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	MON23A-1	MOTOR 01	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	PTN23A-1	PressureTransducer 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	PUN23A-1	PUMP 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	RTN23A-1	RemoteTelemetryUnit1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	SW-N23A	System Well 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	VAN23A-1	Valving 1	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	VAN23A-2	Valving 2	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	VAN23A-3	Valving 3	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	VAN23A-4	Valving 4	2011
WEN23A	FREEWAY	4517 FREEWAY CIR	VAN23A-5	Valving 5	2011
WEN24	DON JULIO	4317 DON JULIO BL	ARN24-1	Air Release Valve 1	2006
WEN24	DON JULIO	4317 DON JULIO BL	ARN24-2	Air Release Valve 2	2006
WEN24	DON JULIO	4317 DON JULIO BL	CSN24-CL1	Chlorination Sys 1	2016
WEN24	DON JULIO	4317 DON JULIO BL	CSN24-FE1	RFP Enclosure 1	1995
WEN24	DON JULIO	4317 DON JULIO BL	CVN24-1	CheckValve 1	2016
WEN24	DON JULIO	4317 DON JULIO BL	FMN24-1	FlowMeter 1	2014
WEN24	DON JULIO	4317 DON JULIO BL	MCN24-1	MotorControlCenter1	1976
WEN24	DON JULIO	4317 DON JULIO BL	MON24-1	MOTOR 01	2011
WEN24	DON JULIO	4317 DON JULIO BL	PTN24-1	PressureTransducer 1	2016
WEN24	DON JULIO	4317 DON JULIO BL	PUN24-1	PUMP 1	1976
WEN24	DON JULIO	4317 DON JULIO BL	RTN24-1	RemoteTelemetryUnit1	2009
WEN24	DON JULIO	4317 DON JULIO BL	SW-N24	System Well 1	1976
WEN24	DON JULIO	4317 DON JULIO BL	TAN24-1	Tank 1	1976
WEN24	DON JULIO	4317 DON JULIO BL	VAN24-1	Valving 1	1976
WEN24	DON JULIO	4317 DON JULIO BL	VAN24-2	Valving 2	1976
WEN25	SUTTER	4324 ELKHORN BLVD	ARN25-1	Air Release Valve 1	2006
WEN25	SUTTER	4324 ELKHORN BLVD	BFN25-1	Backflow 1	2016
WEN25	SUTTER	4324 ELKHORN BLVD	CSN25-CL1	Chlorination Sys 1	2016
WEN25	SUTTER	4324 ELKHORN BLVD	CSN25-FE1	RFP Enclosure 1	1995
WEN25	SUTTER	4324 ELKHORN BLVD	CVN25-1	CheckValve 1	2016
WEN25	SUTTER	4324 ELKHORN BLVD	FMN25-1	FlowMeter 1	2014
WEN25	SUTTER	4324 ELKHORN BLVD	HVN25-1	HydraulicValve1	2001
WEN25	SUTTER	4324 ELKHORN BLVD	MCN25-1	MotorControlCenter1	2014
WEN25	SUTTER	4324 ELKHORN BLVD	MON25-1	MOTOR 01	2002
WEN25	SUTTER	4324 ELKHORN BLVD	PTN25-1	PressureTransducer 1	2016
WEN25	SUTTER	4324 ELKHORN BLVD	PUN25-1	PUMP 1	1976
WEN25	SUTTER	4324 ELKHORN BLVD	RTN25-1	RemoteTelemetryUnit1	2014
WEN25	SUTTER	4324 ELKHORN BLVD	SW-N25	System Well 1	1976
WEN25	SUTTER	4324 ELKHORN BLVD	VAN25-1	Valving 1	1976
WEN25	SUTTER	4324 ELKHORN BLVD	VAN25-2	Valving 2	1976
WEN25	SUTTER	4324 ELKHORN BLVD	VAN25-3	Valving 3	1976
WEN25	SUTTER	4324 ELKHORN BLVD	VFN25	VARIABLE FREQUENCY DRIVE 1	2006
WEN26	MONUMENT	7338 MONOGRAM DR	ARN26-1	Air Release Valve 1	2014
WEN26	MONUMENT	7338 MONOGRAM DR	CSN26-CL1	Chlorination Sys 1	2014
WEN26	MONUMENT	7338 MONOGRAM DR	CVN26-1	CheckValve 1	2004
WEN26	MONUMENT	7338 MONOGRAM DR	FMN26-1	FlowMeter 1	2014
WEN26	MONUMENT	7338 MONOGRAM DR	HVN26-1	HydraulicValve1	2009
WEN26	MONUMENT	7338 MONOGRAM DR	MCN26-1	MotorControlCenter1	1984
WEN26	MONUMENT	7338 MONOGRAM DR	MON26-1	MOTOR 01	2014
WEN26	MONUMENT	7338 MONOGRAM DR	PTN26-1	PressureTransducer 1	2014
WEN26	MONUMENT	7338 MONOGRAM DR	PUN26-1	PUMP 1	2014
WEN26	MONUMENT	7338 MONOGRAM DR	RTN26-1	RemoteTelemetryUnit1	2012
WEN26	MONUMENT	7338 MONOGRAM DR	SW-N26	System Well 1	1984
WEN26	MONUMENT	7338 MONOGRAM DR	VAN26-1	Valving 1	1984
WEN26	MONUMENT	7338 MONOGRAM DR	VAN26-2	Valving 2	1984
WEN26	MONUMENT	7338 MONOGRAM DR	VAN26-3	Valving 3	1984
WEN29	MERRIHILL	5932 ELLERSLEE DR	ARN29-1	Air Release Valve 1	2017
WEN29	MERRIHILL	5932 ELLERSLEE DR	CSN29-CL1	Chlorination Sys 1	2017
WEN29	MERRIHILL	5932 ELLERSLEE DR	CSN29-FE1	RFP Enclosure 1	1995

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WEN29	MERRIHILL	5932 ELLERSLEE DR	CVN29-1	CheckValve 1	2017
WEN29	MERRIHILL	5932 ELLERSLEE DR	FMN29-1	FlowMeter 1	2016
WEN29	MERRIHILL	5932 ELLERSLEE DR	GEN29-1	Generator 1	2010
WEN29	MERRIHILL	5932 ELLERSLEE DR	HVN29-1	HydraulicValve1	2007
WEN29	MERRIHILL	5932 ELLERSLEE DR	MCN29-1	MotorControlCenter1	2009
WEN29	MERRIHILL	5932 ELLERSLEE DR	MON29-1	MOTOR 01	2008
WEN29	MERRIHILL	5932 ELLERSLEE DR	PTN29-1	PressureTransducer 1	2017
WEN29	MERRIHILL	5932 ELLERSLEE DR	PUN29-1	PUMP 1	2008
WEN29	MERRIHILL	5932 ELLERSLEE DR	RTN29-1	RemoteTelemetryUnit1	2004
WEN29	MERRIHILL	5932 ELLERSLEE DR	SW-N29	System Well 1	1957
WEN29	MERRIHILL	5932 ELLERSLEE DR	VAN29-1	Valving 1	1957
WEN29	MERRIHILL	5932 ELLERSLEE DR	VAN29-2	Valving 2	1957
WEN29	MERRIHILL	5932 ELLERSLEE DR	VAN29-3	Valving 3	1957
WEN3	ENGLE	4802 ENGLE RD	ARN3-1	Air Release Valve 1	2002
WEN3	ENGLE	4802 ENGLE RD	ARN3-2	Air Release Valve 2	2002
WEN3	ENGLE	4802 ENGLE RD	CSN3-CL1	Chlorination Sys 1	2012
WEN3	ENGLE	4802 ENGLE RD	CSN3-FE1	RFP Enclosure 1	1995
WEN3	ENGLE	4802 ENGLE RD	CVN3-1	CheckValve 1	2002
WEN3	ENGLE	4802 ENGLE RD	FMN3-1	FlowMeter 1	2016
WEN3	ENGLE	4802 ENGLE RD	MCN3-1	MotorControlCenter1	2005
WEN3	ENGLE	4802 ENGLE RD	MON3-1	MOTOR 01	2012
WEN3	ENGLE	4802 ENGLE RD	PTN3-1	PressureTransducer 1	2012
WEN3	ENGLE	4802 ENGLE RD	PUN3-1	PUMP 1	2002
WEN3	ENGLE	4802 ENGLE RD	RTN3-1	RemoteTelemetryUnit1	2005
WEN3	ENGLE	4802 ENGLE RD	SW-N03	System Well 1	1942
WEN3	ENGLE	4802 ENGLE RD	TAN3-1	Tank 1	1942
WEN3	ENGLE	4802 ENGLE RD	VAN3-1	Valving 1	1942
WEN3	ENGLE	4802 ENGLE RD	VAN3-2	Valving 2	1942
WEN30	PARK OAKS	6016 PARK OAKS DR	ARN30-1	Air Release Valve 1	2018
WEN30	PARK OAKS	6016 PARK OAKS DR	CSN30-CL1	Chlorination Sys 1	2018
WEN30	PARK OAKS	6016 PARK OAKS DR	CSN30-FE1	RFP Enclosure 1	1995
WEN30	PARK OAKS	6016 PARK OAKS DR	CVN30-1	CheckValve 1	2018
WEN30	PARK OAKS	6016 PARK OAKS DR	FMN30-1	FlowMeter 1	2016
WEN30	PARK OAKS	6016 PARK OAKS DR	HVN30-1	HydraulicValve1	2008
WEN30	PARK OAKS	6016 PARK OAKS DR	MCN30-1	MotorControlCenter1	2004
WEN30	PARK OAKS	6016 PARK OAKS DR	MON30-1	MOTOR 01	2009
WEN30	PARK OAKS	6016 PARK OAKS DR	PTN30-1	PressureTransducer 1	2018
WEN30	PARK OAKS	6016 PARK OAKS DR	PUN30-1	PUMP 1	2009
WEN30	PARK OAKS	6016 PARK OAKS DR	RTN30-1	RemoteTelemetryUnit1	2004
WEN30	PARK OAKS	6016 PARK OAKS DR	SW-N30	System Well 1	1958
WEN30	PARK OAKS	6016 PARK OAKS DR	VAN30-1	Valving 1	1958
WEN30	PARK OAKS	6016 PARK OAKS DR	VAN30-2	Valving 2	1958
WEN30	PARK OAKS	6016 PARK OAKS DR	VAN30-3	Valving 3	1958
WEN32A	POKER A	5771 POKER LN	ARN32A-1	Air Release Valve 1	2019
WEN32A	POKER A	5771 POKER LN	ASN32A	Alarm System 1	2019
WEN32A	POKER A	5771 POKER LN	BFN32A-1	Backflow 1	2010
WEN32A	POKER A	5771 POKER LN	CCN32A-1	AC	2019
WEN32A	POKER A	5771 POKER LN	CSN32A-CL1	Chlorination Sys 1	2019
WEN32A	POKER A	5771 POKER LN	CVN32A-1	CheckValve 1	2009
WEN32A	POKER A	5771 POKER LN	FMN32A-1	FlowMeter 1	2016
WEN32A	POKER A	5771 POKER LN	GEN32A-1	Generator 1	1998
WEN32A	POKER A	5771 POKER LN	HVN32A-1	HydraulicValve1	2014
WEN32A	POKER A	5771 POKER LN	MCN32A-1	MotorControlCenter1	1989
WEN32A	POKER A	5771 POKER LN	MON32A-1	MOTOR 01	2009
WEN32A	POKER A	5771 POKER LN	PTN32A-1	PressureTransducer 1	2019
WEN32A	POKER A	5771 POKER LN	PUN32A-1	PUMP 1	2009
WEN32A	POKER A	5771 POKER LN	RTN32A-1	RemoteTelemetryUnit1	1997
WEN32A	POKER A	5771 POKER LN	SW-N32A	System Well 1	1989
WEN32A	POKER A	5771 POKER LN	VAN32A-1	Valving 1	1989
WEN32A	POKER A	5771 POKER LN	VAN32A-2	Valving 2	1989
WEN32A	POKER A	5771 POKER LN	VFN32A	VARIABLE FREQUENCY DRIVE 1	2019
WEN32B	POKER B	5771 POKER LN	ARN32B-1	Air Release Valve 1	2019
WEN32B	POKER B	5771 POKER LN	CSN32B-CL1	Chlorination Sys 1	2019
WEN32B	POKER B	5771 POKER LN	CVN32B-1	CheckValve 1	2009
WEN32B	POKER B	5771 POKER LN	FMN32B-1	FlowMeter 1	2016
WEN32B	POKER B	5771 POKER LN	HVN32B-1	HydraulicValve1	2014
WEN32B	POKER B	5771 POKER LN	MCN32B-1	MotorControlCenter1	1989
WEN32B	POKER B	5771 POKER LN	MON32B-1	MOTOR 01	2020
WEN32B	POKER B	5771 POKER LN	PTN32B-1	PressureTransducer 1	2019
WEN32B	POKER B	5772 POKER LN	PUN32B-1	PUMP 1	2012
WEN32B	POKER B	5771 POKER LN	SW-N32B	System Well 1	1989
WEN32B	POKER B	5771 POKER LN	VAN32B-1	Valving 1	1989

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WEN32B	POKER B	5771 POKER LN	VAN32B-2	Valving 2	1989
WEN32B	POKER B	5771 POKER LN	VFN32B	VARIABLE FREQUENCY DRIVE 1	2019
WEN32C	POKER C	5771 POKER LN	ARN32C-1	Air Release Valve 1	2019
WEN32C	POKER C	5771 POKER LN	CSN32C-CL1	Chlorination Sys 1	2019
WEN32C	POKER C	5771 POKER LN	CVN32C-1	CheckValve 1	2009
WEN32C	POKER C	5771 POKER LN	FMN32C-1	FlowMeter 1	2016
WEN32C	POKER C	5771 POKER LN	HVN32C-1	HydraulicValve1	2014
WEN32C	POKER C	5771 POKER LN	LTN32C-1	LevelTransducer 1	2017
WEN32C	POKER C	5771 POKER LN	MCN32C-1	MotorControlCenter1	1989
WEN32C	POKER C	5771 POKER LN	MON32C-1	MOTOR 01	2012
WEN32C	POKER C	5771 POKER LN	PTN32C-1	PressureTransducer 1	2019
WEN32C	POKER C	5773 POKER LN	PUN32C-1	PUMP 1	2012
WEN32C	POKER C	5771 POKER LN	SW-N32C	System Well 1	1989
WEN32C	POKER C	5771 POKER LN	VAN32C-1	Valving 1	1989
WEN32C	POKER C	5771 POKER LN	VAN32C-2	Valving 2	1989
WEN32C	POKER C	5771 POKER LN	VAN32C-3	Valving 3	1989
WEN33	WALERGA	WALERGA RD	ARN33-1	Air Release Valve 1	2019
WEN33	WALERGA	WALERGA RD	CSN33-CL1	Chlorination Sys 1	2010
WEN33	WALERGA	WALERGA RD	CSN33-FE1	RFP Enclosure 1	1995
WEN33	WALERGA	WALERGA RD	CVN33-1	CheckValve 1	2009
WEN33	WALERGA	WALERGA RD	FMN33-1	FlowMeter 1	2015
WEN33	WALERGA	WALERGA RD	HVN33-1	HydraulicValve1	2014
WEN33	WALERGA	WALERGA RD	LTN33-1	LevelTransducer 1	2017
WEN33	WALERGA	WALERGA RD	MCN33-1	MotorControlCenter1	2003
WEN33	WALERGA	WALERGA RD	MON33-1	MOTOR 01	2020
WEN33	WALERGA	WALERGA RD	PTN33-1	PressureTransducer 1	2019
WEN33	WALERGA	WALERGA RD	PUN33-1	PUMP 1	2004
WEN33	WALERGA	WALERGA RD	RTN33-1	RemoteTelemetryUnit1	2003
WEN33	WALERGA	WALERGA RD	SW-N33	System Well 1	1989
WEN33	WALERGA	WALERGA RD	VAN33-1	Valving 1	1989
WEN33	WALERGA	WALERGA RD	VAN33-2	Valving 2	1989
WEN33	WALERGA	WALERGA RD	VAN33-3	Valving 3	1989
WEN34	COTTAGE	4000 ELVERTA RD	ARN34-1	Air Release Valve 1	1992
WEN34	COTTAGE	4000 ELVERTA RD	CSN34-CL1	Chlorination Sys 1	2012
WEN34	COTTAGE	4000 ELVERTA RD	CSN34-FE1	RFP Enclosure 1	2000
WEN34	COTTAGE	4000 ELVERTA RD	CVN34-1	CheckValve 1	2012
WEN34	COTTAGE	4000 ELVERTA RD	FMN34-1	FlowMeter 1	2013
WEN34	COTTAGE	4000 ELVERTA RD	HVN34-1	HydraulicValve1	2017
WEN34	COTTAGE	4000 ELVERTA RD	MCN34-1	MotorControlCenter1	1997
WEN34	COTTAGE	4000 ELVERTA RD	MON34-1	MOTOR 01	2020
WEN34	COTTAGE	4000 ELVERTA RD	PTN34-1	PressureTransducer 1	2012
WEN34	COTTAGE	4000 ELVERTA RD	PUN34-1	PUMP 1	2020
WEN34	COTTAGE	4000 ELVERTA RD	RTN34-1	RemoteTelemetryUnit1	1997
WEN34	COTTAGE	4000 ELVERTA RD	SW-N34	System Well 1	1992
WEN34	COTTAGE	4000 ELVERTA RD	VAN34-1	Valving 1	1992
WEN34	COTTAGE	4000 ELVERTA RD	VAN34-2	Valving 2	1992
WEN34	COTTAGE	4000 ELVERTA RD	VAN34-3	Valving 3	1992
WEN34	COTTAGE	4000 ELVERTA RD	VFN34	VARIABLE FREQUENCY DRIVE 1	2007
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	ARN35-1	Air Release Valve 1	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	ASN35	Alarm System 1	2016
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	CCN35-1	AC	2016
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	CSN35-CL1	Chlorination Sys 1	2011
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	CVN35-1	CheckValve 1	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	CVN35-2	CheckValve 2	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	FMN35-1	FlowMeter 1	2014
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	GEN35-1	Generator 1	2010
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	HVN35-1	HydraulicValve1	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	LTN35-1	LevelTransducer 1	2015
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	MCN35-1	MotorControlCenter1	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	PTN35-1	PressureTransducer 1	2011
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	PUN35-1	PUMP 1	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	RTN35-1	RemoteTelemetryUnit1	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	SW-N35	System Well 1	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	VAN35-1	Valving 1	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	VAN35-2	Valving 2	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	VAN35-3	Valving 3	2001
WEN35	ANTELOPE NORTH	5760 GREAT VALLEY RD	VFN35	VARIABLE FREQUENCY DRIVE 1	2016
WEN36	VERNER	6901 PANORAMA DR	ARN36-1	Air Release Valve 1	2007
WEN36	VERNER	6901 PANORAMA DR	ASN36	Alarm System 1	2007
WEN36	VERNER	6901 PANORAMA DR	BFN36-1	Backflow 1	2007
WEN36	VERNER	6901 PANORAMA DR	CAN36-1	ChemicalAnalyzer 1	2007
WEN36	VERNER	6901 PANORAMA DR	CCN36-1	Climate Control 1	2007

Well	Name	Address	Equipment ID	Label	Intallation Date
WEN36	VERNER	6901 PANORAMA DR	CSN36-CL1	Chlorination Sys 1	2007
WEN36	VERNER	6901 PANORAMA DR	CVN36-1	CheckValve 1	2007
WEN36	VERNER	6901 PANORAMA DR	CVN36-2	CheckValve 2	2007
WEN36	VERNER	6901 PANORAMA DR	FMN36-1	FlowMeter 1	2007
WEN36	VERNER	6901 PANORAMA DR	HVN36-1	HydraulicValve1	2007
WEN36	VERNER	6901 PANORAMA DR	LTN36-1	LevelTransducer 1	2007
WEN36	VERNER	6901 PANORAMA DR	MCN36-1	MotorControlCenter1	2007
WEN36	VERNER	6901 PANORAMA DR	MON36-1	MOTOR 01	2007
WEN36	VERNER	6901 PANORAMA DR	PTN36-1	PressureTransducer 1	2007
WEN36	VERNER	6901 PANORAMA DR	PUN36-1	PUMP 1	2007
WEN36	VERNER	6901 PANORAMA DR	RTN36-1	RemoteTelemetryUnit1	2007
WEN36	VERNER	6901 PANORAMA DR	SUN36-1	Sump 1	2007
WEN36	VERNER	6901 PANORAMA DR	SW-N36	System Well 1	2007
WEN36	VERNER	6901 PANORAMA DR	VAN36-1	Valving 1	2007
WEN36	VERNER	6901 PANORAMA DR	VAN36-2	Valving 2	2007
WEN36	VERNER	6901 PANORAMA DR	VAN36-3	Valving 3	2007
WEN36	VERNER	6901 PANORAMA DR	VFN36	VARIABLE FREQUENCY DRIVE 1	2007
WEN38	COYLE	6330 COYLE AVE	ARN38-1	Air Release Valve 1	2013
WEN38	COYLE	6330 COYLE AVE	ASN38	Alarm System 1	2013
WEN38	COYLE	6330 COYLE AVE	BFN38-1	Backflow 1	2013
WEN38	COYLE	6330 COYLE AVE	CCN38-1	Climate Control 1	2013
WEN38	COYLE	6330 COYLE AVE	CSN38-CL1	Chlorination Sys 1	2013
WEN38	COYLE	6330 COYLE AVE	CVN38-1	CheckValve 1	2013
WEN38	COYLE	6330 COYLE AVE	CVN38-2	CheckValve 2	2013
WEN38	COYLE	6330 COYLE AVE	FMN38-1	FlowMeter 1	2012
WEN38	COYLE	6330 COYLE AVE	GEN38-1	Generator 1	2012
WEN38	COYLE	6330 COYLE AVE	HVN38-1	HydraulicValve1	2013
WEN38	COYLE	6330 COYLE AVE	HVN38-2	HydraulicValve2	2013
WEN38	COYLE	6330 COYLE AVE	LTN38-1	LevelTransducer 1	2013
WEN38	COYLE	6330 COYLE AVE	MCN38-1	MotorControlCenter1	2012
WEN38	COYLE	6330 COYLE AVE	MON38-1	MOTOR 01	2012
WEN38	COYLE	6330 COYLE AVE	PTN38-1	PressureTransducer 1	2013
WEN38	COYLE	6330 COYLE AVE	PUN38-1	PUMP 1	2012
WEN38	COYLE	6330 COYLE AVE	RTN38-1	RemoteTelemetryUnit1	2012
WEN38	COYLE	6330 COYLE AVE	SW-N38	System Well 1	2013
WEN38	COYLE	6330 COYLE AVE	VAN38-1	Valving 1	2013
WEN38	COYLE	6330 COYLE AVE	VAN38-2	Valving 2	2013
WEN38	COYLE	6330 COYLE AVE	VAN38-3	Valving 3	2013
WEN38	COYLE	6330 COYLE AVE	VAN38-4	Valving 4	2013
WEN38	COYLE	6330 COYLE AVE	VFN38	VARIABLE FREQUENCY DRIVE 1	2013
WEN39	RUTLAND	6208 RUTLAND DR	ARN39-1	Air Release Valve 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	ARN39-2	Air Release Valve 2	2016
WEN39	RUTLAND	6208 RUTLAND DR	ARN39-3	Air Release Valve 3	2016
WEN39	RUTLAND	6208 RUTLAND DR	ASN39	Alarm System 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	BFN39-1	Backflow 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	CAN39-1	ChemicalAnalyzer 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	CCN39-1	Climate Control 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	CSN39-CL1	Cholrination Sys 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	CSN39-DC1	Dechlorination Sys 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	CVN39-1	CheckValve 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	FMN39-1	FlowMeter 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	GEN39-1	Generator 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	LTN39-1	LevelTransducer 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	MCN39-1	MotorControlCenter1	2016
WEN39	RUTLAND	6208 RUTLAND DR	MON39-1	MOTOR 01	2016
WEN39	RUTLAND	6208 RUTLAND DR	MVN39-1	MotorOperatedValve 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	PTN39-1	PressureTransducer 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	PUN39-1	PUMP 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	RTN39-1	RemoteTelemetryUnit1	2016
WEN39	RUTLAND	6208 RUTLAND DR	SW-N39	System Well 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	VAN39-1	Valving 1	2016
WEN39	RUTLAND	6208 RUTLAND DR	VFN39	VARIABLE FREQUENCY DRIVE 1	2016
WEN5	HILLSDALE	4620 KEEMA AVE	ARN5-1	Air Release Valve 1	2019
WEN5	HILLSDALE	4620 KEEMA AVE	CSN5-CL1	Chlorination Sys 1	2019
WEN5	HILLSDALE	4620 KEEMA AVE	CSN5-FE1	RFP Enclosure 1	2005
WEN5	HILLSDALE	4620 KEEMA AVE	CVN5-1	CheckValve 1	2019
WEN5	HILLSDALE	4620 KEEMA AVE	FMN5-1	FlowMeter 1	2015
WEN5	HILLSDALE	4620 KEEMA AVE	GEN5-1	Generator 1	2010
WEN5	HILLSDALE	4620 KEEMA AVE	HVN5-1	HydraulicValve1	2009
WEN5	HILLSDALE	4620 KEEMA AVE	MCN5-1	MotorControlCenter1	1997
WEN5	HILLSDALE	4620 KEEMA AVE	MON5-1	MOTOR 01	2005
WEN5	HILLSDALE	4620 KEEMA AVE	PTN5-1	PressureTransducer 1	2019

Well	Name	Address	Equipment ID	Label	Intallation Date
WEN5	HILLSDALE	4620 KEEMA AVE	PUN5-1	PUMP 1	2005
WEN5	HILLSDALE	4620 KEEMA AVE	RTN5-1	RemoteTelemetryUnit1	1997
WEN5	HILLSDALE	4620 KEEMA AVE	SW-N05	System Well 1	1959
WEN5	HILLSDALE	4620 KEEMA AVE	VAN5-1	Valving 1	1959
WEN5	HILLSDALE	4620 KEEMA AVE	VAN5-2	Valving 2	1959
WEN5	HILLSDALE	4620 KEEMA AVE	VAN5-3	Valving 3	1959
WEN5	HILLSDALE	4620 KEEMA AVE	VFN5	VARIABLE FREQUENCY DRIVE 1	2019
WEN6A	PALM	5600 PALM AVE	ARN6A-1	Air Release Valve 1	2016
WEN6A	PALM	5600 PALM AVE	BFN6A-1	Backflow 1	2016
WEN6A	PALM	5600 PALM AVE	CAN6A-1	ChemicalAnalyzer 1	2016
WEN6A	PALM	5600 PALM AVE	CSN6A-CL1	Chlorination Sys 1	2016
WEN6A	PALM	5600 PALM AVE	CSN6A-FE1	RFP Enclosure 1	2016
WEN6A	PALM	5600 PALM AVE	CVN6A-1	CheckValve 1	2016
WEN6A	PALM	5600 PALM AVE	CVN6A-2	CheckValve 2	2016
WEN6A	PALM	5600 PALM AVE	CVN6A-3	CheckValve 3	2016
WEN6A	PALM	5600 PALM AVE	CVN6A-4	CheckValve 4	2016
WEN6A	PALM	5600 PALM AVE	FIN6A-1	Filter 1	2016
WEN6A	PALM	5600 PALM AVE	FMN6A-1	FlowMeter 1	2016
WEN6A	PALM	5600 PALM AVE	FMN6A-2	FlowMeter 2	2016
WEN6A	PALM	5600 PALM AVE	FMN6A-3	FlowMeter 3	2016
WEN6A	PALM	5600 PALM AVE	FMN6A-4	FlowMeter 4	2016
WEN6A	PALM	5600 PALM AVE	FMN6A-5	FlowMeter 5	2016
WEN6A	PALM	5600 PALM AVE	LTN6A-1	LevelTransducer 1	2016
WEN6A	PALM	5600 PALM AVE	MCN6A-1	MotorControlCenter1	2016
WEN6A	PALM	5600 PALM AVE	MON6A-1	MOTOR 01	2016
WEN6A	PALM	5600 PALM AVE	MON6A-2	MOTOR 02	2016
WEN6A	PALM	5600 PALM AVE	MON6A-3	MOTOR 03	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-1	MotorOperatedValve 1	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-10	MotorOperatedValve10	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-11	MotorOperatedValve11	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-12	MotorOperatedValve12	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-2	MotorOperatedValve 2	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-3	MotorOperatedValve 3	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-4	MotorOperatedValve 4	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-5	MotorOperatedValve 5	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-6	MotorOperatedValve 6	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-7	MotorOperatedValve 7	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-8	MotorOperatedValve 8	2016
WEN6A	PALM	5600 PALM AVE	MVN6A-9	MotorOperatedValve 9	2016
WEN6A	PALM	5600 PALM AVE	PTN6A-1	PressureTransducer 1	2016
WEN6A	PALM	5600 PALM AVE	PUN6A-1	PUMP 1	2016
WEN6A	PALM	5600 PALM AVE	RTN6A-1	RemoteTelemetryUnit1	2016
WEN6A	PALM	5600 PALM AVE	SW-N06A	System Well 1	2016
WEN6A	PALM	5600 PALM AVE	TAN6A-1	Tank 1	2016
WEN6A	PALM	5600 PALM AVE	VAN6A-1	Valving 1	2016
WEN6A	PALM	5600 PALM AVE	VAN6A-2	Valving 2	2016
WEN6A	PALM	5600 PALM AVE	VAN6A-3	Valving 3	2016
WEN6A	PALM	5600 PALM AVE	VAN6A-4	Valving 4	2016
WEN6A	PALM	5600 PALM AVE	VAN6A-5	Valving 5	2016
WEN6A	PALM	5600 PALM AVE	VAN6A-6	Valving 6	2016
WEN6A	PALM	5600 PALM AVE	VAN6A-7	Valving 7	2016
WEN6A	PALM	5600 PALM AVE	VFN6A	VARIABLE FREQUENCY DRIVE 1	2016
WEN7	ROSEBUD	5831 ROSEBUD LN	ARN7-1	Air Release Valve 1	1991
WEN7	ROSEBUD	5831 ROSEBUD LN	CSN7-CL1	Chlorination Sys 1	2011
WEN7	ROSEBUD	5831 ROSEBUD LN	CSN7-FE1	RFP Enclosure 1	1995
WEN7	ROSEBUD	5831 ROSEBUD LN	CVN7-1	CheckValve 1	2001
WEN7	ROSEBUD	5831 ROSEBUD LN	FMN7-1	FlowMeter 1	2015
WEN7	ROSEBUD	5831 ROSEBUD LN	HVN7-1	HydraulicValve1	2011
WEN7	ROSEBUD	5831 ROSEBUD LN	MCN7-1	MotorControlCenter1	2005
WEN7	ROSEBUD	5831 ROSEBUD LN	MON7-1	MOTOR 01	2010
WEN7	ROSEBUD	5831 ROSEBUD LN	PTN7-1	PressureTransducer 1	2011
WEN7	ROSEBUD	5831 ROSEBUD LN	PUN7-1	PUMP 1	2010
WEN7	ROSEBUD	5831 ROSEBUD LN	RTN7-1	RemoteTelemetryUnit1	2005
WEN7	ROSEBUD	5831 ROSEBUD LN	SW-N07	System Well 1	1961
WEN7	ROSEBUD	5831 ROSEBUD LN	VAN7-1	Valving 1	1961
WEN7	ROSEBUD	5831 ROSEBUD LN	VAN7-2	Valving 2	1961
WEN7	ROSEBUD	5831 ROSEBUD LN	VAN7-3	Valving 3	1961
WEN8	FIELD	5998 GREENBACK LN	ARN8-1	Air Release Valve 1	1991
WEN8	FIELD	5998 GREENBACK LN	CSN8-CL1	Chlorination Sys 1	2011
WEN8	FIELD	5998 GREENBACK LN	CSN8-FE1	RFP Enclosure 1	1991
WEN8	FIELD	5998 GREENBACK LN	CVN8-1	CheckValve 1	2001
WEN8	FIELD	5998 GREENBACK LN	FMN8-1	FlowMeter 1	2014

Well	Name	Address	Equipment ID	Label	Intallation Date
WEN8	FIELD	5998 GREENBACK LN	HVN8-1	HydraulicValve1	2011
WEN8	FIELD	5998 GREENBACK LN	MCN8-1	MotorControlCenter1	2014
WEN8	FIELD	5998 GREENBACK LN	MON8-1	MOTOR 01	2002
WEN8	FIELD	5998 GREENBACK LN	PTN8-1	PressureTransducer 1	2011
WEN8	FIELD	5998 GREENBACK LN	PUN8-1	PUMP 1	2017
WEN8	FIELD	5998 GREENBACK LN	RTN8-1	RemoteTelemetryUnit1	2014
WEN8	FIELD	5998 GREENBACK LN	SW-N08	System Well 1	1961
WEN8	FIELD	5998 GREENBACK LN	VAN8-1	Valving 1	1961
WEN8	FIELD	5998 GREENBACK LN	VAN8-2	Valving 2	1961
WEN8	FIELD	5998 GREENBACK LN	VAN8-3	Valving 3	1961
WEN9	CAMERON	4630 CAMERON RANCH DR	ARN9-1	Air Release Valve 1	1994
WEN9	CAMERON	4630 CAMERON RANCH DR	ARN9-2	Air Release Valve 2	1994
WEN9	CAMERON	4630 CAMERON RANCH DR	ARN9-3	Air Release Valve 3	1994
WEN9	CAMERON	4630 CAMERON RANCH DR	ARN9-4	Air Release Valve 4	1994
WEN9	CAMERON	4630 CAMERON RANCH DR	CSN9-CL1	Chlorination Sys 1	2014
WEN9	CAMERON	4630 CAMERON RANCH DR	CSN9-FE1	RFP Enclosure 1	1994
WEN9	CAMERON	4630 CAMERON RANCH DR	CVN9-1	CheckValve 1	2004
WEN9	CAMERON	4630 CAMERON RANCH DR	FMN9-1	FlowMeter 1	2016
WEN9	CAMERON	4630 CAMERON RANCH DR	MCN9-1	MotorControlCenter1	2008
WEN9	CAMERON	4630 CAMERON RANCH DR	MON9-1	MOTOR 01	2003
WEN9	CAMERON	4630 CAMERON RANCH DR	PTN9-1	PressureTransducer 1	2014
WEN9	CAMERON	4630 CAMERON RANCH DR	PUN9-1	PUMP 1	2003
WEN9	CAMERON	4630 CAMERON RANCH DR	RTN9-1	RemoteTelemetryUnit1	2008
WEN9	CAMERON	4630 CAMERON RANCH DR	SW-N09	System Well 1	1964
WEN9	CAMERON	4630 CAMERON RANCH DR	TAN9-1	Tank 1	1964
WEN9	CAMERON	4630 CAMERON RANCH DR	VAN9-1	Valving 1	1964
WEN9	CAMERON	4630 CAMERON RANCH DR	VAN9-2	Valving 2	1964

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Appendix B: Detailed LoF and CoF Scores

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Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE13	CALDERWOOD / MARCONI	AR13-1	Air Release Valve 1	1.85	1.45
WE13	CALDERWOOD / MARCONI	CS13-CL1	Chlorination Sys 1	1.50	2.65
WE13	CALDERWOOD / MARCONI	CS13-FE1	RFP Enclosure 1	2.25	1.45
WE13	CALDERWOOD / MARCONI	CS13-FE2	RFP Enclosure 2	2.25	1.45
WE13	CALDERWOOD / MARCONI	CS13-FL1	Fluoride Sys 1	1.50	2.65
WE13	CALDERWOOD / MARCONI	CV13-1	CheckValve 1	1.75	2.25
WE13	CALDERWOOD / MARCONI	FM13-1	FlowMeter 1	1.75	2.50
WE13	CALDERWOOD / MARCONI	HV13-1	HydraulicValve1	2.70	2.45
WE13	CALDERWOOD / MARCONI	MC13-1	MotorControlCenter1	2.25	2.40
WE13	CALDERWOOD / MARCONI	MO13-1	MOTOR 01	1.80	2.50
WE13	CALDERWOOD / MARCONI	PT13-1	PressureTransducer 1	1.45	1.70
WE13	CALDERWOOD / MARCONI	PU13-1	PUMP 1	1.75	1.90
WE13	CALDERWOOD / MARCONI	RT13-1	RemoteTelemetryUnit1	1.50	1.80
WE13	CALDERWOOD / MARCONI	SE13	Sound Enclosure 1	1.25	1.80
WE13	CALDERWOOD / MARCONI	SW-13	System Well 1	2.90	2.40
WE13	CALDERWOOD / MARCONI	VA13-1	Valving 1	2.00	1.80
WE13	CALDERWOOD / MARCONI	VA13-2	Valving 2	2.00	1.80
WE18	RIDING CLUB / LADINO	AR18-1	Air Release Valve 1	2.45	1.45
WE18	RIDING CLUB / LADINO	CS18-CL1	Chlorination Sys 1	2.80	2.65
WE18	RIDING CLUB / LADINO	CS18-FE1	RFP Enclosure 1	2.80	1.45
WE18	RIDING CLUB / LADINO	CS18-FL1	Fluoride Sys	2.80	2.65
WE18	RIDING CLUB / LADINO	CV18-1	CheckValve 1	1.80	2.25
WE18	RIDING CLUB / LADINO	FM18-1	FlowMeter 1	1.80	2.50
WE18	RIDING CLUB / LADINO	MC18-1	MotorControlCenter1	2.80	2.40
WE18	RIDING CLUB / LADINO	MO18-1	MOTOR 01	3.40	2.50
WE18	RIDING CLUB / LADINO	PT18-1	PressureTransducer 1	2.55	1.70
WE18	RIDING CLUB / LADINO	PU18-1	PUMP 1	2.50	1.90
WE18	RIDING CLUB / LADINO	RT18-1	RemoteTelemetryUnit1	2.25	1.80
WE18	RIDING CLUB / LADINO	SS18-1	SandSeparator 1	2.05	3.10
WE18	RIDING CLUB / LADINO	SW-18	System Well 1	3.45	2.40
WE18	RIDING CLUB / LADINO	TA18-1	Tank 1	3.55	3.55
WE18	RIDING CLUB / LADINO	VA18-1	Valving 1	2.30	1.80
WE18	RIDING CLUB / LADINO	VA18-2	Valving 2	2.30	1.80
WE18	RIDING CLUB / LADINO	VA18-3	Valving 3	2.30	1.80
WE20A	WATT / ARDEN	AR20A-1	Air Release Valve 1	2.70	1.70
WE20A	WATT / ARDEN	CS20A-CL1	Chlorination Sys 1	1.80	2.90
WE20A	WATT / ARDEN	CS20A-FL1	Fluoride Sys 1	1.80	2.90
WE20A	WATT / ARDEN	CS20-FE1	RFP Enclosure 1	2.80	1.70
WE20A	WATT / ARDEN	CV20A-1	CheckValve 1	2.05	2.75
WE20A	WATT / ARDEN	FM20A-1	FlowMeter 1	1.80	2.75
WE20A	WATT / ARDEN	MC20A-1	MotorControlCenter1	2.55	2.65
WE20A	WATT / ARDEN	MO20A-1	MOTOR 01	2.60	2.75
WE20A	WATT / ARDEN	PT20A-1	PressureTransducer 1	1.55	1.95
WE20A	WATT / ARDEN	PU20A-1	PUMP 1	2.50	2.40
WE20A	WATT / ARDEN	RT20A-1	RemoteTelemetryUnit1	2.05	2.05
WE20A	WATT / ARDEN	SE20A	Sound Enclosure 1	1.80	2.05
WE20A	WATT / ARDEN	SW-20A	System Well 1	3.00	2.65
WE20A	WATT / ARDEN	TA20A-1	Tank 1	3.35	3.80
WE20A	WATT / ARDEN	VA20A-1	Valving 1	2.30	2.05
WE20A	WATT / ARDEN	VA20A-2	Valving 2	2.30	2.05
WE20A	WATT / ARDEN	VA20A-3	Valving 3	2.30	2.05
WE24	BECERRA / WOODCREST	AR24-1	Air Release Valve 1	1.85	1.45
WE24	BECERRA / WOODCREST	AR24-2	Air Release Valve 2	1.85	1.45
WE24	BECERRA / WOODCREST	CS24-CL1	Chlorination Sys 1	2.25	2.65
WE24	BECERRA / WOODCREST	CS24-FE1	RFP Enclosure 1	2.50	1.45
WE24	BECERRA / WOODCREST	CS24-FL1	Fluoride Sys 1	2.45	2.65
WE24	BECERRA / WOODCREST	CV24-1	CheckValve 1	1.70	2.25
WE24	BECERRA / WOODCREST	FM24-1	FlowMeter 1	1.50	2.50
WE24	BECERRA / WOODCREST	MC24-1	MotorControlCenter1	3.00	2.80
WE24	BECERRA / WOODCREST	MO24-1	MOTOR 01	2.05	2.50
WE24	BECERRA / WOODCREST	PT24-1	PressureTransducer 1	2.00	1.90
WE24	BECERRA / WOODCREST	PU24-1	PUMP 1	1.75	2.10
WE24	BECERRA / WOODCREST	RT24-1	RemoteTelemetryUnit1	1.75	2.00
WE24	BECERRA / WOODCREST	SS24-1	SandSeparator 1	2.50	3.10
WE24	BECERRA / WOODCREST	SW-24	System Well 1	3.55	2.80
WE24	BECERRA / WOODCREST	TA24-1	Tank 1	4.05	3.55

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE24	BECERRA / WOODCREST	TA24-2	Tank 2	3.85	3.55
WE24	BECERRA / WOODCREST	VA24-1	Valving 1	2.20	2.00
WE24	BECERRA / WOODCREST	VA24-2	Valving 2	2.20	2.00
WE24	BECERRA / WOODCREST	VA24-3	Valving 3	2.00	2.00
WE24	BECERRA / WOODCREST	VA24-4	Valving 4	2.00	1.80
WE25	THOR / MERCURY	AR25-1	Air Release Valve 1	2.45	1.45
WE25	THOR / MERCURY	AR25-2	Air Release Valve 2	2.45	1.45
WE25	THOR / MERCURY	CS25-CL1	Chlorination Sys 1	2.55	2.65
WE25	THOR / MERCURY	CS25-FE1	RFP Enclosure 1	2.80	1.45
WE25	THOR / MERCURY	CS25-FE2	RFP Enclosure 2	2.80	1.45
WE25	THOR / MERCURY	CS25-FL1	Fluoride Sys 1	2.55	2.65
WE25	THOR / MERCURY	CV25-1	CheckValve 1	1.80	2.25
WE25	THOR / MERCURY	FM25-1	FlowMeter 1	1.80	2.50
WE25	THOR / MERCURY	MC25-1	MotorControlCenter1	2.80	2.40
WE25	THOR / MERCURY	MO25-1	MOTOR 01	3.40	2.50
WE25	THOR / MERCURY	PT25-1	PressureTransducer 1	2.30	1.70
WE25	THOR / MERCURY	PU25-1	PUMP 1	2.50	1.90
WE25	THOR / MERCURY	RT25-1	RemoteTelemetryUnit1	2.05	1.80
WE25	THOR / MERCURY	SW-25	System Well 1	3.05	2.40
WE25	THOR / MERCURY	VA25-1	Valving 1	2.30	1.80
WE25	THOR / MERCURY	VA25-2	Valving 2	2.30	1.80
WE25	THOR / MERCURY	VA25-3	Valving 3	2.30	1.80
WE26	GREENWOOD / MARCONI	AR26-1	Air Release Valve 1	2.20	1.45
WE26	GREENWOOD / MARCONI	AR26-2	Air Release Valve 2	2.20	1.45
WE26	GREENWOOD / MARCONI	CS26-CL1	Chlorination Sys 1	2.30	2.65
WE26	GREENWOOD / MARCONI	CS26-FE1	RFP Enclosure 1	2.80	1.45
WE26	GREENWOOD / MARCONI	CS26-FL1	Fluoride Sys 1	2.30	2.65
WE26	GREENWOOD / MARCONI	CV26-1	CheckValve 1	1.80	2.25
WE26	GREENWOOD / MARCONI	FM26-1	FlowMeter 1	1.80	2.50
WE26	GREENWOOD / MARCONI	MC26-1	MotorControlCenter1	2.80	2.60
WE26	GREENWOOD / MARCONI	MO26-1	MOTOR 01	2.65	2.50
WE26	GREENWOOD / MARCONI	PT26-1	PressureTransducer 1	2.05	1.90
WE26	GREENWOOD / MARCONI	PU26-1	PUMP 1	1.75	2.10
WE26	GREENWOOD / MARCONI	RT26-1	RemoteTelemetryUnit1	2.05	2.00
WE26	GREENWOOD / MARCONI	SS26-1	SandSeparator 1	2.25	3.10
WE26	GREENWOOD / MARCONI	SW-26	System Well 1	3.65	2.80
WE26	GREENWOOD / MARCONI	TA26-1	Tank 1	3.55	3.55
WE26	GREENWOOD / MARCONI	TA26-2	Tank 2	3.55	3.55
WE26	GREENWOOD / MARCONI	VA26-1	Valving 1	2.30	2.00
WE26	GREENWOOD / MARCONI	VA26-2	Valving 2	2.30	2.00
WE26	GREENWOOD / MARCONI	VA26-3	Valving 3	2.30	2.00
WE26	GREENWOOD / MARCONI	VA26-4	Valving 4	2.30	2.00
WE26	GREENWOOD / MARCONI	VA26-5	Valving 5	2.30	2.00
WE26	GREENWOOD / MARCONI	VA26-6	Valving 6	2.30	2.00
WE27	MELROSE / CHANNING	AR27-1	Air Release Valve 1	2.20	1.45
WE27	MELROSE / CHANNING	CS27-CL1	Chlorination Sys 1	2.00	2.65
WE27	MELROSE / CHANNING	CS27-FE1	RFP Enclosure 1	2.30	1.45
WE27	MELROSE / CHANNING	CV27-1	CheckValve 1	1.80	2.25
WE27	MELROSE / CHANNING	FM27-1	FlowMeter 1	2.05	2.50
WE27	MELROSE / CHANNING	HV27-1	HydraulicValve1	2.85	2.45
WE27	MELROSE / CHANNING	LT27-1	LevelTransducer 1	2.30	1.35
WE27	MELROSE / CHANNING	MC27-1	MotorControlCenter1	2.75	2.40
WE27	MELROSE / CHANNING	MO27-1	MOTOR 01	2.35	2.50
WE27	MELROSE / CHANNING	PT27-1	PressureTransducer 1	2.05	1.70
WE27	MELROSE / CHANNING	PU27-1	PUMP 1	1.75	1.90
WE27	MELROSE / CHANNING	RT27-1	RemoteTelemetryUnit1	1.80	1.80
WE27	MELROSE / CHANNING	SW-27	System Well 1	3.00	2.40
WE27	MELROSE / CHANNING	VA27-1	Valving 1	2.30	1.80
WE27	MELROSE / CHANNING	VA27-2	Valving 2	2.30	1.80
WE27	MELROSE / CHANNING	VA27-3	Valving 3	2.30	1.80
WE28	RED ROBIN / DARWIN	AR28-1	Air Release Valve 1	1.60	1.45
WE28	RED ROBIN / DARWIN	AR28-2	Air Release Valve 2	1.60	1.45
WE28	RED ROBIN / DARWIN	CS28-CL1	Chlorination Sys 1	2.00	2.65
WE28	RED ROBIN / DARWIN	CS28-FE1	RFP Enclosure 1	2.50	1.45
WE28	RED ROBIN / DARWIN	CS28-FL1	Fluoride Sys 1	2.00	2.65
WE28	RED ROBIN / DARWIN	CV28-1	CheckValve 1	1.50	2.25

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE28	RED ROBIN / DARWIN	FM28-1	FlowMeter 1	1.50	2.50
WE28	RED ROBIN / DARWIN	MC28-1	MotorControlCenter1	2.50	2.40
WE28	RED ROBIN / DARWIN	MO28-1	MOTOR 01	2.55	2.50
WE28	RED ROBIN / DARWIN	PT28-1	PressureTransducer 1	1.75	1.70
WE28	RED ROBIN / DARWIN	PU28-1	PUMP 1	2.50	1.90
WE28	RED ROBIN / DARWIN	RT28-1	RemoteTelemetryUnit1	1.75	1.80
WE28	RED ROBIN / DARWIN	SE28	Sound Enclosure 1	1.00	1.80
WE28	RED ROBIN / DARWIN	SS28-1	SandSeparator 1	2.50	3.10
WE28	RED ROBIN / DARWIN	SW-28	System Well 1	2.75	2.40
WE28	RED ROBIN / DARWIN	VA28-1	Valving 1	2.00	1.80
WE28	RED ROBIN / DARWIN	VA28-2	Valving 2	2.00	1.80
WE28	RED ROBIN / DARWIN	VF28	VARIABLE FREQUENCY DRIVE 1	2.00	1.70
WE2A	EL PRADO / PARK ESTATES	AR2A-1	Air Release Valve 1	2.65	1.45
WE2A	EL PRADO / PARK ESTATES	CS2A-CL1	Chlorination Sys 1	2.35	2.65
WE2A	EL PRADO / PARK ESTATES	CS2A-FE1	RFP Enclosure 1	2.80	1.45
WE2A	EL PRADO / PARK ESTATES	CS2A-FL1	Fluoride Sys 1	2.60	2.65
WE2A	EL PRADO / PARK ESTATES	CV2A-1	CheckValve 1	2.30	2.25
WE2A	EL PRADO / PARK ESTATES	FM2A-1	FlowMeter 1	2.05	2.50
WE2A	EL PRADO / PARK ESTATES	HV2A-1	HydraulicValve1	2.05	2.45
WE2A	EL PRADO / PARK ESTATES	HV2A-2	HydraulicValve2	2.05	2.45
WE2A	EL PRADO / PARK ESTATES	LT2A-1	LevelTransducer 1	2.80	1.35
WE2A	EL PRADO / PARK ESTATES	LT2A-2	LevelTransducer 2	2.80	1.35
WE2A	EL PRADO / PARK ESTATES	MC2A-1	MotorControlCenter1	2.30	2.40
WE2A	EL PRADO / PARK ESTATES	MO2A-1	MOTOR 01	2.10	1.80
WE2A	EL PRADO / PARK ESTATES	PT2A-1	PressureTransducer 1	2.05	1.70
WE2A	EL PRADO / PARK ESTATES	PU2A-1	PUMP 1	1.50	1.90
WE2A	EL PRADO / PARK ESTATES	RT2A-1	RemoteTelemetryUnit1	1.75	1.80
WE2A	EL PRADO / PARK ESTATES	SW-02A	System Well 1	3.45	2.40
WE2A	EL PRADO / PARK ESTATES	VA2A-1	Valving 1	2.30	1.80
WE2A	EL PRADO / PARK ESTATES	VA2A-2	Valving 2	2.30	1.80
WE30	ROCKBRIDGE / KEITH	AR30-1	Air Release Valve 1	1.90	1.45
WE30	ROCKBRIDGE / KEITH	AR30-2	Air Release Valve 2	1.90	1.45
WE30	ROCKBRIDGE / KEITH	CS30-CL1	Chlorination Sys 1	2.60	2.65
WE30	ROCKBRIDGE / KEITH	CS30-FE1	RFP Enclosure 1	2.80	1.45
WE30	ROCKBRIDGE / KEITH	CS30-FL1	Fluoride Sys 1	2.60	2.65
WE30	ROCKBRIDGE / KEITH	CV30-1	CheckValve 1	1.80	2.25
WE30	ROCKBRIDGE / KEITH	FM30-1	FlowMeter 1	1.80	2.50
WE30	ROCKBRIDGE / KEITH	MC30-1	MotorControlCenter1	2.80	2.40
WE30	ROCKBRIDGE / KEITH	MO30-1	MOTOR 01	2.10	1.80
WE30	ROCKBRIDGE / KEITH	PT30-1	PressureTransducer 1	2.05	1.70
WE30	ROCKBRIDGE / KEITH	PU30-1	PUMP 1	2.50	1.90
WE30	ROCKBRIDGE / KEITH	RT30-1	RemoteTelemetryUnit1	2.05	1.80
WE30	ROCKBRIDGE / KEITH	SW-30	System Well 1	3.05	2.40
WE30	ROCKBRIDGE / KEITH	VA30-1	Valving 1	2.30	1.80
WE30	ROCKBRIDGE / KEITH	VA30-2	Valving 2	2.30	1.80
WE30	ROCKBRIDGE / KEITH	VA30-3	Valving 3	2.30	1.80
WE30	ROCKBRIDGE / KEITH	VF30	VARIABLE FREQUENCY DRIVE 1	2.30	1.70
WE32A	EDEN / ROOT	AR32A-1	Air Release Valve 1	2.70	1.95
WE32A	EDEN / ROOT	AR32A-2	Air Release Valve 2	2.70	1.95
WE32A	EDEN / ROOT	AS32A	Alarm System 1	1.55	1.75
WE32A	EDEN / ROOT	BF32A-1	Backflow 1	2.80	2.55
WE32A	EDEN / ROOT	BF32A-2	Backflow 2	3.00	2.55
WE32A	EDEN / ROOT	BF32A-3	Backflow 3	2.80	2.55
WE32A	EDEN / ROOT	CA32A-1	ChemicalAnalyzer 1	3.90	2.10
WE32A	EDEN / ROOT	CS32A-CL1	Chlorination Sys 1	2.50	3.15
WE32A	EDEN / ROOT	CS32A-FE1	RFP Enclosure 1	1.80	1.95
WE32A	EDEN / ROOT	CS32A-FL1	Fluoride Sys 1	3.00	3.15
WE32A	EDEN / ROOT	CV32A-1	CheckValve 1	1.55	3.00
WE32A	EDEN / ROOT	FI32A-1	Filter 1	2.75	3.25
WE32A	EDEN / ROOT	FI32A-2	Filter 2	2.75	3.25
WE32A	EDEN / ROOT	FM32A-1	FlowMeter 1	1.80	3.00
WE32A	EDEN / ROOT	FM32A-2	FlowMeter 2	2.55	3.00
WE32A	EDEN / ROOT	FM32A-3	FlowMeter 3	2.75	3.00
WE32A	EDEN / ROOT	FM32A-4	FlowMeter 4	2.55	3.00
WE32A	EDEN / ROOT	FM32A-5	FlowMeter 5	1.80	3.00
WE32A	EDEN / ROOT	HV32A-1	HydraulicValve1	3.10	3.20

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE32A	EDEN / ROOT	HV32A-2	HydraulicValve2	3.10	2.30
WE32A	EDEN / ROOT	HV32A-3	HydraulicValve3	3.10	2.30
WE32A	EDEN / ROOT	HV32A-4	HydraulicValve4	3.10	2.30
WE32A	EDEN / ROOT	LT32A-1	LevelTransducer 1	3.00	1.85
WE32A	EDEN / ROOT	LT32A-2	LevelTransducer 2	2.80	1.85
WE32A	EDEN / ROOT	LT32A-3	LevelTransducer 3	2.80	1.85
WE32A	EDEN / ROOT	LT32A-4	LevelTransducer 4	2.80	1.85
WE32A	EDEN / ROOT	MC32A-1	MotorControlCenter1	3.05	3.10
WE32A	EDEN / ROOT	MO32A-1	MOTOR 01	2.65	3.00
WE32A	EDEN / ROOT	MO32A-2	MOTOR 02	3.60	3.00
WE32A	EDEN / ROOT	MO32A-3	MOTOR 03	3.40	3.00
WE32A	EDEN / ROOT	MV32A-1	MotorOperatedValve 1	3.05	2.40
WE32A	EDEN / ROOT	MV32A-10	MotorOperatedValve10	3.05	2.40
WE32A	EDEN / ROOT	MV32A-11	MotorOperatedValve11	3.05	2.40
WE32A	EDEN / ROOT	MV32A-12	MotorOperatedValve12	3.05	2.40
WE32A	EDEN / ROOT	MV32A-2	MotorOperatedValve 2	3.05	2.40
WE32A	EDEN / ROOT	MV32A-3	MotorOperatedValve 3	3.05	2.40
WE32A	EDEN / ROOT	MV32A-4	MotorOperatedValve 4	3.05	2.40
WE32A	EDEN / ROOT	MV32A-5	MotorOperatedValve 5	3.45	2.40
WE32A	EDEN / ROOT	MV32A-6	MotorOperatedValve 6	3.05	2.40
WE32A	EDEN / ROOT	MV32A-7	MotorOperatedValve 7	3.05	2.40
WE32A	EDEN / ROOT	MV32A-8	MotorOperatedValve 8	3.05	2.40
WE32A	EDEN / ROOT	MV32A-9	MotorOperatedValve 9	3.05	2.40
WE32A	EDEN / ROOT	PT32A-1	PressureTransducer 1	1.55	2.40
WE32A	EDEN / ROOT	PT32A-2	PressureTransducer 2	1.55	2.40
WE32A	EDEN / ROOT	PT32A-3	PressureTransducer 3	1.55	2.40
WE32A	EDEN / ROOT	PT32A-4	PressureTransducer 4	1.55	2.40
WE32A	EDEN / ROOT	PU32A-1	PUMP 1	2.25	2.85
WE32A	EDEN / ROOT	PU32A-2	PUMP 2	2.50	2.85
WE32A	EDEN / ROOT	PU32A-3	PUMP 3	2.70	2.85
WE32A	EDEN / ROOT	PU32A-4	PUMP 4	2.50	2.85
WE32A	EDEN / ROOT	RT32A-1	RemoteTelemetryUnit1	2.50	2.50
WE32A	EDEN / ROOT	SU32A-1	Sump 1	1.85	2.05
WE32A	EDEN / ROOT	SU32A-2	Sump 2	1.85	2.05
WE32A	EDEN / ROOT	SW-32A	System Well 1	3.35	3.30
WE32A	EDEN / ROOT	VA32A-1	Valving 1	1.80	2.50
WE32A	EDEN / ROOT	VA32A-2	Valving 2	1.80	2.50
WE32A	EDEN / ROOT	VA32A-3	Valving 3	1.80	2.50
WE32A	EDEN / ROOT	VA32A-4	Valving 4	1.80	2.50
WE32A	EDEN / ROOT	VF32A	VARIABLE FREQUENCY DRIVE 1	2.30	2.40
WE33A	AUBURN / NORRIS	AR33A-1	Air Release Valve 1	2.10	2.20
WE33A	AUBURN / NORRIS	BF33A-1	Backflow 1	2.70	2.80
WE33A	AUBURN / NORRIS	CC33A-1	ExFn	2.00	2.45
WE33A	AUBURN / NORRIS	CC33A-2	Wall	2.00	2.45
WE33A	AUBURN / NORRIS	CC33A-3	MCC	2.40	2.45
WE33A	AUBURN / NORRIS	CS33A-CL1	Chlorination Sys 1	2.50	3.40
WE33A	AUBURN / NORRIS	CS33A-FE1	RFP Enclosure 1	2.50	2.20
WE33A	AUBURN / NORRIS	CS33A-FE2	RFP Enclosure 2	2.50	2.20
WE33A	AUBURN / NORRIS	CS33A-FL1	Fluoride Sys 1	1.90	3.40
WE33A	AUBURN / NORRIS	CV33A-1	CheckValve 1	2.25	3.25
WE33A	AUBURN / NORRIS	FM33A-1	FlowMeter 1	1.50	3.25
WE33A	AUBURN / NORRIS	GE33A	Generator 1	2.95	2.80
WE33A	AUBURN / NORRIS	HV33A-1	HydraulicValve1	2.50	3.45
WE33A	AUBURN / NORRIS	LT33A-1	LevelTransducer 1	2.20	2.10
WE33A	AUBURN / NORRIS	LT33A-2	LevelTransducer 2	2.00	2.10
WE33A	AUBURN / NORRIS	MC33A-1	MotorControlCenter1	2.75	3.15
WE33A	AUBURN / NORRIS	MO33A-1	MOTOR 01	2.55	3.25
WE33A	AUBURN / NORRIS	PT33A-1	PressureTransducer 1	2.25	2.45
WE33A	AUBURN / NORRIS	PU33A-1	PUMP 1	2.50	2.90
WE33A	AUBURN / NORRIS	RT33A-1	RemoteTelemetryUnit1	2.20	2.55
WE33A	AUBURN / NORRIS	SE33A	Sound Enclosure 1	1.50	2.55
WE33A	AUBURN / NORRIS	SU33A-1	Sump 1	1.00	2.30
WE33A	AUBURN / NORRIS	SW-33A	System Well 1	3.05	3.15
WE33A	AUBURN / NORRIS	VA33A-1	Valving 1	1.50	2.55
WE33A	AUBURN / NORRIS	VA33A-2	Valving 2	1.50	2.55
WE33A	AUBURN / NORRIS	VA33A-3	Valving 3	1.50	2.55

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE33A	AUBURN / NORRIS	VA33A-4	Valving 4	1.50	2.55
WE33A	AUBURN / NORRIS	VF33A	VARIABLE FREQUENCY DRIVE 1	2.00	2.45
WE34	LA CIENEGA / MELROSE	AR34-1	Air Release Valve 1	2.20	1.20
WE34	LA CIENEGA / MELROSE	AR34-2	Air Release Valve 2	2.20	1.20
WE34	LA CIENEGA / MELROSE	CS34-CL1	Chlorination Sys 1	2.50	2.40
WE34	LA CIENEGA / MELROSE	CS34-FE1	RFP Enclosure 1	2.80	1.20
WE34	LA CIENEGA / MELROSE	CV34-1	CheckValve 1	1.55	2.00
WE34	LA CIENEGA / MELROSE	FM34-1	FlowMeter 1	1.80	2.25
WE34	LA CIENEGA / MELROSE	MC34-1	MotorControlCenter1	3.30	2.35
WE34	LA CIENEGA / MELROSE	MO34-1	MOTOR 01	3.00	2.25
WE34	LA CIENEGA / MELROSE	PT34-1	PressureTransducer 1	1.80	1.45
WE34	LA CIENEGA / MELROSE	PU34-1	PUMP 1	2.25	1.65
WE34	LA CIENEGA / MELROSE	SS34-1	SandSeparator 1	2.80	2.85
WE34	LA CIENEGA / MELROSE	SW-34	System Well 1	2.80	2.15
WE34	LA CIENEGA / MELROSE	TA34-1	Tank 1	2.75	3.30
WE34	LA CIENEGA / MELROSE	VA34-1	Valving 1	2.30	1.55
WE34	LA CIENEGA / MELROSE	VA34-2	Valving 2	2.30	1.55
WE35	ULYSSES / MERCURY	AR35-1	Air Release Valve 1	2.20	1.45
WE35	ULYSSES / MERCURY	AR35-2	Air Release Valve 2	2.20	1.45
WE35	ULYSSES / MERCURY	CS35-CL1	Chlorination Sys 1	2.05	2.65
WE35	ULYSSES / MERCURY	CS35-FE1	RFP Enclosure 1	2.80	1.45
WE35	ULYSSES / MERCURY	CS35-FL1	Fluoride Sys 1	1.80	2.65
WE35	ULYSSES / MERCURY	CV35-1	CheckValve 1	1.55	2.25
WE35	ULYSSES / MERCURY	FM35-1	FlowMeter 1	1.80	2.50
WE35	ULYSSES / MERCURY	MC35-1	MotorControlCenter1	3.00	2.40
WE35	ULYSSES / MERCURY	MO35-1	MOTOR 01	2.40	1.80
WE35	ULYSSES / MERCURY	PT35-1	PressureTransducer 1	1.80	1.70
WE35	ULYSSES / MERCURY	PU35-1	PUMP 1	1.75	1.90
WE35	ULYSSES / MERCURY	RT35-1	RemoteTelemetryUnit1	2.05	1.80
WE35	ULYSSES / MERCURY	SS35-1	SandSeparator 1	2.80	3.10
WE35	ULYSSES / MERCURY	SW-35	System Well 1	3.45	2.40
WE35	ULYSSES / MERCURY	TA35-1	Tank 1	3.55	3.55
WE35	ULYSSES / MERCURY	VA35-1	Valving 1	2.30	1.80
WE35	ULYSSES / MERCURY	VA35-2	Valving 2	2.30	1.80
WE37	MORSE / COTTAGE PARK	AR37-1	Air Release Valve 1	1.90	1.45
WE37	MORSE / COTTAGE PARK	CV37-1	CheckValve 1	1.55	2.25
WE37	MORSE / COTTAGE PARK	FM37-1	FlowMeter 1	1.80	2.50
WE37	MORSE / COTTAGE PARK	MC37-1	MotorControlCenter1	2.55	2.40
WE37	MORSE / COTTAGE PARK	PT37-1	PressureTransducer 1	1.80	1.70
WE37	MORSE / COTTAGE PARK	PU37-1	PUMP 1	2.50	1.90
WE37	MORSE / COTTAGE PARK	SS37-1	SandSeparator 1	2.80	3.10
WE37	MORSE / COTTAGE PARK	SW-37	System Well 1	2.30	2.40
WE37	MORSE / COTTAGE PARK	VA37-1	Valving 1	2.30	1.80
WE37	MORSE / COTTAGE PARK	VA37-2	Valving 2	2.30	1.80
WE39	THOMAS / ELKHORN	AR39-1	Air Release Valve 1	2.20	1.20
WE39	THOMAS / ELKHORN	CV39-1	CheckValve 1	1.55	2.00
WE39	THOMAS / ELKHORN	FM39-1	FlowMeter 1	1.80	2.25
WE39	THOMAS / ELKHORN	MC39-1	MotorControlCenter1	2.55	2.15
WE39	THOMAS / ELKHORN	PT39-1	PressureTransducer 1	1.80	1.45
WE39	THOMAS / ELKHORN	PU39-1	PUMP 1	2.50	1.65
WE39	THOMAS / ELKHORN	SW-39	System Well 1	2.30	2.15
WE39	THOMAS / ELKHORN	VA39-1	Valving 1	2.30	1.55
WE3A	KUBEL / ARMSTRONG	AR3A-1	Air Release Valve 1	2.90	1.45
WE3A	KUBEL / ARMSTRONG	CS3A-CL1	Chlorination Sys 1	2.85	2.65
WE3A	KUBEL / ARMSTRONG	CS3A-FE1	RFP Enclosure 1	2.80	1.45
WE3A	KUBEL / ARMSTRONG	CS3A-FL1	Fluoride Sys 1	2.10	2.65
WE3A	KUBEL / ARMSTRONG	CV3A-1	CheckValve 1	2.55	2.25
WE3A	KUBEL / ARMSTRONG	FM3A-1	FlowMeter 1	1.80	2.50
WE3A	KUBEL / ARMSTRONG	HV3A-1	HydraulicValve1	2.30	2.45
WE3A	KUBEL / ARMSTRONG	MC3A-1	MotorControlCenter1	2.55	2.40
WE3A	KUBEL / ARMSTRONG	MO3A-1	MOTOR 01	2.10	1.90
WE3A	KUBEL / ARMSTRONG	PT3A-1	PressureTransducer 1	2.30	1.70
WE3A	KUBEL / ARMSTRONG	PU3A-1	PUMP 1	1.75	1.90
WE3A	KUBEL / ARMSTRONG	RT3A-1	RemoteTelemetryUnit1	2.00	1.80
WE3A	KUBEL / ARMSTRONG	SW-03A	System Well 1	3.00	2.40
WE3A	KUBEL / ARMSTRONG	VA3A-1	Valving 1	2.30	1.80

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE3A	KUBEL / ARMSTRONG	VA3A-2	Valving 2	2.30	1.80
WE3A	KUBEL / ARMSTRONG	VA3A-3	Valving 3	2.30	1.80
WE40A	AUBURN YARD	AR40A-1	Air Release Valve 1	2.10	2.20
WE40A	AUBURN YARD	BF40A-1	Backflow 1	2.70	2.80
WE40A	AUBURN YARD	CC40A-1	Wall	2.00	2.45
WE40A	AUBURN YARD	CS40A-CL1	Chlorination Sys 1	2.50	3.40
WE40A	AUBURN YARD	CS40A-FE1	RFP Enclosure 1	2.50	2.20
WE40A	AUBURN YARD	CS40A-FE2	RFP Enclosure 2	2.50	2.20
WE40A	AUBURN YARD	CS40A-FL1	Fluoride Sys 1	1.90	3.40
WE40A	AUBURN YARD	CV40A-1	CheckValve 1	2.25	3.25
WE40A	AUBURN YARD	FM40A-1	FlowMeter 1	1.50	3.25
WE40A	AUBURN YARD	GE40A-1	Generator 1	2.75	2.80
WE40A	AUBURN YARD	HV40A-1	HydraulicValve1	2.50	3.45
WE40A	AUBURN YARD	LT40A-1	LevelTransducer 1	2.45	2.10
WE40A	AUBURN YARD	LT40A-2	LevelTransducer 2	2.25	2.10
WE40A	AUBURN YARD	MC40A-1	MotorControlCenter1	2.75	3.15
WE40A	AUBURN YARD	MO40A-1	MOTOR 01	1.80	3.25
WE40A	AUBURN YARD	PT40A-1	PressureTransducer 1	2.25	2.45
WE40A	AUBURN YARD	PU40A-1	PUMP 1	2.50	2.90
WE40A	AUBURN YARD	RT40A-1	RemoteTelemetryUnit1	2.20	2.55
WE40A	AUBURN YARD	SE40A	Sound Enclosure 1	1.50	2.55
WE40A	AUBURN YARD	SU40A-1	Sump 1	1.45	2.30
WE40A	AUBURN YARD	SW-40A	System Well 1	3.05	3.15
WE40A	AUBURN YARD	TA40A-1	Tank 1	3.10	4.00
WE40A	AUBURN YARD	VA40A-1	Valving 1	1.50	2.55
WE40A	AUBURN YARD	VA40A-2	Valving 2	1.50	2.55
WE40A	AUBURN YARD	VA40A-3	Valving 3	1.50	2.55
WE40A	AUBURN YARD	VA40A-4	Valving 4	1.50	2.55
WE40A	AUBURN YARD	VA40A-5	Valving 5	1.50	2.55
WE40A	AUBURN YARD	VA40A-6	Valving 6	1.50	2.55
WE40A	AUBURN YARD	VF40A	VARIABLE FREQUENCY DRIVE 1	2.20	2.45
WE41	ALBATROSS / IRIS	AR41-1	Air Release Valve 1	1.60	1.45
WE41	ALBATROSS / IRIS	CS41-CL1	Chlorination Sys 1	1.75	2.65
WE41	ALBATROSS / IRIS	CS41-FE1	RFP Enclosure 1	2.50	1.45
WE41	ALBATROSS / IRIS	CS41-FE2	RFP Enclosure 2	2.50	1.45
WE41	ALBATROSS / IRIS	CS41-FL1	Fluoride Sys 1	1.75	2.65
WE41	ALBATROSS / IRIS	CV41-1	CheckValve 1	1.25	2.25
WE41	ALBATROSS / IRIS	FM41-1	FlowMeter 1	1.50	2.50
WE41	ALBATROSS / IRIS	MC41-1	MotorControlCenter1	2.50	2.40
WE41	ALBATROSS / IRIS	MO41-1	MOTOR 01	2.05	2.50
WE41	ALBATROSS / IRIS	PT41-1	PressureTransducer 1	1.50	1.70
WE41	ALBATROSS / IRIS	PU41-1	PUMP 1	2.00	1.90
WE41	ALBATROSS / IRIS	RT41-1	RemoteTelemetryUnit1	1.75	1.80
WE41	ALBATROSS / IRIS	SW-41	System Well 1	2.50	2.40
WE41	ALBATROSS / IRIS	VA41-1	Valving 1	2.00	1.80
WE41	ALBATROSS / IRIS	VA41-2	Valving 2	2.00	1.80
WE43	EDISON / TRUAX	AR43-1	Air Release Valve 1	1.60	1.45
WE43	EDISON / TRUAX	CS43-CL1	Chlorination Sys 1	1.75	2.65
WE43	EDISON / TRUAX	CS43-FE1	RFP Enclosure 1	2.50	1.45
WE43	EDISON / TRUAX	CS43-FE2	RFP Enclosure 2	2.50	1.45
WE43	EDISON / TRUAX	CS43-FL1	Fluoride Sys 1	1.50	2.65
WE43	EDISON / TRUAX	CV43-1	CheckValve 1	1.25	2.25
WE43	EDISON / TRUAX	FM43-1	FlowMeter 1	1.50	2.50
WE43	EDISON / TRUAX	HV43-1	HydraulicValve1	2.25	2.45
WE43	EDISON / TRUAX	MC43-1	MotorControlCenter1	2.75	2.40
WE43	EDISON / TRUAX	MO43-1	MOTOR 01	3.00	2.50
WE43	EDISON / TRUAX	PT43-1	PressureTransducer 1	1.50	1.70
WE43	EDISON / TRUAX	PU43-1	PUMP 1	2.50	1.90
WE43	EDISON / TRUAX	RT43-1	RemoteTelemetryUnit1	1.50	1.80
WE43	EDISON / TRUAX	SW-43	System Well 1	2.75	2.40
WE43	EDISON / TRUAX	VA43-1	Valving 1	2.00	1.80
WE43	EDISON / TRUAX	VA43-2	Valving 2	2.00	1.80
WE43	EDISON / TRUAX	VA43-3	Valving 3	2.00	1.80
WE46	JONAS / SIERRA MILLS	AR46-1	Air Release Valve 1	1.90	1.45
WE46	JONAS / SIERRA MILLS	CS46R-CL1	Chlorination Sys 1	2.10	2.65
WE46	JONAS / SIERRA MILLS	CV46-1	CheckValve 1	1.55	2.25

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE46	JONAS / SIERRA MILLS	FM46-1	FlowMeter 1	1.80	2.50
WE46	JONAS / SIERRA MILLS	HV46-1	HydraulicValve1	2.50	2.45
WE46	JONAS / SIERRA MILLS	MC46-1	MotorControlCenter1	2.55	2.40
WE46	JONAS / SIERRA MILLS	MO46-1	MOTOR 01	3.10	2.50
WE46	JONAS / SIERRA MILLS	PT46-1	PressureTransducer 1	1.55	1.70
WE46	JONAS / SIERRA MILLS	PU46-1	PUMP 1	2.50	1.90
WE46	JONAS / SIERRA MILLS	RT46-1	RemoteTelemetryUnit1	1.80	1.80
WE46	JONAS / SIERRA MILLS	SS46-1	SandSeparator 1	2.80	3.10
WE46	JONAS / SIERRA MILLS	SW-46	System Well 1	3.00	2.40
WE46	JONAS / SIERRA MILLS	VA46-1	Valving 1	2.30	1.80
WE46	JONAS / SIERRA MILLS	VA46-2	Valving 2	2.30	1.80
WE46	JONAS / SIERRA MILLS	VA46-3	Valving 3	2.30	1.80
WE47	COPENHAGEN / ARDEN	AR47-1	Air Release Valve 1	2.20	1.70
WE47	COPENHAGEN / ARDEN	CS47-CL1	Chlorination Sys1	2.05	2.90
WE47	COPENHAGEN / ARDEN	CS47-FE1	RFP Enclosure 1	2.80	1.70
WE47	COPENHAGEN / ARDEN	CS47-FE2	RFP Enclosure 2	2.80	1.70
WE47	COPENHAGEN / ARDEN	CS47-FL1	Fluoride Sys 1	1.80	2.90
WE47	COPENHAGEN / ARDEN	CV47-1	CheckValve 1	1.55	2.75
WE47	COPENHAGEN / ARDEN	FM47-1	FlowMeter 1	1.80	2.75
WE47	COPENHAGEN / ARDEN	HV47-1	HydraulicValve1	2.80	2.95
WE47	COPENHAGEN / ARDEN	MC47-1	MotorControlCenter1	2.55	2.65
WE47	COPENHAGEN / ARDEN	MO47-1	MOTOR 01	2.65	2.75
WE47	COPENHAGEN / ARDEN	PT47-1	PressureTransducer 1	1.55	1.95
WE47	COPENHAGEN / ARDEN	PU47-1	PUMP 1	2.00	2.40
WE47	COPENHAGEN / ARDEN	RT47-1	RemoteTelemetryUnit1	2.25	2.05
WE47	COPENHAGEN / ARDEN	SU47-1	Sump 1	2.35	1.80
WE47	COPENHAGEN / ARDEN	SW-47	System Well 1	3.20	2.65
WE47	COPENHAGEN / ARDEN	VA47-1	Valving 1	2.30	2.05
WE4B	BELL / MARCONI	AR4B-1	Air Release Valve 1	2.65	2.20
WE4B	BELL / MARCONI	BF4B-1	Backflow 1	3.00	2.80
WE4B	BELL / MARCONI	CC4B-1	ExFn 1	2.45	2.45
WE4B	BELL / MARCONI	CC4B-2	Wall	2.25	2.45
WE4B	BELL / MARCONI	CS4B-CL1	Chlorination Sys 1	2.60	3.40
WE4B	BELL / MARCONI	CS4B-FE1	RFP Enclosure 1	2.80	2.20
WE4B	BELL / MARCONI	CS4B-FE2	RFP Enclosure 2	2.80	2.20
WE4B	BELL / MARCONI	CS4B-FL1	Fluoride Sys 1	2.50	3.40
WE4B	BELL / MARCONI	CV4B-1	CheckValve 1	1.80	3.25
WE4B	BELL / MARCONI	FM4B-1	FlowMeter 1	1.80	3.25
WE4B	BELL / MARCONI	GE4B	Generator 1	3.50	2.80
WE4B	BELL / MARCONI	HV4B-1	HydraulicValve1	2.05	3.45
WE4B	BELL / MARCONI	LT4B-1	LevelTransducer 1	2.30	2.10
WE4B	BELL / MARCONI	LT4B-2	LevelTransducer 2	2.30	2.10
WE4B	BELL / MARCONI	MC4B-1	MotorControlCenter1	3.05	3.15
WE4B	BELL / MARCONI	MO4B-1	MOTOR 01	2.30	3.25
WE4B	BELL / MARCONI	PT4B-1	PressureTransducer 1	2.05	2.45
WE4B	BELL / MARCONI	PU4B-1	PUMP 1	1.70	2.90
WE4B	BELL / MARCONI	RT4B-1	RemoteTelemetryUnit1	2.50	2.55
WE4B	BELL / MARCONI	SE4B	Sound Enclosure 1	2.05	2.55
WE4B	BELL / MARCONI	SU4B-1	SumpPump 1	2.30	2.00
WE4B	BELL / MARCONI	SU4B-2	Sump 1	2.00	2.30
WE4B	BELL / MARCONI	SW-04B	System Well 1	3.35	3.15
WE4B	BELL / MARCONI	VA4B-1	Valving 1	2.05	2.55
WE4B	BELL / MARCONI	VA4B-2	Valving 2	2.05	2.55
WE4B	BELL / MARCONI	VA4B-3	Valving 3	2.05	2.55
WE4B	BELL / MARCONI	VF4B	VARIABLE FREQUENCY DRIVE 1	2.75	2.45
WE52	WEDDIGEN / GOTHBERG	AR52-1	Air Release Valve 1	2.20	1.45
WE52	WEDDIGEN / GOTHBERG	CS52-CL1	Chlorination Sys 1	2.50	2.65
WE52	WEDDIGEN / GOTHBERG	CS52-FE1	RFP Enclosure 1	2.80	1.45
WE52	WEDDIGEN / GOTHBERG	CV52-1	CheckValve 1	1.55	2.25
WE52	WEDDIGEN / GOTHBERG	FM52-1	FlowMeter 1	1.80	2.50
WE52	WEDDIGEN / GOTHBERG	HV52-1	HydraulicValve1	2.60	2.45
WE52	WEDDIGEN / GOTHBERG	MC52-1	MotorControlCenter1	3.30	2.60
WE52	WEDDIGEN / GOTHBERG	MO52-1	MOTOR 01	2.35	2.50
WE52	WEDDIGEN / GOTHBERG	PT52-1	PressureTransducer 1	1.55	1.70
WE52	WEDDIGEN / GOTHBERG	PU52-1	PUMP 1	1.75	1.90
WE52	WEDDIGEN / GOTHBERG	RT52-1	RemoteTelemetryUnit1	2.05	1.80

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE52	WEDDIGEN / GOTHBERG	SW-52	System Well 1	2.80	2.40
WE52	WEDDIGEN / GOTHBERG	VA52-1	Valving 1	2.30	1.80
WE52	WEDDIGEN / GOTHBERG	VA52-2	Valving 2	2.30	1.80
WE52	WEDDIGEN / GOTHBERG	VA52-3	Valving 3	2.30	1.80
WE55A	STEWART / LYNNDALE	AR55A-1	Air Release Valve 1	2.70	2.20
WE55A	STEWART / LYNNDALE	AR55A-2	Air Release Valve 2	2.70	2.20
WE55A	STEWART / LYNNDALE	AS55A	Alarm System 1	1.55	2.00
WE55A	STEWART / LYNNDALE	BF55A-1	Backflow 1	2.80	2.80
WE55A	STEWART / LYNNDALE	CC55A-1	AC Room Unit	2.20	2.45
WE55A	STEWART / LYNNDALE	CS55A-CL1	Chlorination Sys 1	1.80	3.40
WE55A	STEWART / LYNNDALE	CS55A-FE1	RFP Enclosure 1	2.80	2.20
WE55A	STEWART / LYNNDALE	CS55A-FL1	Fluoride Sys 1	1.80	3.40
WE55A	STEWART / LYNNDALE	CV55A-1	CheckValve 1	1.75	3.25
WE55A	STEWART / LYNNDALE	FM55A-1	FlowMeter 1	1.80	3.25
WE55A	STEWART / LYNNDALE	GE55A	Generator 1	2.75	2.80
WE55A	STEWART / LYNNDALE	HV55A-1	HydraulicValve1	3.10	3.45
WE55A	STEWART / LYNNDALE	LT55A-1	LevelTransducer 1	3.00	2.10
WE55A	STEWART / LYNNDALE	LT55A-2	LevelTransducer 2	2.80	2.10
WE55A	STEWART / LYNNDALE	MC55A-1	MotorControlCenter1	3.25	3.15
WE55A	STEWART / LYNNDALE	MO55A-1	MOTOR 01	3.15	3.25
WE55A	STEWART / LYNNDALE	PT55A-1	PressureTransducer 1	1.55	2.45
WE55A	STEWART / LYNNDALE	PU55A-1	PUMP 1	2.50	2.90
WE55A	STEWART / LYNNDALE	RT55A-1	RemoteTelemetryUnit1	2.50	2.55
WE55A	STEWART / LYNNDALE	SW-55A	System Well 1	3.10	3.15
WE55A	STEWART / LYNNDALE	VA55A-1	Valving 1	1.80	2.55
WE56A	FAIRBAIRN / KARL	AR56A-1	Air Release Valve 1	2.70	1.95
WE56A	FAIRBAIRN / KARL	AR56A-2	Air Release Valve 2	2.70	1.95
WE56A	FAIRBAIRN / KARL	BF56A-1	Backflow 1	2.80	2.55
WE56A	FAIRBAIRN / KARL	CC56A-1	AC Wall Unit	2.00	2.20
WE56A	FAIRBAIRN / KARL	CS56A-CL1	Chlorination Sys 1	2.50	3.15
WE56A	FAIRBAIRN / KARL	CS56A-FE1	RFP Enclosure 1	2.80	1.95
WE56A	FAIRBAIRN / KARL	CV56A-1	CheckValve 1	2.55	3.00
WE56A	FAIRBAIRN / KARL	FM56A-1	FlowMeter 1	1.80	3.00
WE56A	FAIRBAIRN / KARL	GE56A	Generator 1	3.05	2.55
WE56A	FAIRBAIRN / KARL	HV56A-1	HydraulicValve1	3.10	3.20
WE56A	FAIRBAIRN / KARL	LT56A-1	LevelTransducer 1	2.55	1.85
WE56A	FAIRBAIRN / KARL	MC56A-1	MotorControlCenter1	3.05	2.90
WE56A	FAIRBAIRN / KARL	MO56A-1	MOTOR 01	2.10	3.00
WE56A	FAIRBAIRN / KARL	PT56A-1	PressureTransducer 1	2.55	2.20
WE56A	FAIRBAIRN / KARL	PU56A-1	PUMP 1	2.50	2.65
WE56A	FAIRBAIRN / KARL	RT56A-1	RemoteTelemetryUnit1	2.30	2.30
WE56A	FAIRBAIRN / KARL	SE56A	Sound Enclosure 1	1.80	2.30
WE56A	FAIRBAIRN / KARL	SU56A-1	Sump 1	1.55	2.05
WE56A	FAIRBAIRN / KARL	SW-56A	System Well 1	3.35	2.90
WE56A	FAIRBAIRN / KARL	TA56A-1	Tank 1	2.20	3.75
WE56A	FAIRBAIRN / KARL	VA56A-1	Valving 1	1.80	2.30
WE56A	FAIRBAIRN / KARL	VA56A-2	Valving 2	1.80	2.30
WE56A	FAIRBAIRN / KARL	VA56A-3	Valving 3	1.80	2.30
WE56A	FAIRBAIRN / KARL	VA56A-4	Valving 4	1.80	2.30
WE56A	FAIRBAIRN / KARL	VA56A-5	Valving 5	1.80	2.30
WE56A	FAIRBAIRN / KARL	VF56A	VARIABLE FREQUENCY DRIVE 1	2.70	2.20
WE59A	BAINBRIDGE / HOLMES SCHOOL	AR59A-1	Air Release Valve 1	2.70	2.20
WE59A	BAINBRIDGE / HOLMES SCHOOL	BF59A-1	Backflow 1	3.20	2.80
WE59A	BAINBRIDGE / HOLMES SCHOOL	CC59A-1	AC MCC Unit	2.00	2.45
WE59A	BAINBRIDGE / HOLMES SCHOOL	CS59A-CL1	Chlorination Sys 1	1.50	3.40
WE59A	BAINBRIDGE / HOLMES SCHOOL	CS59A-FE1	RFP Enclosure 1	2.80	2.20
WE59A	BAINBRIDGE / HOLMES SCHOOL	CV59A-1	CheckValve 1	2.55	3.25
WE59A	BAINBRIDGE / HOLMES SCHOOL	FM59A-1	FlowMeter 1	1.80	3.25
WE59A	BAINBRIDGE / HOLMES SCHOOL	GE59A	Generator 1	3.05	2.80
WE59A	BAINBRIDGE / HOLMES SCHOOL	HV59A-1	HydraulicValve1	3.10	3.45
WE59A	BAINBRIDGE / HOLMES SCHOOL	MC59A-1	MotorControlCenter1	3.05	3.15
WE59A	BAINBRIDGE / HOLMES SCHOOL	MO59A-1	MOTOR 01	2.30	3.25
WE59A	BAINBRIDGE / HOLMES SCHOOL	PT59A-1	PressureTransducer 1	2.55	2.45
WE59A	BAINBRIDGE / HOLMES SCHOOL	PU59A-1	PUMP 1	1.70	2.90
WE59A	BAINBRIDGE / HOLMES SCHOOL	RT59A-1	RemoteTelemetryUnit1	2.30	2.55
WE59A	BAINBRIDGE / HOLMES SCHOOL	SE59A	Sound Enclosure 1	1.80	2.55

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE59A	BAINBRIDGE / HOLMES SCHOOL	SU59A-1	Sump 1	1.55	2.30
WE59A	BAINBRIDGE / HOLMES SCHOOL	SW-59A	System Well 1	2.90	3.15
WE59A	BAINBRIDGE / HOLMES SCHOOL	VA59A-1	Valving 1	1.80	2.55
WE59A	BAINBRIDGE / HOLMES SCHOOL	VA59A-2	Valving 2	1.80	2.55
WE59A	BAINBRIDGE / HOLMES SCHOOL	VA59A-3	Valving 3	1.80	2.55
WE59A	BAINBRIDGE / HOLMES SCHOOL	VF59A	VARIABLE FREQUENCY DRIVE 1	2.30	2.45
WE60	WHITNEY / CONCETTA	AR60-1	Air Release Valve 1	2.35	1.45
WE60	WHITNEY / CONCETTA	CS60-CL1	Chlorination Sys 1	2.00	2.65
WE60	WHITNEY / CONCETTA	CS60-FE1	RFP Enclosure 1	2.50	1.45
WE60	WHITNEY / CONCETTA	CS60-FL1	Fluoride Sys 1	1.50	2.65
WE60	WHITNEY / CONCETTA	CV60-1	CheckValve 1	2.00	2.25
WE60	WHITNEY / CONCETTA	FM60-1	FlowMeter 1	1.50	2.50
WE60	WHITNEY / CONCETTA	HV60-1	Hydraulic Valve1	1.75	2.45
WE60	WHITNEY / CONCETTA	LT60-1	LevelTransducer 1	2.25	1.35
WE60	WHITNEY / CONCETTA	LT60-2	LevelTransducer 2	2.25	1.35
WE60	WHITNEY / CONCETTA	MC60-1	MotorControlCenter1	2.50	2.40
WE60	WHITNEY / CONCETTA	MO60-1	MOTOR 01	2.30	2.50
WE60	WHITNEY / CONCETTA	PT60-1	PressureTransducer 1	1.75	1.70
WE60	WHITNEY / CONCETTA	PU60-1	PUMP 1	2.00	1.90
WE60	WHITNEY / CONCETTA	RT60-1	RemoteTelemetryUnit1	1.75	1.80
WE60	WHITNEY / CONCETTA	SW-60	System Well 1	2.50	2.40
WE60	WHITNEY / CONCETTA	VA60-1	Valving 1	2.00	1.80
WE60	WHITNEY / CONCETTA	VA60-2	Valving 2	2.00	1.80
WE64	GALBRATH / ANTELOPE WOODS	AR64-1	Air Release Valve 1	2.70	1.70
WE64	GALBRATH / ANTELOPE WOODS	AR64-2	Air Release Valve 2	2.70	1.70
WE64	GALBRATH / ANTELOPE WOODS	CS64-CL1	Chlorination Sys 1	1.70	2.90
WE64	GALBRATH / ANTELOPE WOODS	CS64-FE1	RFP Enclosure 1	2.80	1.70
WE64	GALBRATH / ANTELOPE WOODS	CV64-1	CheckValve 1	2.05	2.75
WE64	GALBRATH / ANTELOPE WOODS	FM64-1	FlowMeter 1	1.80	2.75
WE64	GALBRATH / ANTELOPE WOODS	MC64-1	MotorControlCenter1	2.55	2.65
WE64	GALBRATH / ANTELOPE WOODS	MO64-1	MOTOR 01	2.10	2.75
WE64	GALBRATH / ANTELOPE WOODS	PT64-1	PressureTransducer 1	1.55	1.95
WE64	GALBRATH / ANTELOPE WOODS	PU64-1	PUMP 1	1.75	2.40
WE64	GALBRATH / ANTELOPE WOODS	RT64-1	RemoteTelemetryUnit1	1.80	2.05
WE64	GALBRATH / ANTELOPE WOODS	SS64-1	SandSeparator 1	2.80	3.35
WE64	GALBRATH / ANTELOPE WOODS	SW-64	System Well 1	3.00	2.65
WE64	GALBRATH / ANTELOPE WOODS	TA64-1	Tank 1	2.75	3.80
WE64	GALBRATH / ANTELOPE WOODS	VA64-1	Valving 1	2.30	2.05
WE64	GALBRATH / ANTELOPE WOODS	VA64-2	Valving 2	2.30	2.05
WE64	GALBRATH / ANTELOPE WOODS	VA64-3	Valving 3	2.30	2.05
WE65	MERRILY / ANNADALE	AR65-1	Air Release Valve 1	2.10	1.70
WE65	MERRILY / ANNADALE	AR65-2	Air Release Valve 2	2.10	1.70
WE65	MERRILY / ANNADALE	BF65-1	Backflow 1	2.30	2.30
WE65	MERRILY / ANNADALE	CS65-CL1	Chlorination Sys 1	2.25	2.90
WE65	MERRILY / ANNADALE	CS65-FE1	RFP Enclosure 1	2.50	1.70
WE65	MERRILY / ANNADALE	CS65-FL1	Fluoride Sys 1	1.50	2.90
WE65	MERRILY / ANNADALE	CV65-1	CheckValve 1	1.50	2.75
WE65	MERRILY / ANNADALE	FM65-1	FlowMeter 1	1.75	2.75
WE65	MERRILY / ANNADALE	MC65-1	MotorControlCenter1	3.40	2.85
WE65	MERRILY / ANNADALE	MO65-1	MOTOR 01	1.80	2.75
WE65	MERRILY / ANNADALE	PT65-1	PressureTransducer 1	2.00	1.95
WE65	MERRILY / ANNADALE	PU65-1	PUMP 1	1.50	2.40
WE65	MERRILY / ANNADALE	RT65-1	RemoteTelemetryUnit1	1.75	2.05
WE65	MERRILY / ANNADALE	SE65	Sound Enclosure 1	1.50	2.05
WE65	MERRILY / ANNADALE	SW-65	System Well 1	3.30	2.65
WE65	MERRILY / ANNADALE	TA65-1	Tank 1	3.65	3.50
WE65	MERRILY / ANNADALE	VA65-1	Valving 1	2.00	2.05
WE65	MERRILY / ANNADALE	VA65-2	Valving 2	2.00	2.05
WE66	EASTERN / WOODSIDE CHURCH	AR66-1	Air Release Valve 1	2.10	1.70
WE66	EASTERN / WOODSIDE CHURCH	AR66-2	Air Release Valve 2	2.10	1.70
WE66	EASTERN / WOODSIDE CHURCH	CS66-CL1	Chlorination Sys 1	2.25	2.90
WE66	EASTERN / WOODSIDE CHURCH	CS66-FE1	RFP Enclosure 1	2.50	1.70
WE66	EASTERN / WOODSIDE CHURCH	CS66-FL1	Fluoride Sys 1	1.50	2.90
WE66	EASTERN / WOODSIDE CHURCH	CV66-1	CheckValve 1	1.50	2.75
WE66	EASTERN / WOODSIDE CHURCH	FM66-1	FlowMeter 1	1.50	2.75
WE66	EASTERN / WOODSIDE CHURCH	GE66-1	Generator 1	2.95	2.30

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE66	EASTERN / WOODSIDE CHURCH	MC66-1	MotorControlCenter1	3.00	2.85
WE66	EASTERN / WOODSIDE CHURCH	MO66-1	MOTOR 01	2.75	2.75
WE66	EASTERN / WOODSIDE CHURCH	PT66-1	PressureTransducer 1	2.00	1.95
WE66	EASTERN / WOODSIDE CHURCH	PU66-1	PUMP 1	2.50	2.40
WE66	EASTERN / WOODSIDE CHURCH	RT66-1	RemoteTelemetryUnit1	1.75	2.05
WE66	EASTERN / WOODSIDE CHURCH	SE66	Sound Enclosure 1	1.50	2.05
WE66	EASTERN / WOODSIDE CHURCH	SW-66	System Well 1	2.90	2.65
WE66	EASTERN / WOODSIDE CHURCH	TA66-1	Tank 1	3.65	3.50
WE66	EASTERN / WOODSIDE CHURCH	VA66-1	Valving 1	2.00	2.05
WE66	EASTERN / WOODSIDE CHURCH	VA66-2	Valving 2	2.00	2.05
WE68	NORTHROP / DORNAJO	AR68-1	Air Release Valve 1	1.90	1.95
WE68	NORTHROP / DORNAJO	CS68-FE1	RFP Enclosure 1	2.80	1.95
WE68	NORTHROP / DORNAJO	CS68-FE2	RFP Enclosure 2	2.80	1.95
WE68	NORTHROP / DORNAJO	CS68R-CL1	Chlorination Sys	2.10	3.15
WE68	NORTHROP / DORNAJO	CV68-1	CheckValve 1	2.05	3.00
WE68	NORTHROP / DORNAJO	FM68-1	FlowMeter 1	1.80	3.00
WE68	NORTHROP / DORNAJO	HV68-1	HydraulicValve1	2.05	3.20
WE68	NORTHROP / DORNAJO	MC68-1	MotorControlCenter1	3.30	3.10
WE68	NORTHROP / DORNAJO	MO68-1	MOTOR 01	3.10	3.00
WE68	NORTHROP / DORNAJO	PT68-1	PressureTransducer 1	1.55	2.20
WE68	NORTHROP / DORNAJO	PU68-1	PUMP 1	2.50	2.65
WE68	NORTHROP / DORNAJO	RT68-1	RemoteTelemetryUnit1	1.55	2.30
WE68	NORTHROP / DORNAJO	SW-68	System Well 1	2.30	2.90
WE68	NORTHROP / DORNAJO	VA68-1	Valving 1	2.05	2.30
WE68	NORTHROP / DORNAJO	VA68-2	Valving 2	2.05	2.30
WE68	NORTHROP / DORNAJO	VA68-3	Valving 3	2.05	2.30
WE69	HILLDALE / COOPER	AR69-1	Air Release Valve 1	2.15	1.20
WE69	HILLDALE / COOPER	AR69-2	Air Release Valve 2	2.15	1.20
WE69	HILLDALE / COOPER	CS69-CL2	Chlorination Sys 2	2.35	2.40
WE69	HILLDALE / COOPER	CS69-FL1	Fluoride Sys 1	2.10	2.40
WE69	HILLDALE / COOPER	CS69R-CL1	Chlorination Sys	2.35	2.40
WE69	HILLDALE / COOPER	CV69-1	CheckValve 1	1.55	2.00
WE69	HILLDALE / COOPER	FM69-1	FlowMeter 1	2.05	2.25
WE69	HILLDALE / COOPER	MC69-1	MotorControlCenter1	3.30	2.35
WE69	HILLDALE / COOPER	MO69-1	MOTOR 01	2.10	1.55
WE69	HILLDALE / COOPER	PT69-1	PressureTransducer 1	1.80	1.45
WE69	HILLDALE / COOPER	PU69-1	PUMP 1	1.50	1.65
WE69	HILLDALE / COOPER	RT69-1	RemoteTelemetryUnit1	1.80	1.55
WE69	HILLDALE / COOPER	SW-69	System Well 1	2.55	2.15
WE69	HILLDALE / COOPER	TA69-1	Tank 1	2.35	3.00
WE69	HILLDALE / COOPER	VA69-1	Valving 1	2.30	1.55
WE70	SIERRA / BLACKMER	AR70-1	Air Release Valve 1	2.15	1.45
WE70	SIERRA / BLACKMER	AR70-2	Air Release Valve 2	2.15	1.45
WE70	SIERRA / BLACKMER	CS70-CL1	Chlorination Sys 1	2.35	2.65
WE70	SIERRA / BLACKMER	CS70-FE1	RFP Enclosure 1	2.80	1.45
WE70	SIERRA / BLACKMER	CS70-FL1	Fluoride Sys 1	2.10	2.65
WE70	SIERRA / BLACKMER	CV70-1	CheckValve 1	1.75	2.25
WE70	SIERRA / BLACKMER	FM70-1	FlowMeter 1	1.80	2.50
WE70	SIERRA / BLACKMER	MC70-1	MotorControlCenter1	2.30	2.40
WE70	SIERRA / BLACKMER	MO70-1	MOTOR 01	2.10	1.80
WE70	SIERRA / BLACKMER	PT70-1	PressureTransducer 1	1.80	1.70
WE70	SIERRA / BLACKMER	PU70-1	PUMP 1	1.50	1.90
WE70	SIERRA / BLACKMER	RT70-1	RemoteTelemetryUnit1	1.55	1.80
WE70	SIERRA / BLACKMER	SW-70	System Well 1	3.20	2.40
WE70	SIERRA / BLACKMER	TA70-1	Tank 1	3.10	3.25
WE70	SIERRA / BLACKMER	VA70-1	Valving 1	2.30	1.80
WE70	SIERRA / BLACKMER	VA70-2	Valving 2	2.30	1.80
WE70	SIERRA / BLACKMER	VA70-3	Valving 3	2.30	1.80
WE71	RODNEY T FRANZ	AR71-1	Air Release Valve 1	2.70	2.20
WE71	RODNEY T FRANZ	AS71	Alarm System 1	1.55	2.00
WE71	RODNEY T FRANZ	BF71-1	Backflow 1	3.00	2.80
WE71	RODNEY T FRANZ	CC71-1	ExFn 1	2.00	2.45
WE71	RODNEY T FRANZ	CS71-CL1	Chlorination Sys 1	2.00	3.40
WE71	RODNEY T FRANZ	CS71-FE1	RFP Enclosure 1	2.80	2.20
WE71	RODNEY T FRANZ	CS71-FL1	Fluoride Sys 1	2.00	3.40
WE71	RODNEY T FRANZ	CV71-1	CheckValve 1	1.55	3.25

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE71	RODNEY T FRANZ	FM71-1	FlowMeter 1	1.80	3.25
WE71	RODNEY T FRANZ	HV71-1	HydraulicValve1	3.10	3.45
WE71	RODNEY T FRANZ	LT71-1	LevelTransducer 1	2.20	2.10
WE71	RODNEY T FRANZ	LT71-2	LevelTransducer 2	1.80	2.10
WE71	RODNEY T FRANZ	MC71-1	MotorControlCenter1	3.05	3.15
WE71	RODNEY T FRANZ	MO71-1	MOTOR 01	3.15	3.25
WE71	RODNEY T FRANZ	PT71-1	PressureTransducer 1	1.55	2.45
WE71	RODNEY T FRANZ	PU71-1	PUMP 1	2.50	2.90
WE71	RODNEY T FRANZ	RT71-1	RemoteTelemetryUnit1	2.30	2.55
WE71	RODNEY T FRANZ	SW-71	System Well 1	3.10	3.15
WE71	RODNEY T FRANZ	VA71-1	Valving 1	1.80	2.55
WE71	RODNEY T FRANZ	VA71-2	Valving 2	1.80	2.55
WE71	RODNEY T FRANZ	VA71-3	Valving 3	1.80	2.55
WE71	RODNEY T FRANZ	VA71-4	Valving 4	1.80	2.55
WE71	RODNEY T FRANZ	VF71	VARIABLE FREQUENCY DRIVE 1	2.30	2.45
WE72	RIVER WALK / NETP	AR72-1	Air Release Valve 1	2.70	1.70
WE72	RIVER WALK / NETP	AR72-2	Air Release Valve 2	2.70	1.70
WE72	RIVER WALK / NETP	AS72	Alarm System 1	1.55	1.50
WE72	RIVER WALK / NETP	BF72-1	Backflow 1	2.80	2.30
WE72	RIVER WALK / NETP	CC72-1	AC Room Unit	2.00	1.95
WE72	RIVER WALK / NETP	CS72-CL1	Chlorination Sys 1	1.80	2.90
WE72	RIVER WALK / NETP	CS72-FE1	RFP Enclosure 1	2.80	1.70
WE72	RIVER WALK / NETP	CS72-FL1	Fluoride Sys 1	1.80	2.90
WE72	RIVER WALK / NETP	CV72-1	CheckValve 1	1.55	2.75
WE72	RIVER WALK / NETP	FM72-1	FlowMeter 1	1.55	2.75
WE72	RIVER WALK / NETP	GE72-1	Generator 1	2.75	2.30
WE72	RIVER WALK / NETP	HV72-1	HydraulicValve1	3.10	2.95
WE72	RIVER WALK / NETP	LT72-1	LevelTransducer 1	1.80	1.60
WE72	RIVER WALK / NETP	MC72-1	MotorControlCenter1	3.05	2.65
WE72	RIVER WALK / NETP	MO72-1	MOTOR 01	2.65	2.75
WE72	RIVER WALK / NETP	PT72-1	PressureTransducer 1	1.55	1.95
WE72	RIVER WALK / NETP	PU72-1	PUMP 1	2.00	2.40
WE72	RIVER WALK / NETP	RT72-1	RemoteTelemetryUnit1	2.30	2.05
WE72	RIVER WALK / NETP	SW-72	System Well 1	2.50	2.65
WE72	RIVER WALK / NETP	TA72-1	Tank 1	2.60	3.50
WE72	RIVER WALK / NETP	VA72-1	Valving 1	1.80	2.05
WE72	RIVER WALK / NETP	VA72-2	Valving 2	1.80	2.05
WE72	RIVER WALK / NETP	VA72-3	Valving 3	1.80	2.05
WE72	RIVER WALK / NETP	VA72-4	Valving 4	1.80	2.05
WE73	RIVER WALK / NETP EAST	AR73-1	Air Release Valve 1	2.70	2.20
WE73	RIVER WALK / NETP EAST	BF73-1	Backflow 1	2.80	2.80
WE73	RIVER WALK / NETP EAST	CS73-CL1	Chlorination Sys 1	1.80	3.40
WE73	RIVER WALK / NETP EAST	CS73-FE1	RFP Enclosure 1	2.80	2.20
WE73	RIVER WALK / NETP EAST	CS73-FE2	RFP Enclosure 2	2.80	2.20
WE73	RIVER WALK / NETP EAST	CS73-FL1	Fluoride Sys 1	1.80	3.40
WE73	RIVER WALK / NETP EAST	CV73-1	CheckValve 1	1.55	3.25
WE73	RIVER WALK / NETP EAST	FM73-1	FlowMeter 1	1.80	3.25
WE73	RIVER WALK / NETP EAST	HV73-1	HydraulicValve1	3.10	3.45
WE73	RIVER WALK / NETP EAST	LT73-1	LevelTransducer 1	3.00	2.10
WE73	RIVER WALK / NETP EAST	LT73-2	LevelTransducer 2	2.80	2.10
WE73	RIVER WALK / NETP EAST	MC73-1	MotorControlCenter1	3.05	3.15
WE73	RIVER WALK / NETP EAST	MO73-1	MOTOR 01	2.65	3.25
WE73	RIVER WALK / NETP EAST	PT73-1	PressureTransducer 1	1.95	2.45
WE73	RIVER WALK / NETP EAST	PU73-1	PUMP 1	1.75	2.90
WE73	RIVER WALK / NETP EAST	RT73-1	RemoteTelemetryUnit1	2.30	2.55
WE73	RIVER WALK / NETP EAST	SW-73	System Well 1	2.90	3.15
WE73	RIVER WALK / NETP EAST	VA73-1	Valving 1	1.80	2.55
WE73	RIVER WALK / NETP EAST	VA73-2	Valving 2	1.80	2.55
WE73	RIVER WALK / NETP EAST	VA73-3	Valving 3	1.80	2.55
WE73	RIVER WALK / NETP EAST	VA73-4	Valving 4	1.80	2.55
WE74	RIVER WALK / NETP SOUTH	AR74-1	Air Release Valve 1	2.70	2.20
WE74	RIVER WALK / NETP SOUTH	BF74-1	Backflow 1	2.80	2.80
WE74	RIVER WALK / NETP SOUTH	CS74-CL1	Chlorination Sys 1	1.80	3.40
WE74	RIVER WALK / NETP SOUTH	CS74-FE1	RFP Enclosure 1	2.80	2.20
WE74	RIVER WALK / NETP SOUTH	CS74-FE2	RFP Enclosure 2	2.80	2.20
WE74	RIVER WALK / NETP SOUTH	CS74-FL1	Fluoride Sys 1	1.80	3.40

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WE74	RIVER WALK / NETP SOUTH	CV74-1	CheckValve 1	1.55	3.25
WE74	RIVER WALK / NETP SOUTH	FM74-1	FlowMeter 1	1.80	3.25
WE74	RIVER WALK / NETP SOUTH	HV74-1	HydraulicValve1	3.10	3.45
WE74	RIVER WALK / NETP SOUTH	LT74-1	LevelTransducer 1	2.00	2.10
WE74	RIVER WALK / NETP SOUTH	LT74-2	LevelTransducer 2	1.80	2.10
WE74	RIVER WALK / NETP SOUTH	MC74-1	MotorControlCenter1	3.05	3.15
WE74	RIVER WALK / NETP SOUTH	MO74-1	MOTOR 01	3.15	3.25
WE74	RIVER WALK / NETP SOUTH	PT74-1	PressureTransducer 1	1.55	2.45
WE74	RIVER WALK / NETP SOUTH	PU74-1	PUMP 1	2.50	2.90
WE74	RIVER WALK / NETP SOUTH	RT74-1	RemoteTelemetryUnit1	2.30	2.55
WE74	RIVER WALK / NETP SOUTH	SW-74	System Well 1	2.50	3.15
WE74	RIVER WALK / NETP SOUTH	VA74-1	Valving 1	1.80	2.55
WE74	RIVER WALK / NETP SOUTH	VA74-2	Valving 2	1.80	2.55
WE74	RIVER WALK / NETP SOUTH	VA74-3	Valving 3	1.80	2.55
WE74	RIVER WALK / NETP SOUTH	VA74-4	Valving 4	1.80	2.55
WE76	FULTON / FAIR OAKS	AR76-1	Air Release Valve 1	2.90	1.20
WE76	FULTON / FAIR OAKS	CS76-CL1	Chlorination Sys 1	3.10	2.40
WE76	FULTON / FAIR OAKS	CS76-FE1	RFP Enclosure 1	2.80	1.20
WE76	FULTON / FAIR OAKS	CV76-1	CheckValve 1	2.55	2.00
WE76	FULTON / FAIR OAKS	FM76-1	FlowMeter 1	1.80	2.25
WE76	FULTON / FAIR OAKS	HV76-1	HydraulicValve1	2.30	2.20
WE76	FULTON / FAIR OAKS	LT76-1	LevelTransducer 1	2.30	1.10
WE76	FULTON / FAIR OAKS	MC76-1	MotorControlCenter1	2.30	2.15
WE76	FULTON / FAIR OAKS	MO76-1	MOTOR 01	3.30	2.25
WE76	FULTON / FAIR OAKS	PT76-1	PressureTransducer 1	2.55	1.45
WE76	FULTON / FAIR OAKS	PU76-1	PUMP 1	2.50	1.65
WE76	FULTON / FAIR OAKS	RT76-1	RemoteTelemetryUnit1	1.55	1.55
WE76	FULTON / FAIR OAKS	SW-76	System Well 1	3.40	2.15
WE76	FULTON / FAIR OAKS	VA76-1	Valving 1	2.30	1.55
WE76	FULTON / FAIR OAKS	VA76-2	Valving 2	2.30	1.55
WE76	FULTON / FAIR OAKS	VA76-3	Valving 3	2.30	1.55
WE76	FULTON / FAIR OAKS	VA76-4	Valving 4	2.30	1.55
WE77	LARCH / NORTHROP	AR77-1	Air Release Valve 1	2.40	1.20
WE77	LARCH / NORTHROP	AR77-2	Air Release Valve 2	2.40	1.20
WE77	LARCH / NORTHROP	CS77-CL1	Chlorination Sys 1	3.10	2.40
WE77	LARCH / NORTHROP	CS77-FE1	RFP Enclosure 1	2.80	1.20
WE77	LARCH / NORTHROP	CV77-1	CheckValve 1	1.80	2.00
WE77	LARCH / NORTHROP	FM77-1	FlowMeter 1	1.80	2.25
WE77	LARCH / NORTHROP	MC77-1	MotorControlCenter1	3.30	2.35
WE77	LARCH / NORTHROP	MO77-1	MOTOR 01	3.10	2.25
WE77	LARCH / NORTHROP	PT77-1	PressureTransducer 1	2.55	1.45
WE77	LARCH / NORTHROP	PU77-1	PUMP 1	2.50	1.65
WE77	LARCH / NORTHROP	RT77-1	RemoteTelemetryUnit1	1.55	1.55
WE77	LARCH / NORTHROP	SW-77	System Well 1	3.00	2.15
WE77	LARCH / NORTHROP	TA77-1	Tank 1	3.55	3.00
WE77	LARCH / NORTHROP	VA77-1	Valving 1	2.30	1.55
WE77	LARCH / NORTHROP	VA77-2	Valving 2	2.30	1.55
WE77	LARCH / NORTHROP	VA77-3	Valving 3	2.30	1.55
WE9	RAVENWOOD / EASTERN	AR9-1	Air Release Valve 1	2.45	1.45
WE9	RAVENWOOD / EASTERN	CS9-CL1	Chlorination Sys 1	2.00	2.65
WE9	RAVENWOOD / EASTERN	CS9-FE1	RFP Enclosure 1	2.80	1.45
WE9	RAVENWOOD / EASTERN	CS9-FL1	Fluoride Sys 1	2.00	2.65
WE9	RAVENWOOD / EASTERN	CV9-1	CheckValve 1	2.05	2.25
WE9	RAVENWOOD / EASTERN	FM9-1	FlowMeter 1	1.80	2.50
WE9	RAVENWOOD / EASTERN	HV9-1	HydraulicValve1	3.10	2.45
WE9	RAVENWOOD / EASTERN	LT9-1	LevelTransducer 1	2.80	1.35
WE9	RAVENWOOD / EASTERN	MC9-1	MotorControlCenter1	2.55	2.60
WE9	RAVENWOOD / EASTERN	MO9-1	MOTOR 01	2.65	2.50
WE9	RAVENWOOD / EASTERN	PT9-1	PressureTransducer 1	1.55	1.90
WE9	RAVENWOOD / EASTERN	PU9-1	PUMP 1	1.75	1.90
WE9	RAVENWOOD / EASTERN	RT9-1	RemoteTelemetryUnit1	2.40	2.00
WE9	RAVENWOOD / EASTERN	SW-9	System Well 1	3.85	2.80
WE9	RAVENWOOD / EASTERN	VA9-1	Valving 1	2.30	2.00
WE9	RAVENWOOD / EASTERN	VA9-2	Valving 2	2.30	2.00
WE9	RAVENWOOD / EASTERN	VA9-3	Valving 3	2.30	2.00
WE9	RAVENWOOD / EASTERN	VA9-4	Valving 4	2.30	2.00

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WEMC10	McCLELLAN	ARMC10-1	Air Release Valve 1	2.40	1.45
WEMC10	McCLELLAN	CSMC10-CL1	Chlorination Sys 1	2.00	2.65
WEMC10	McCLELLAN	CVMC10-1	CheckValve 1	2.30	2.25
WEMC10	McCLELLAN	FMMC10-1	FlowMeter 1	1.80	2.50
WEMC10	McCLELLAN	MCMC10-1	MotorControlCenter1	2.75	2.40
WEMC10	McCLELLAN	MOMC10-1	MOTOR 01	3.35	2.50
WEMC10	McCLELLAN	PTMC10-1	PressureTransducer 1	2.05	1.70
WEMC10	McCLELLAN	PUMC10-1	PUMP 1	2.50	1.90
WEMC10	McCLELLAN	RTMC10-1	RemoteTelemetryUnit1	1.80	1.80
WEMC10	McCLELLAN	SUMC10-1	Sump 1	2.40	1.55
WEMC10	McCLELLAN	SW-MC10	System Well 1	3.15	2.40
WEMC10	McCLELLAN	VAMC10-1	Valving 1	2.30	1.80
WEMC-C1	CAPEHART MC-C1	ARMC-C1-1	Air Release Valve 1	2.20	1.20
WEMC-C1	CAPEHART MC-C1	ARMC-C1-2	Air Release Valve 2	2.20	1.20
WEMC-C1	CAPEHART MC-C1	BFMC-C1-1	Backflow 1	1.80	1.80
WEMC-C1	CAPEHART MC-C1	CSMC-C1-CL1	Chlorination Sys 1	1.50	2.40
WEMC-C1	CAPEHART MC-C1	CSMC-C1-FE1	RFP Enclosure 1	2.80	1.20
WEMC-C1	CAPEHART MC-C1	CVMC-C1-1	CheckValve 1	1.55	2.00
WEMC-C1	CAPEHART MC-C1	FMMC-C1-1	FlowMeter 1	1.80	2.25
WEMC-C1	CAPEHART MC-C1	MCMC-C1-1	MotorControlCenter1	3.30	2.35
WEMC-C1	CAPEHART MC-C1	MOMC-C1-1	MOTOR 01	2.85	2.25
WEMC-C1	CAPEHART MC-C1	PTMC-C1-1	PressureTransducer 1	1.55	1.45
WEMC-C1	CAPEHART MC-C1	PUMC-C1-1	PUMP 1	2.50	1.65
WEMC-C1	CAPEHART MC-C1	RTMC-C1-1	RemoteTelemetryUnit1	1.55	1.55
WEMC-C1	CAPEHART MC-C1	SW-MC-C1	System Well 1	2.80	2.15
WEMC-C1	CAPEHART MC-C1	TAMC-C1-1	Tank 1	3.35	3.30
WEMC-C1	CAPEHART MC-C1	VAMC-C1-1	Valving 1	2.30	1.55
WEMC-C1	CAPEHART MC-C1	VAMC-C1-2	Valving 2	2.30	1.55
WEMC-C3	CAPEHART MC-C3	ARMC-C3-1	Air Release Valve 1	3.20	1.20
WEMC-C3	CAPEHART MC-C3	CSMC-C3-CL1	Chlorination Sys 1	2.50	2.40
WEMC-C3	CAPEHART MC-C3	CSMC-C3-FE1	RFP Enclosure 1	2.80	1.20
WEMC-C3	CAPEHART MC-C3	CVMC-C3-1	CheckValve 1	2.55	2.00
WEMC-C3	CAPEHART MC-C3	FMMC-C3-1	FlowMeter 1	1.80	2.25
WEMC-C3	CAPEHART MC-C3	MCMC-C3-1	MotorControlCenter1	2.55	2.15
WEMC-C3	CAPEHART MC-C3	MOMC-C3-1	MOTOR 01	2.85	2.25
WEMC-C3	CAPEHART MC-C3	PTMC-C3-1	PressureTransducer 1	2.55	1.45
WEMC-C3	CAPEHART MC-C3	PUMC-C3-1	PUMP 1	2.50	1.65
WEMC-C3	CAPEHART MC-C3	RTMC-C3-1	RemoteTelemetryUnit1	1.55	1.55
WEMC-C3	CAPEHART MC-C3	SW-MC-C3	System Well 1	2.80	2.15
WEMC-C3	CAPEHART MC-C3	VAMC-C3-1	Valving 1	2.30	1.55
WEMC-C3	CAPEHART MC-C3	VAMC-C3-2	Valving 2	2.30	1.55
WEMC-C3	CAPEHART MC-C3	VAMC-C3-3	Valving 3	2.30	1.55
WEMC-C3	CAPEHART MC-C3	VAMC-C3-4	Valving 4	2.30	1.55
WEN1	EVERGREEN	ARN1-1	Air Release Valve 1	1.90	1.70
WEN1	EVERGREEN	CSN1-CL1	Chlorination Sys 1	1.75	2.90
WEN1	EVERGREEN	CSN1-FE1	RFP Enclosure 1	2.80	1.70
WEN1	EVERGREEN	CVN1-1	CheckValve 1	1.55	2.75
WEN1	EVERGREEN	FMN1-1	FlowMeter 1	1.80	2.75
WEN1	EVERGREEN	HVN1-1	HydraulicValve1	2.25	2.95
WEN1	EVERGREEN	MCN1-1	MotorControlCenter1	2.30	2.65
WEN1	EVERGREEN	MON1-1	MOTOR 01	2.90	2.75
WEN1	EVERGREEN	PTN1-1	PressureTransducer 1	1.80	1.95
WEN1	EVERGREEN	PUN1-1	PUMP 1	2.50	2.40
WEN1	EVERGREEN	RTN1-1	RemoteTelemetryUnit1	1.55	2.05
WEN1	EVERGREEN	SW-N01	System Well 1	2.80	2.65
WEN1	EVERGREEN	VAN1-1	Valving 1	2.30	2.05
WEN1	EVERGREEN	VAN1-2	Valving 2	2.30	2.05
WEN1	EVERGREEN	VAN1-3	Valving 3	2.30	2.05
WEN10	WALNUT	ARN10-1	Air Release Valve 1	2.65	1.70
WEN10	WALNUT	CCN10-1	AC	2.25	1.95
WEN10	WALNUT	CSN10-CL1	Chlorination Sys 1	2.00	2.90
WEN10	WALNUT	CVN10-1	CheckValve 1	2.30	2.75
WEN10	WALNUT	FMN10-1	FlowMeter 1	1.80	2.75
WEN10	WALNUT	GEN10-1	Generator 1	3.05	2.30
WEN10	WALNUT	HVN10-1	HydraulicValve1	1.75	2.95
WEN10	WALNUT	LTN10-1	LevelTransducer 1	2.80	1.60

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WEN10	WALNUT	MCN10-1	MotorControlCenter1	3.30	2.65
WEN10	WALNUT	MON10-1	MOTOR 01	2.40	2.05
WEN10	WALNUT	PTN10-1	PressureTransducer 1	2.25	1.95
WEN10	WALNUT	PUN10-1	PUMP 1	1.50	2.40
WEN10	WALNUT	RTN10-1	RemoteTelemetryUnit1	2.55	2.05
WEN10	WALNUT	SW-N10	System Well 1	3.20	2.65
WEN10	WALNUT	VAN10-1	Valving 1	2.30	2.05
WEN10	WALNUT	VAN10-2	Valving 2	2.30	2.05
WEN10	WALNUT	VFN10	VARIABLE FREQUENCY DRIVE 1	2.55	1.95
WEN12	ST JOHNS	ARN12-1	Air Release Valve 1	1.75	1.70
WEN12	ST JOHNS	CSN12-CL1	Chlorination Sys 1	1.75	2.90
WEN12	ST JOHNS	CSN12-FE1	RFP Enclosure 1	2.50	1.70
WEN12	ST JOHNS	CVN12-1	CheckValve 1	1.75	2.75
WEN12	ST JOHNS	FMN12-1	FlowMeter 1	1.50	2.75
WEN12	ST JOHNS	HVN12-1	HydraulicValve1	1.75	2.95
WEN12	ST JOHNS	MCN12-1	MotorControlCenter1	2.50	2.65
WEN12	ST JOHNS	MON12-1	MOTOR 01	2.35	2.75
WEN12	ST JOHNS	PTN12-1	PressureTransducer 1	1.50	1.95
WEN12	ST JOHNS	PUN12-1	PUMP 1	2.25	2.40
WEN12	ST JOHNS	RTN12-1	RemoteTelemetryUnit1	1.75	2.05
WEN12	ST JOHNS	SW-N12	System Well 1	2.50	2.65
WEN12	ST JOHNS	VAN12-1	Valving 1	2.00	2.05
WEN12	ST JOHNS	VAN12-2	Valving 2	2.00	2.05
WEN12	ST JOHNS	VAN12-3	Valving 3	2.00	2.05
WEN14	ORANGE GROVE	ARN14-1	Air Release Valve 1	2.40	1.45
WEN14	ORANGE GROVE	CSN14-CL1	Chlorination Sys 1	1.50	2.65
WEN14	ORANGE GROVE	CSN14-FE1	RFP Enclosure 1	2.80	1.45
WEN14	ORANGE GROVE	CVN14-1	CheckValve 1	2.05	2.25
WEN14	ORANGE GROVE	FMN14-1	FlowMeter 1	1.80	2.50
WEN14	ORANGE GROVE	HVN14-1	HydraulicValve1	1.95	2.45
WEN14	ORANGE GROVE	MCN14-1	MotorControlCenter1	3.30	2.60
WEN14	ORANGE GROVE	MON14-1	MOTOR 01	2.90	2.50
WEN14	ORANGE GROVE	PTN14-1	PressureTransducer 1	1.55	1.70
WEN14	ORANGE GROVE	PUN14-1	PUMP 1	2.50	1.90
WEN14	ORANGE GROVE	RTN14-1	RemoteTelemetryUnit1	1.55	1.80
WEN14	ORANGE GROVE	SW-N14	System Well 1	3.00	2.40
WEN14	ORANGE GROVE	VAN14-1	Valving 1	2.30	1.80
WEN14	ORANGE GROVE	VAN14-2	Valving 2	2.30	1.80
WEN14	ORANGE GROVE	VAN14-3	Valving 3	2.30	1.80
WEN17	OAKDALE	ARN17-1	Air Release Valve 1	2.60	1.70
WEN17	OAKDALE	CSN17-CL1	Chlorination Sys 1	2.25	2.90
WEN17	OAKDALE	CSN17-FE1	RFP Enclosure 1	2.80	1.70
WEN17	OAKDALE	CVN17-1	CheckValve 1	1.80	2.75
WEN17	OAKDALE	FMN17-1	FlowMeter 1	1.80	2.75
WEN17	OAKDALE	GEN17-1	Generator 1	2.95	2.30
WEN17	OAKDALE	MCN17-1	MotorControlCenter1	2.55	2.65
WEN17	OAKDALE	MON17-1	MOTOR 01	2.40	2.75
WEN17	OAKDALE	PTN17-1	PressureTransducer 1	2.30	1.95
WEN17	OAKDALE	PUN17-1	PUMP 1	1.50	2.40
WEN17	OAKDALE	RTN17-1	RemoteTelemetryUnit1	1.80	2.05
WEN17	OAKDALE	SW-N17	System Well 1	3.15	2.65
WEN17	OAKDALE	TAN17-1	Tank 1	2.55	3.50
WEN17	OAKDALE	VAN17-1	Valving 1	2.30	2.05
WEN17	OAKDALE	VAN17-2	Valving 2	2.30	2.05
WEN20	CYPRESS	ARN20-1	Air Release Valve 1	1.50	1.70
WEN20	CYPRESS	CSN20-CL1	Chlorination Sys 1	2.00	2.90
WEN20	CYPRESS	CVN20-1	CheckValve 1	1.50	2.75
WEN20	CYPRESS	FMN20-1	FlowMeter 1	1.75	2.75
WEN20	CYPRESS	HVN20-1	HydraulicValve1	2.50	2.95
WEN20	CYPRESS	MCN20-1	MotorControlCenter1	3.00	2.85
WEN20	CYPRESS	MON20-1	MOTOR 01	2.30	2.75
WEN20	CYPRESS	PTN20-1	PressureTransducer 1	1.75	1.95
WEN20	CYPRESS	PUN20-1	PUMP 1	1.50	2.40
WEN20	CYPRESS	SW-N20	System Well 1	2.60	2.65
WEN20	CYPRESS	VAN20-1	Valving 1	2.00	2.05
WEN20	CYPRESS	VAN20-2	Valving 2	2.00	2.05

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WEN20	CYPRESS	VAN20-3	Valving 3	2.00	2.05
WEN22	RIVER COLLEGE	ARN22-1	Air Release Valve 1	2.40	1.45
WEN22	RIVER COLLEGE	ARN22-2	Air Release Valve 2	2.40	1.45
WEN22	RIVER COLLEGE	CSN22-CL1	Chlorination Sys 1	2.00	2.65
WEN22	RIVER COLLEGE	CSN22-FE1	RFP Enclosure 1	2.80	1.45
WEN22	RIVER COLLEGE	CVN22-1	CheckValve 1	1.80	2.25
WEN22	RIVER COLLEGE	FMN22-1	FlowMeter 1	1.80	2.50
WEN22	RIVER COLLEGE	MCN22-1	MotorControlCenter1	2.80	2.40
WEN22	RIVER COLLEGE	MON22-1	MOTOR 01	2.90	2.50
WEN22	RIVER COLLEGE	PTN22-1	PressureTransducer 1	2.05	1.70
WEN22	RIVER COLLEGE	PUN22-1	PUMP 1	2.50	1.90
WEN22	RIVER COLLEGE	RTN22-1	RemoteTelemetryUnit1	2.05	1.80
WEN22	RIVER COLLEGE	SW-N22	System Well 1	3.15	2.40
WEN22	RIVER COLLEGE	TAN22-1	Tank 1	3.55	3.25
WEN22	RIVER COLLEGE	VAN22-1	Valving 1	2.50	1.80
WEN22	RIVER COLLEGE	VAN22-2	Valving 2	2.50	1.80
WEN23A	FREEWAY	ARN23A-1	Air Release Valve 1	1.25	1.70
WEN23A	FREEWAY	CSN23A-CL1	Chlorination Sys 1	2.50	2.90
WEN23A	FREEWAY	CSN23A-FE1	RFP Enclosure 1	2.50	1.70
WEN23A	FREEWAY	CVN23A-1	CheckValve 1	1.50	2.75
WEN23A	FREEWAY	FMN23A-1	FlowMeter 1	1.75	2.75
WEN23A	FREEWAY	GEN23A-1	Generator 1	2.65	2.30
WEN23A	FREEWAY	HVN23A-1	HydraulicValve1	2.00	2.95
WEN23A	FREEWAY	LTN23A-1	LevelTransducer 1	2.50	1.60
WEN23A	FREEWAY	MCN23A-1	MotorControlCenter1	2.25	2.65
WEN23A	FREEWAY	MON23A-1	MOTOR 01	1.75	2.75
WEN23A	FREEWAY	PTN23A-1	PressureTransducer 1	2.25	1.95
WEN23A	FREEWAY	PUN23A-1	PUMP 1	1.75	2.40
WEN23A	FREEWAY	RTN23A-1	RemoteTelemetryUnit1	2.30	2.05
WEN23A	FREEWAY	SW-N23A	System Well 1	2.55	2.65
WEN23A	FREEWAY	VAN23A-1	Valving 1	1.25	2.05
WEN23A	FREEWAY	VAN23A-2	Valving 2	1.25	2.05
WEN23A	FREEWAY	VAN23A-3	Valving 3	1.25	2.05
WEN23A	FREEWAY	VAN23A-4	Valving 4	1.25	2.05
WEN23A	FREEWAY	VAN23A-5	Valving 5	1.25	2.05
WEN24	DON JULIO	ARN24-1	Air Release Valve 1	2.45	1.70
WEN24	DON JULIO	ARN24-2	Air Release Valve 2	2.45	1.70
WEN24	DON JULIO	CSN24-CL1	Chlorination Sys 1	1.95	2.90
WEN24	DON JULIO	CSN24-FE1	RFP Enclosure 1	2.80	1.70
WEN24	DON JULIO	CVN24-1	CheckValve 1	1.55	2.75
WEN24	DON JULIO	FMN24-1	FlowMeter 1	1.80	2.75
WEN24	DON JULIO	MCN24-1	MotorControlCenter1	3.30	2.85
WEN24	DON JULIO	MON24-1	MOTOR 01	2.35	2.75
WEN24	DON JULIO	PTN24-1	PressureTransducer 1	1.80	1.95
WEN24	DON JULIO	PUN24-1	PUMP 1	2.50	2.40
WEN24	DON JULIO	RTN24-1	RemoteTelemetryUnit1	1.80	2.05
WEN24	DON JULIO	SW-N24	System Well 1	2.95	2.65
WEN24	DON JULIO	TAN24-1	Tank 1	3.10	3.50
WEN24	DON JULIO	VAN24-1	Valving 1	2.30	2.05
WEN24	DON JULIO	VAN24-2	Valving 2	2.30	2.05
WEN25	SUTTER	ARN25-1	Air Release Valve 1	2.45	1.95
WEN25	SUTTER	BFN25-1	Backflow 1	2.05	2.55
WEN25	SUTTER	CSN25-CL1	Chlorination Sys 1	1.95	3.15
WEN25	SUTTER	CSN25-FE1	RFP Enclosure 1	2.80	1.95
WEN25	SUTTER	CVN25-1	CheckValve 1	1.55	3.00
WEN25	SUTTER	FMN25-1	FlowMeter 1	1.80	3.00
WEN25	SUTTER	HVN25-1	HydraulicValve1	2.70	3.20
WEN25	SUTTER	MCN25-1	MotorControlCenter1	2.30	2.90
WEN25	SUTTER	MON25-1	MOTOR 01	2.60	3.00
WEN25	SUTTER	PTN25-1	PressureTransducer 1	1.80	2.20
WEN25	SUTTER	PUN25-1	PUMP 1	2.50	2.65
WEN25	SUTTER	RTN25-1	RemoteTelemetryUnit1	1.55	2.30
WEN25	SUTTER	SW-N25	System Well 1	2.95	2.90
WEN25	SUTTER	VAN25-1	Valving 1	2.30	2.30
WEN25	SUTTER	VAN25-2	Valving 2	2.30	2.30
WEN25	SUTTER	VAN25-3	Valving 3	2.30	2.30

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WEN25	SUTTER	VFN25	VARIABLE FREQUENCY DRIVE 1	3.05	2.20
WEN26	MONUMENT	ARN26-1	Air Release Valve 1	2.20	1.45
WEN26	MONUMENT	CSN26-CL1	Chlorination Sys 1	2.00	2.65
WEN26	MONUMENT	CVN26-1	CheckValve 1	2.30	2.25
WEN26	MONUMENT	FMN26-1	FlowMeter 1	1.80	2.50
WEN26	MONUMENT	HVN26-1	HydraulicValve1	2.00	2.45
WEN26	MONUMENT	MCN26-1	MotorControlCenter1	3.30	2.80
WEN26	MONUMENT	MON26-1	MOTOR 01	2.10	1.80
WEN26	MONUMENT	PTN26-1	PressureTransducer 1	2.05	1.70
WEN26	MONUMENT	PUN26-1	PUMP 1	1.75	2.10
WEN26	MONUMENT	RTN26-1	RemoteTelemetryUnit1	1.80	2.00
WEN26	MONUMENT	SW-N26	System Well 1	2.05	2.80
WEN26	MONUMENT	VAN26-1	Valving 1	2.30	1.80
WEN26	MONUMENT	VAN26-2	Valving 2	2.30	1.80
WEN26	MONUMENT	VAN26-3	Valving 3	2.30	1.80
WEN29	MERRIHILL	ARN29-1	Air Release Valve 1	1.00	1.45
WEN29	MERRIHILL	CSN29-CL1	Chlorination Sys 1	1.75	2.65
WEN29	MERRIHILL	CSN29-FE1	RFP Enclosure 1	2.50	1.45
WEN29	MERRIHILL	CVN29-1	CheckValve 1	1.25	2.25
WEN29	MERRIHILL	FMN29-1	FlowMeter 1	1.50	2.50
WEN29	MERRIHILL	GEN29-1	Generator 1	2.65	1.80
WEN29	MERRIHILL	HVN29-1	HydraulicValve1	2.25	2.45
WEN29	MERRIHILL	MCN29-1	MotorControlCenter1	2.25	2.40
WEN29	MERRIHILL	MON29-1	MOTOR 01	2.35	2.50
WEN29	MERRIHILL	PTN29-1	PressureTransducer 1	1.50	1.70
WEN29	MERRIHILL	PUN29-1	PUMP 1	2.00	1.90
WEN29	MERRIHILL	RTN29-1	RemoteTelemetryUnit1	1.75	1.80
WEN29	MERRIHILL	SW-N29	System Well 1	2.90	2.40
WEN29	MERRIHILL	VAN29-1	Valving 1	2.00	1.80
WEN29	MERRIHILL	VAN29-2	Valving 2	2.00	1.80
WEN29	MERRIHILL	VAN29-3	Valving 3	2.00	1.80
WEN3	ENGLE	ARN3-1	Air Release Valve 1	2.60	1.45
WEN3	ENGLE	ARN3-2	Air Release Valve 2	2.40	1.45
WEN3	ENGLE	CSN3-CL1	Chlorination Sys 1	2.25	2.65
WEN3	ENGLE	CSN3-FE1	RFP Enclosure 1	2.80	1.45
WEN3	ENGLE	CVN3-1	CheckValve 1	2.55	2.25
WEN3	ENGLE	FMN3-1	FlowMeter 1	1.80	2.50
WEN3	ENGLE	MCN3-1	MotorControlCenter1	2.80	2.40
WEN3	ENGLE	MON3-1	MOTOR 01	2.65	2.50
WEN3	ENGLE	PTN3-1	PressureTransducer 1	2.30	1.70
WEN3	ENGLE	PUN3-1	PUMP 1	2.50	1.90
WEN3	ENGLE	RTN3-1	RemoteTelemetryUnit1	2.25	1.80
WEN3	ENGLE	SW-N03	System Well 1	3.40	2.40
WEN3	ENGLE	TAN3-1	Tank 1	3.75	3.55
WEN3	ENGLE	VAN3-1	Valving 1	2.30	1.80
WEN3	ENGLE	VAN3-2	Valving 2	2.50	1.80
WEN30	PARK OAKS	ARN30-1	Air Release Valve 1	1.00	1.45
WEN30	PARK OAKS	CSN30-CL1	Chlorination Sys 1	1.50	2.65
WEN30	PARK OAKS	CSN30-FE1	RFP Enclosure 1	2.50	1.45
WEN30	PARK OAKS	CVN30-1	CheckValve 1	1.25	2.25
WEN30	PARK OAKS	FMN30-1	FlowMeter 1	1.50	2.50
WEN30	PARK OAKS	HVN30-1	HydraulicValve1	2.00	2.45
WEN30	PARK OAKS	MCN30-1	MotorControlCenter1	2.50	2.40
WEN30	PARK OAKS	MON30-1	MOTOR 01	2.55	1.80
WEN30	PARK OAKS	PTN30-1	PressureTransducer 1	1.25	1.70
WEN30	PARK OAKS	PUN30-1	PUMP 1	2.00	1.90
WEN30	PARK OAKS	RTN30-1	RemoteTelemetryUnit1	1.95	1.80
WEN30	PARK OAKS	SW-N30	System Well 1	2.90	2.40
WEN30	PARK OAKS	VAN30-1	Valving 1	2.00	1.80
WEN30	PARK OAKS	VAN30-2	Valving 2	2.00	1.80
WEN30	PARK OAKS	VAN30-3	Valving 3	2.00	1.80
WEN32A	POKER A	ARN32A-1	Air Release Valve 1	2.20	1.95
WEN32A	POKER A	ASN32A	Alarm System 1	1.30	1.75
WEN32A	POKER A	BFN32A-1	Backflow 1	2.80	2.55
WEN32A	POKER A	CCN32A-1	AC	1.75	2.20
WEN32A	POKER A	CSN32A-CL1	Chlorination Sys 1	1.50	3.15

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WEN32A	POKER A	CVN32A-1	CheckValve 1	2.05	3.00
WEN32A	POKER A	FMN32A-1	FlowMeter 1	1.80	3.00
WEN32A	POKER A	GEN32A-1	Generator 1	3.25	2.55
WEN32A	POKER A	HVN32A-1	HydraulicValve1	1.75	3.20
WEN32A	POKER A	MCN32A-1	MotorControlCenter1	3.30	3.30
WEN32A	POKER A	MON32A-1	MOTOR 01	2.35	2.30
WEN32A	POKER A	PTN32A-1	PressureTransducer 1	1.55	2.40
WEN32A	POKER A	PUN32A-1	PUMP 1	2.00	2.65
WEN32A	POKER A	RTN32A-1	RemoteTelemetryUnit1	2.55	2.50
WEN32A	POKER A	SW-N32A	System Well 1	2.95	3.10
WEN32A	POKER A	VAN32A-1	Valving 1	2.05	2.50
WEN32A	POKER A	VAN32A-2	Valving 2	2.05	2.50
WEN32A	POKER A	VFN32A	VARIABLE FREQUENCY DRIVE 1	2.05	2.40
WEN32B	POKER B	ARN32B-1	Air Release Valve 1	2.20	2.20
WEN32B	POKER B	CSN32B-CL1	Chlorination Sys 1	1.50	3.40
WEN32B	POKER B	CVN32B-1	CheckValve 1	2.05	3.25
WEN32B	POKER B	FMN32B-1	FlowMeter 1	1.80	3.25
WEN32B	POKER B	HVN32B-1	HydraulicValve1	1.75	3.45
WEN32B	POKER B	MCN32B-1	MotorControlCenter1	3.30	3.55
WEN32B	POKER B	MON32B-1	MOTOR 01	2.30	2.55
WEN32B	POKER B	PTN32B-1	PressureTransducer 1	1.55	2.65
WEN32B	POKER B	PUN32B-1	PUMP 1	1.75	3.10
WEN32B	POKER B	SW-N32B	System Well 1	2.25	3.35
WEN32B	POKER B	VAN32B-1	Valving 1	2.05	2.75
WEN32B	POKER B	VAN32B-2	Valving 2	2.05	2.75
WEN32B	POKER B	VFN32B	VARIABLE FREQUENCY DRIVE 1	2.05	2.65
WEN32C	POKER C	ARN32C-1	Air Release Valve 1	2.20	1.45
WEN32C	POKER C	CSN32C-CL1	Chlorination Sys 1	1.50	2.65
WEN32C	POKER C	CVN32C-1	CheckValve 1	2.05	2.25
WEN32C	POKER C	FMN32C-1	FlowMeter 1	1.80	2.50
WEN32C	POKER C	HVN32C-1	HydraulicValve1	1.75	2.45
WEN32C	POKER C	LTN32C-1	LevelTransducer 1	2.05	1.35
WEN32C	POKER C	MCN32C-1	MotorControlCenter1	3.30	2.80
WEN32C	POKER C	MON32C-1	MOTOR 01	2.35	1.90
WEN32C	POKER C	PTN32C-1	PressureTransducer 1	1.55	1.90
WEN32C	POKER C	PUN32C-1	PUMP 1	1.75	2.10
WEN32C	POKER C	SW-N32C	System Well 1	2.05	2.60
WEN32C	POKER C	VAN32C-1	Valving 1	2.05	2.00
WEN32C	POKER C	VAN32C-2	Valving 2	2.05	2.00
WEN32C	POKER C	VAN32C-3	Valving 3	2.05	2.00
WEN33	WALERGA	ARN33-1	Air Release Valve 1	2.20	1.20
WEN33	WALERGA	CSN33-CL1	Chlorination Sys 1	2.50	2.40
WEN33	WALERGA	CSN33-FE1	RFP Enclosure 1	2.80	1.20
WEN33	WALERGA	CVN33-1	CheckValve 1	2.05	2.25
WEN33	WALERGA	FMN33-1	FlowMeter 1	1.80	2.25
WEN33	WALERGA	HVN33-1	HydraulicValve1	1.75	2.45
WEN33	WALERGA	LTN33-1	LevelTransducer 1	2.05	1.10
WEN33	WALERGA	MCN33-1	MotorControlCenter1	2.80	2.15
WEN33	WALERGA	MON33-1	MOTOR 01	2.10	1.65
WEN33	WALERGA	PTN33-1	PressureTransducer 1	1.55	1.45
WEN33	WALERGA	PUN33-1	PUMP 1	2.25	1.90
WEN33	WALERGA	RTN33-1	RemoteTelemetryUnit1	2.05	1.55
WEN33	WALERGA	SW-N33	System Well 1	2.30	2.15
WEN33	WALERGA	VAN33-1	Valving 1	2.05	1.55
WEN33	WALERGA	VAN33-2	Valving 2	2.05	1.55
WEN33	WALERGA	VAN33-3	Valving 3	2.05	1.55
WEN34	COTTAGE	ARN34-1	Air Release Valve 1	3.20	1.95
WEN34	COTTAGE	CSN34-CL1	Chlorination Sys 1	2.25	3.15
WEN34	COTTAGE	CSN34-FE1	RFP Enclosure 1	2.80	1.95
WEN34	COTTAGE	CVN34-1	CheckValve 1	1.80	3.00
WEN34	COTTAGE	FMN34-1	FlowMeter 1	1.80	3.00
WEN34	COTTAGE	HVN34-1	HydraulicValve1	1.75	3.20
WEN34	COTTAGE	MCN34-1	MotorControlCenter1	3.30	2.90
WEN34	COTTAGE	MON34-1	MOTOR 01	2.10	2.30
WEN34	COTTAGE	PTN34-1	PressureTransducer 1	2.30	2.20
WEN34	COTTAGE	PUN34-1	PUMP 1	1.50	2.65

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WEN34	COTTAGE	RTN34-1	RemoteTelemetryUnit1	2.55	2.30
WEN34	COTTAGE	SW-N34	System Well 1	2.50	3.10
WEN34	COTTAGE	VAN34-1	Valving 1	2.05	2.30
WEN34	COTTAGE	VAN34-2	Valving 2	2.05	2.30
WEN34	COTTAGE	VAN34-3	Valving 3	2.05	2.30
WEN34	COTTAGE	VFN34	VARIABLE FREQUENCY DRIVE 1	2.80	2.20
WEN35	ANTELOPE NORTH	ARN35-1	Air Release Valve 1	2.70	2.20
WEN35	ANTELOPE NORTH	ASN35	Alarm System 1	1.55	2.00
WEN35	ANTELOPE NORTH	CCN35-1	AC	2.20	2.45
WEN35	ANTELOPE NORTH	CSN35-CL1	Chlorination Sys 1	2.90	3.40
WEN35	ANTELOPE NORTH	CVN35-1	CheckValve 1	2.55	3.25
WEN35	ANTELOPE NORTH	CVN35-2	CheckValve 2	2.55	3.25
WEN35	ANTELOPE NORTH	FMN35-1	FlowMeter 1	1.80	3.25
WEN35	ANTELOPE NORTH	GEN35-1	Generator 1	2.55	2.80
WEN35	ANTELOPE NORTH	HVN35-1	HydraulicValve1	2.50	3.45
WEN35	ANTELOPE NORTH	LTN35-1	LevelTransducer 1	2.30	2.10
WEN35	ANTELOPE NORTH	MCN35-1	MotorControlCenter1	3.05	3.15
WEN35	ANTELOPE NORTH	PTN35-1	PressureTransducer 1	2.55	2.45
WEN35	ANTELOPE NORTH	PUN35-1	PUMP 1	2.50	2.90
WEN35	ANTELOPE NORTH	RTN35-1	RemoteTelemetryUnit1	2.30	2.55
WEN35	ANTELOPE NORTH	SW-N35	System Well 1	2.90	3.35
WEN35	ANTELOPE NORTH	VAN35-1	Valving 1	1.80	2.55
WEN35	ANTELOPE NORTH	VAN35-2	Valving 2	1.80	2.55
WEN35	ANTELOPE NORTH	VAN35-3	Valving 3	1.80	2.55
WEN35	ANTELOPE NORTH	VFN35	VARIABLE FREQUENCY DRIVE 1	2.30	2.45
WEN36	VERNER	ARN36-1	Air Release Valve 1	1.25	1.70
WEN36	VERNER	ASN36	Alarm System 1	1.75	1.50
WEN36	VERNER	BFN36-1	Backflow 1	2.50	2.30
WEN36	VERNER	CAN36-1	ChemicalAnalyzer 1	3.65	1.85
WEN36	VERNER	CCN36-1	Climate Control 1	2.50	1.95
WEN36	VERNER	CSN36-CL1	Chlorination Sys 1	2.50	2.90
WEN36	VERNER	CVN36-1	CheckValve 1	1.75	2.75
WEN36	VERNER	CVN36-2	CheckValve 2	1.75	2.75
WEN36	VERNER	FMN36-1	FlowMeter 1	2.00	2.75
WEN36	VERNER	HVN36-1	HydraulicValve1	2.45	2.95
WEN36	VERNER	LTN36-1	LevelTransducer 1	2.50	1.60
WEN36	VERNER	MCN36-1	MotorControlCenter1	2.50	2.65
WEN36	VERNER	MON36-1	MOTOR 01	2.60	2.05
WEN36	VERNER	PTN36-1	PressureTransducer 1	2.25	1.95
WEN36	VERNER	PUN36-1	PUMP 1	2.00	2.40
WEN36	VERNER	RTN36-1	RemoteTelemetryUnit1	1.75	2.05
WEN36	VERNER	SUN36-1	Sump 1	1.60	1.80
WEN36	VERNER	SW-N36	System Well 1	2.15	2.65
WEN36	VERNER	VAN36-1	Valving 1	1.25	2.05
WEN36	VERNER	VAN36-2	Valving 2	1.25	2.05
WEN36	VERNER	VAN36-3	Valving 3	1.25	2.05
WEN36	VERNER	VFN36	VARIABLE FREQUENCY DRIVE 1	2.50	1.95
WEN38	COYLE	ARN38-1	Air Release Valve 1	1.00	1.70
WEN38	COYLE	ASN38	Alarm System 1	1.25	1.50
WEN38	COYLE	BFN38-1	Backflow 1	2.20	2.30
WEN38	COYLE	CCN38-1	Climate Control 1	2.00	1.95
WEN38	COYLE	CSN38-CL1	Chlorination Sys 1	2.00	2.90
WEN38	COYLE	CVN38-1	CheckValve 1	1.50	2.75
WEN38	COYLE	CVN38-2	CheckValve 2	1.50	2.75
WEN38	COYLE	FMN38-1	FlowMeter 1	1.75	2.75
WEN38	COYLE	GEN38-1	Generator 1	2.25	2.30
WEN38	COYLE	HVN38-1	HydraulicValve1	2.00	2.95
WEN38	COYLE	HVN38-2	HydraulicValve2	2.00	2.95
WEN38	COYLE	LTN38-1	LevelTransducer 1	2.50	1.60
WEN38	COYLE	MCN38-1	MotorControlCenter1	2.25	2.65
WEN38	COYLE	MON38-1	MOTOR 01	2.35	2.05
WEN38	COYLE	PTN38-1	PressureTransducer 1	1.75	1.95
WEN38	COYLE	PUN38-1	PUMP 1	1.75	2.40
WEN38	COYLE	RTN38-1	RemoteTelemetryUnit1	1.50	2.05
WEN38	COYLE	SW-N38	System Well 1	1.95	2.65
WEN38	COYLE	VAN38-1	Valving 1	1.00	2.05

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WEN38	COYLE	VAN38-2	Valving 2	1.00	2.05
WEN38	COYLE	VAN38-3	Valving 3	1.00	2.05
WEN38	COYLE	VAN38-4	Valving 4	1.00	2.05
WEN38	COYLE	VFN38	VARIABLE FREQUENCY DRIVE 1	2.00	1.95
WEN39	RUTLAND	ARN39-1	Air Release Valve 1	1.00	1.95
WEN39	RUTLAND	ARN39-2	Air Release Valve 2	1.00	1.95
WEN39	RUTLAND	ARN39-3	Air Release Valve 3	1.00	1.95
WEN39	RUTLAND	ASN39	Alarm System 1	1.25	1.75
WEN39	RUTLAND	BFN39-1	Backflow 1	1.95	2.55
WEN39	RUTLAND	CAN39-1	ChemicalAnalyzer 1	3.15	2.10
WEN39	RUTLAND	CCN39-1	Climate Control 1	2.00	2.20
WEN39	RUTLAND	CSN39-CL1	Cholrination Sys 1	1.95	3.15
WEN39	RUTLAND	CSN39-DC1	Dechlorination Sys 1	1.75	3.15
WEN39	RUTLAND	CVN39-1	CheckValve 1	1.25	3.00
WEN39	RUTLAND	FMN39-1	FlowMeter 1	1.50	3.00
WEN39	RUTLAND	GEN39-1	Generator 1	2.00	2.55
WEN39	RUTLAND	LTN39-1	LevelTransducer 1	2.00	1.85
WEN39	RUTLAND	MCN39-1	MotorControlCenter1	2.00	2.90
WEN39	RUTLAND	MON39-1	MOTOR 01	2.10	2.30
WEN39	RUTLAND	MVN39-1	MotorOperatedValve 1	2.00	3.10
WEN39	RUTLAND	PTN39-1	PressureTransducer 1	1.50	2.20
WEN39	RUTLAND	PUN39-1	PUMP 1	1.50	2.65
WEN39	RUTLAND	RTN39-1	RemoteTelemetryUnit1	1.25	2.30
WEN39	RUTLAND	SW-N39	System Well 1	2.35	2.90
WEN39	RUTLAND	VAN39-1	Valving 1	1.00	2.30
WEN39	RUTLAND	VFN39	VARIABLE FREQUENCY DRIVE 1	2.00	2.20
WEN5	HILLSDALE	ARN5-1	Air Release Valve 1	2.20	1.45
WEN5	HILLSDALE	CSN5-CL1	Chlorination Sys 1	1.50	2.65
WEN5	HILLSDALE	CSN5-FE1	RFP Enclosure 1	2.80	1.45
WEN5	HILLSDALE	CVN5-1	CheckValve 1	1.55	2.25
WEN5	HILLSDALE	FMN5-1	FlowMeter 1	1.80	2.50
WEN5	HILLSDALE	GEN5-1	Generator 1	2.95	1.80
WEN5	HILLSDALE	HVN5-1	HydraulicValve1	2.80	2.45
WEN5	HILLSDALE	MCN5-1	MotorControlCenter1	3.30	2.40
WEN5	HILLSDALE	MON5-1	MOTOR 01	2.60	1.80
WEN5	HILLSDALE	PTN5-1	PressureTransducer 1	1.55	1.70
WEN5	HILLSDALE	PUN5-1	PUMP 1	2.25	1.90
WEN5	HILLSDALE	RTN5-1	RemoteTelemetryUnit1	2.55	1.80
WEN5	HILLSDALE	SW-N05	System Well 1	3.20	2.40
WEN5	HILLSDALE	VAN5-1	Valving 1	2.30	1.80
WEN5	HILLSDALE	VAN5-2	Valving 2	2.30	1.80
WEN5	HILLSDALE	VAN5-3	Valving 3	2.30	1.80
WEN5	HILLSDALE	VFN5	VARIABLE FREQUENCY DRIVE 1	2.05	1.70
WEN6A	PALM	ARN6A-1	Air Release Valve 1	1.00	1.95
WEN6A	PALM	BFN6A-1	Backflow 1	1.75	2.55
WEN6A	PALM	CAN6A-1	ChemicalAnalyzer 1	1.75	2.10
WEN6A	PALM	CSN6A-CL1	Chlorination Sys 1	1.75	3.15
WEN6A	PALM	CSN6A-FE1	RFP Enclosure 1	1.75	1.95
WEN6A	PALM	CVN6A-1	CheckValve 1	1.25	3.00
WEN6A	PALM	CVN6A-2	CheckValve 2	1.25	3.00
WEN6A	PALM	CVN6A-3	CheckValve 3	1.25	3.00
WEN6A	PALM	CVN6A-4	CheckValve 4	1.25	3.00
WEN6A	PALM	FIN6A-1	Filter 1	2.00	3.25
WEN6A	PALM	FMN6A-1	FlowMeter 1	1.50	3.00
WEN6A	PALM	FMN6A-2	FlowMeter 2	1.50	3.00
WEN6A	PALM	FMN6A-3	FlowMeter 3	1.50	3.00
WEN6A	PALM	FMN6A-4	FlowMeter 4	1.50	3.00
WEN6A	PALM	FMN6A-5	FlowMeter 5	1.50	3.00
WEN6A	PALM	LTN6A-1	LevelTransducer 1	2.00	1.85
WEN6A	PALM	MCN6A-1	MotorControlCenter1	2.00	2.90
WEN6A	PALM	MON6A-1	MOTOR 01	1.50	2.30
WEN6A	PALM	MON6A-2	MOTOR 02	1.50	2.90
WEN6A	PALM	MON6A-3	MOTOR 03	1.50	2.90
WEN6A	PALM	MVN6A-1	MotorOperatedValve 1	2.00	3.10
WEN6A	PALM	MVN6A-10	MotorOperatedValve10	2.00	2.20
WEN6A	PALM	MVN6A-11	MotorOperatedValve11	2.00	2.20

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WEN6A	PALM	MVN6A-12	MotorOperatedValve12	2.00	2.20
WEN6A	PALM	MVN6A-2	MotorOperatedValve 2	2.00	2.20
WEN6A	PALM	MVN6A-3	MotorOperatedValve 3	2.00	2.20
WEN6A	PALM	MVN6A-4	MotorOperatedValve 4	2.00	2.20
WEN6A	PALM	MVN6A-5	MotorOperatedValve 5	2.00	2.20
WEN6A	PALM	MVN6A-6	MotorOperatedValve 6	2.00	2.20
WEN6A	PALM	MVN6A-7	MotorOperatedValve 7	2.00	2.20
WEN6A	PALM	MVN6A-8	MotorOperatedValve 8	2.00	2.20
WEN6A	PALM	MVN6A-9	MotorOperatedValve 9	2.00	2.20
WEN6A	PALM	PTN6A-1	PressureTransducer 1	1.50	2.20
WEN6A	PALM	PUN6A-1	PUMP 1	1.50	2.65
WEN6A	PALM	RTN6A-1	RemoteTelemetryUnit1	1.25	2.30
WEN6A	PALM	SW-N06A	System Well 1	2.00	2.90
WEN6A	PALM	TAN6A-1	Tank 1	1.75	3.75
WEN6A	PALM	VAN6A-1	Valving 1	1.00	2.30
WEN6A	PALM	VAN6A-2	Valving 2	1.00	2.30
WEN6A	PALM	VAN6A-3	Valving 3	1.00	2.30
WEN6A	PALM	VAN6A-4	Valving 4	1.00	2.30
WEN6A	PALM	VAN6A-5	Valving 5	1.00	2.30
WEN6A	PALM	VAN6A-6	Valving 6	1.00	2.30
WEN6A	PALM	VAN6A-7	Valving 7	1.00	2.30
WEN6A	PALM	VFN6A	VARIABLE FREQUENCY DRIVE 1	2.00	2.20
WEN7	ROSEBUD	ARN7-1	Air Release Valve 1	2.00	1.70
WEN7	ROSEBUD	CSN7-CL1	Chlorination Sys 1	2.50	2.90
WEN7	ROSEBUD	CSN7-FE1	RFP Enclosure 1	2.50	1.70
WEN7	ROSEBUD	CVN7-1	CheckValve 1	2.25	2.75
WEN7	ROSEBUD	FMN7-1	FlowMeter 1	1.50	2.75
WEN7	ROSEBUD	HVN7-1	HydraulicValve1	2.20	2.95
WEN7	ROSEBUD	MCN7-1	MotorControlCenter1	2.50	2.65
WEN7	ROSEBUD	MON7-1	MOTOR 01	2.35	2.05
WEN7	ROSEBUD	PTN7-1	PressureTransducer 1	2.25	1.95
WEN7	ROSEBUD	PUN7-1	PUMP 1	2.00	2.40
WEN7	ROSEBUD	RTN7-1	RemoteTelemetryUnit1	1.75	2.05
WEN7	ROSEBUD	SW-N07	System Well 1	2.70	2.65
WEN7	ROSEBUD	VAN7-1	Valving 1	2.00	2.05
WEN7	ROSEBUD	VAN7-2	Valving 2	2.00	2.05
WEN7	ROSEBUD	VAN7-3	Valving 3	2.00	2.05
WEN8	FIELD	ARN8-1	Air Release Valve 1	2.00	1.70
WEN8	FIELD	CSN8-CL1	Chlorination Sys 1	2.50	2.90
WEN8	FIELD	CSN8-FE1	RFP Enclosure 1	2.50	1.70
WEN8	FIELD	CVN8-1	CheckValve 1	2.25	2.75
WEN8	FIELD	FMN8-1	FlowMeter 1	1.50	2.75
WEN8	FIELD	HVN8-1	HydraulicValve1	2.00	2.95
WEN8	FIELD	MCN8-1	MotorControlCenter1	2.20	2.65
WEN8	FIELD	MON8-1	MOTOR 01	2.60	2.75
WEN8	FIELD	PTN8-1	PressureTransducer 1	2.25	1.95
WEN8	FIELD	PUN8-1	PUMP 1	1.50	2.40
WEN8	FIELD	RTN8-1	RemoteTelemetryUnit1	1.25	2.05
WEN8	FIELD	SW-N08	System Well 1	2.70	2.65
WEN8	FIELD	VAN8-1	Valving 1	2.00	2.05
WEN8	FIELD	VAN8-2	Valving 2	2.00	2.05
WEN8	FIELD	VAN8-3	Valving 3	2.00	2.05
WEN9	CAMERON	ARN9-1	Air Release Valve 1	1.75	1.70
WEN9	CAMERON	ARN9-2	Air Release Valve 2	1.75	1.70
WEN9	CAMERON	ARN9-3	Air Release Valve 3	1.75	1.70
WEN9	CAMERON	ARN9-4	Air Release Valve 4	1.75	1.70
WEN9	CAMERON	CSN9-CL1	Chlorination Sys 1	2.20	2.90
WEN9	CAMERON	CSN9-FE1	RFP Enclosure 1	2.50	1.70
WEN9	CAMERON	CVN9-1	CheckValve 1	2.00	2.75
WEN9	CAMERON	FMN9-1	FlowMeter 1	1.50	2.75
WEN9	CAMERON	MCN9-1	MotorControlCenter1	2.65	2.65
WEN9	CAMERON	MON9-1	MOTOR 01	2.60	2.05
WEN9	CAMERON	PTN9-1	PressureTransducer 1	1.75	1.95
WEN9	CAMERON	PUN9-1	PUMP 1	2.25	2.40
WEN9	CAMERON	RTN9-1	RemoteTelemetryUnit1	1.90	2.05
WEN9	CAMERON	SW-N09	System Well 1	3.05	2.65

Well	Name	Equipment ID	Label	Likelihood of Failure	Consequence of Failure
WEN9	CAMERON	TAN9-1	Tank 1	3.55	3.80
WEN9	CAMERON	VAN9-1	Valving 1	2.00	2.05
WEN9	CAMERON	VAN9-2	Valving 2	2.00	2.05

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Appendix C: Visual Condition Assessment Guidelines

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Visual Condition Assessment Guidelines

Prepared for
Sacramento Suburban Water District
July 2020

Table 1. Document Revision History				
Version	Summary	Editor	Date Edited	Description of Changes
0	Initial Draft	BC	June 30, 2020	Initial Draft
1	Draft Final	BC	July 22, 2020	Draft Final

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Section 1

Purpose

The purpose of this document is to provide a reference guide for Sacramento Suburban Water District (SSWD) staff scoring the physical condition of groundwater well assets and objects. This guidance should be used in conjunction with the Groundwater Well Asset Management Plan (GWAMP). Routine inspection is a sensory level inspection of the assets to document the baseline condition of the assets. Table 1-1 provides a summary of the reasons and details for routine inspection

Table 1-1 Routine Inspection Benefit

Reason	Details
Ensure Consistency	• Standardized assessment methodology
Document Asset History	• Physical state and performance of our assets not "in someone's head"
Inform Key Programs	• Maintenance – adjust frequency and priority of PMs • Capital – adjust priority of capital improvements
Avoid Surprises	• Verify results of desktop likelihood of failure scoring • Minimize costly catastrophic failures and emergency repairs • Predict resource needs (maintenance, rehab, renewal)
Cost-Effective "Triage"	• Trigger more detailed assessment and/or follow-up • Understand urgency/timing of corrective actions

Section 2

Visual Condition Assessment Scoring and Criteria

The purpose of this section is to summarize the guidelines for conducting a Visual Condition Assessment for mechanical, electrical, and structural assets.

2.1 Visual Condition Assessment Process

The physical condition of the asset is the current state of repair and operation of the asset as influenced by age, operating environment, and historical maintenance. A Visual Condition Assessment will be the first step in the evaluation of the physical condition of an asset and a baseline inspection will occur initially and then at a frequency as set forth in the GWAMP. In practice, the assessor must initially determine if the asset is operational and functioning as intended.

2.2 Scoring Descriptions and Characteristics

All condition assessments are evaluated on a 1 to 5 scale. Assets receiving a condition score of 1 are in excellent condition and assets receiving a condition score of a 5 are in very poor condition. The following scoring descriptions and characteristics apply to all object types:

2.2.1 Asset Score = 1; Excellent Condition

"Fully operable, well maintained, and consistent with current standards. Little wear shown and no further action required."

2.2.1.1 Primary Equipment Characteristics:

- Equipment appears new with factory applied painting/coating, which is not corroded or degraded by UV exposure.
- Equipment is not leaking but may have evidence of historic leaks.
- Equipment does not exhibit any vibration or noise outside of normal operating levels.
- Equipment pedestals and mounting equipment show minor to no damage.

2.2.1.2 Ancillary Items:

- Piping and valves are well supported and maintained with no evidence of leakage or corrosion.
- Instrumentation and Local Control Panels are well maintained and functioning properly.
- Electrical connections are sound with no evidence of damage to junction boxes or conduits. All components are well supported.

Figure 1 shows an example of chemical pumps in excellent condition (Score = 1). Note the pumps are newly installed with no signs of wear or corrosion.

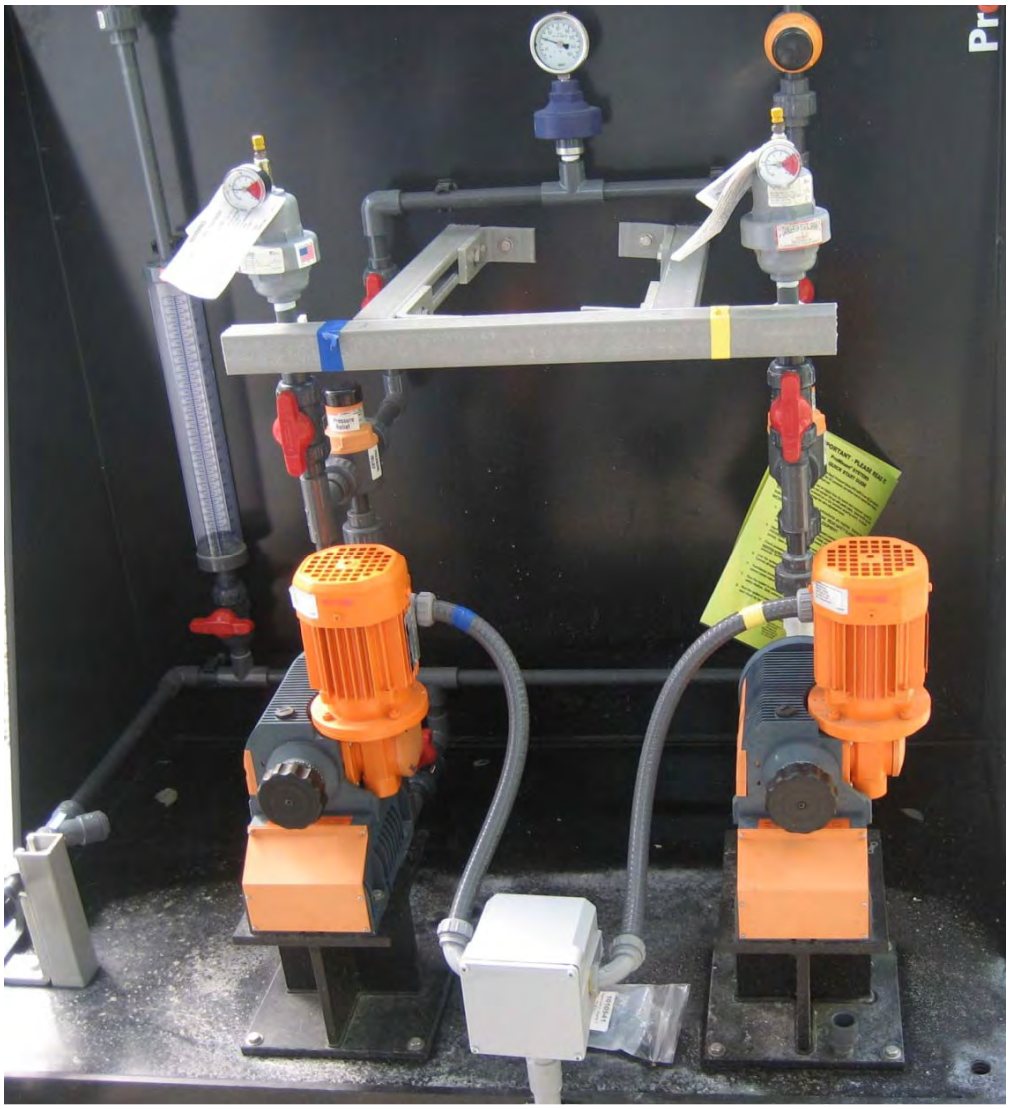


Figure 1. Score = 1: Excellent Condition Example

2.2.2 Asset Score = 2; Fair Condition

"Sound and well maintained but may be showing slight signs of early wear. Delivering full efficiency with little or no performance deterioration. Only minor renewal or rehabilitation may be needed in the near term."

2.2.2.1 Primary Equipment Characteristics

- Equipment could be older, but physical appearance is very good, may have been repainted since installation.
- Operating environment is generally clean and dry without the potential for excessive heat/cold (temperature changes), humidity or potential for corrosion (exposure to corrosive chemicals, etc.).
- Equipment may have some minor surface corrosion or UV degradation (<10% of surfaces).
- Equipment is not leaking but may have evidence of historic leaks.
- Equipment may exhibit very little vibration or noise outside of normal operating levels.
- Equipment pedestals and supports are not damaged and have little to no surface corrosion (<10% or surface).
- Equipment appears to be well maintained. Equipment may have recently undergone rehabilitation/overhaul. Note whether grease fittings appear used, filters are replaced regularly, etc.
- Equipment is in the middle of its estimated useful life and will need only minor renewal or rehabilitation in near term.

2.2.2.2 Ancillary Items

- Piping and valves are well supported and maintained with minor surface corrosion (<10%). There should be no visible leakage. There may be evidence of maintenance / replacement.
- Local Control Panels may have some minor maintenance issues (dents, surface corrosion <10%). No evidence of leakage or internal corrosion. All panel mounted instruments and devices should be functional.
- Field Instruments - All field instruments should be functional. There should be no visible leakage – could be evidence of historic leakage.
- Electrical connections are sound with no evidence of damage to junction boxes or conduits. All components are well supported. There may be evidence of maintenance/replacement.

  Note: If equipment has been rehabilitated or renewed, the highest rating it can receive is "Good." Excellent condition only applies to new equipment.

Figure 2 shows an example of pumps in fair condition (Score = 2). Note the equipment is well maintained with little signs of wear.

Figure 2. Score = 2: Fair Condition Example

2.2.3 Asset Score = 3; Moderate Condition

"Functionally sound and acceptable and showing normal signs of wear. May have minor failures or diminished efficiency and with some performance deterioration or increase in maintenance cost. Moderate renewal, or rehabilitation needed in near term."

2.2.3.1 Primary Equipment Characteristics:

- Equipment is generally older, with physical appearance of good to fair.
- Equipment may have surface corrosion or UV degradation (<50% of surface) and needs painting/coating.
- Equipment may have minor leaks (visible slow drip at connections only – not from holes or other damage).
- Equipment may exhibit moderate vibration or noise outside of normal operating levels, but no apparent damage noted.
- Equipment pedestals and supports may have surface cracking, grout loosening, etc. (no through cracks) and/or surface corrosion (<50% of surface).

2.2.3.2 Ancillary Items:

- Piping and valve supports may have surface corrosion (<50% of surface), minor damage or require minor maintenance. There may be evidence of minor leaks (dripping at joints/gaskets only – not from holes).
- Local Control Panels may have some minor maintenance issues (dents, surface corrosion <50%). No evidence of leakage or internal corrosion. All panel mounted instruments and devices should be functional.
- Field Instruments - All field instruments should be functional. Minor leaks could be present at connections only.
- Electrical connections appear sound but conduit and/or junction boxes show minor damage (surface cracking, gaps – missing gaskets/seals, surface corrosion <20%). Wiring is not exposed.

Figure 3 shows an example of a drive in moderate condition (Score = 3). Note equipment is fully operable with visible surface corrosion.

Figure 3. Score = 3: Moderate Condition

2.2.4 Asset Score = 4; Poor Condition

"Functions but requires a high level of maintenance to remain operational. Shows abnormal wear and is likely to cause significant performance deterioration in the near term. Replacement or major rehabilitation needed in the near term."

2.2.4.1 Equipment

- Equipment is generally older, with physical appearance of fair to poor.
- Operating environment could be subject to frequent wet conditions or the potential for excessive heat/cold (temperature changes), humidity or potential for corrosion (exposure to corrosive chemicals, etc.).
- Equipment has extensive surface corrosion or UV degradation (>50% of surface area) and/or evidence of structural corrosion (1 location).
- Equipment has heavy leakage at gaskets/connections (steady stream) and/or there is evidence of current or previous leakage from holes or other failure (1 location).
- Equipment exhibits excessive vibration or noise outside of normal operating levels with evidence of nonstructural damage resulting from excessive vibration (loose guards, connections, etc) - need to discuss with O&M staff.
- Equipment concrete pedestals have 50%-75% surface cracking and/or are cracked through (<25% of pedestal) and/or steel supports are damaged (<25% of steel supports with structural corrosion, missing/broken anchors or other similar damage).
- Equipment appears to require corrective action beyond routine or preventative maintenance of normal wear items. Action involves extended down time to implement (e.g. alignment, leveling, etc.).
- Equipment is at the end of its estimated useful life and will need to be replaced or rehabilitated in near term.

2.2.4.2 Ancillary Items

- Piping and valve supports exhibit heavy surface corrosion (>50%) and/or structural corrosion (flaking, section loss). Connections are damaged with missing and/or broken anchors. There are heavy leaks on piping or valves (steady stream) and/or evidence of current or previous leakage from holes or other failure.
- Local Control Panels show heavy surface rust (>50%) and/or structural damage. Evidence of leakage and/or internal corrosion. Some panel mounted instruments/indicators non-functional (<20%).
- Field Instruments <20% exhibit damage, corrosion and/or are non-functional. Electrical connections appear unsound. Conduits and/or junction boxes heavily corroded or damaged (<50%) and/or wiring is exposed (1 location).

Figure 4 shows an example of pump in poor condition (Score = 4). Note equipment exhibits heavy corrosion.

Figure 4. Score = 4: Poor Condition

2.2.5 Asset Score = 5; Failed Condition

"Effective life exceeded and/or excessive maintenance cost incurred. A high risk of breakdown or imminent failure. No additional life expectancy with immediate replacement needed."

2.2.5.1 Equipment

- Equipment is generally older, with physical appearance of fair to poor.
- Equipment has extensive surface corrosion or UV degradation (>50% of surface area) and/or evidence of structural corrosion.
- Equipment has heavy leakage at gaskets/connections (steady stream) and/or there is evidence of current or previous leakage from holes or other failure.
- Equipment exhibits excessive vibration or noise outside of normal operating levels with evidence of nonstructural damage resulting from excessive vibration (loose guards, connections, etc.) - need to discuss with O&M staff.
- Equipment concrete pedestals have >50% surface cracking and/or are cracked through and/or steel supports are damaged (steel supports with structural corrosion, missing/broken anchors or other similar damage).
- Equipment is not in an operable state or locked out from operation due to a known condition.

2.2.5.2 Ancillary Items

- Piping and valve supports exhibit heavy surface corrosion (>50%) and/or structural corrosion (flaking, section loss). Connections are damaged with missing and/or broken anchors. There are heavy leaks on piping or valves (steady stream) and/or evidence of current or previous leakage from holes or other failure.
- Local Control Panels show heavy surface rust (>50%) and/or structural damage. Evidence of leakage and/or internal corrosion. Some panel mounted instruments/indicators non-functional (<20%).
- Field Instruments exhibit damage, corrosion and/or are non-functional. Electrical connections appear unsound. Conduits and/or junction boxes heavily corroded or damaged (<50%) and/or wiring is exposed.

Figure 5 shows an example of chemical pump in Failed condition (Score = 5). Note equipment exhibits extensive leaking.

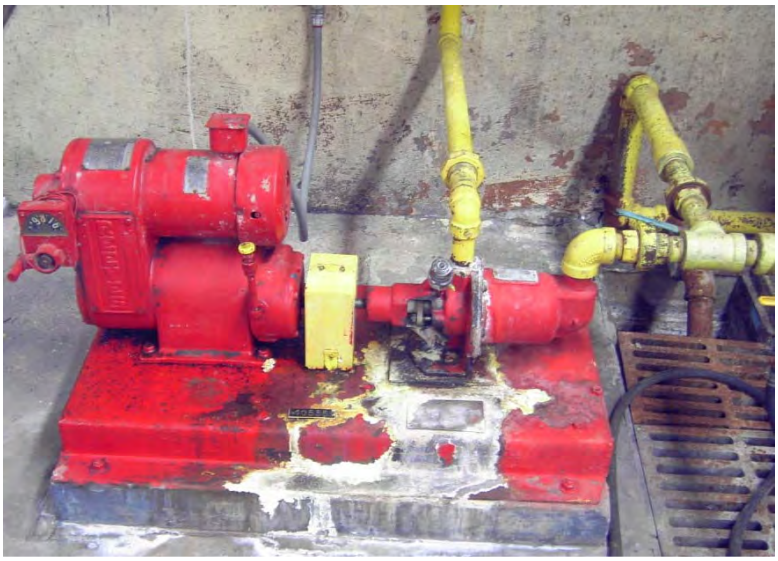


Figure 5. Score = 5: Failed Condition Example 1

Figure 6 shows an Example of gauges in failed condition (Score = 5). Note equipment exhibits heavy corrosion and is inoperable.

Figure 6. Score = 5: Failed Condition Example 2

2.3 Mechanical Assets

The following table summarizes the criteria and scoring approach for a Visual Condition Assessment of mechanical assets which include pumps, motors, HVAC, etc.:

Table 2-1 Visual Condition Assessment Criteria for Mechanical Assets

Criteria	Evaluation	1 Excellent	2 Fair	3 Moderate	4 Poor	5 Failed
Corrosion	Surface only	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Structural (loss of metal)	--	--	1 location	2 - 3 locations	>3 locations
Leakage	Gaskets/Connections	Historic only	Drip only	Stream 1 location	Stream 2-3 location	Stream >3 locations
	Holes/Failures	--	--	1 location	2-3 locations	>3 locations
Vibration/ Noise	Vibration Apparent with Noise	--	Noise >10% - 20% Normal	Noise >20% - 30% normal	Noise >30% - 50% normal	Noise >50% normal
	Non-Structural Damage	--	--	Yes	--	--
	Structural Damage	--	--	--	--	Yes
Heat	Observed (note unusual heat)	--	--	--	--	Yes
Concrete Support	Surface Cracking/ Loose Grout	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Through Cracks	--	--	<25%	25% - 50%	>50%
	Missing Pieces	--	--	--	1 - 2 locations	3 or more locations
Steel Supports	Surface Corrosion	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Structural Corrosion	--	--	<25%	25% - 50%	>50%
	Missing/Broken Anchors	--	--	<25%	25% - 50%	>50%

The scoring has been incorporated into condition assessment forms that are included in Appendix A. Example photographs depicting mechanical assets with 1 to 5 scores are included in Appendix B.

2.4 Electrical Assets

The following table summarizes the criteria and scoring approach for a Visual Condition Assessment for an electrical asset:

Table 2-2 Visual Condition Assessment Criteria for Electrical Assets

Criteria	Evaluation	1 Excellent	2 Fair	3 Moderate	4 Poor	5 Failed
Corrosion	Surface only	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Structural	Minor Surface	Multiple minor surface	Significant corrosion affecting structure	Multiple significant corrosion affecting structure	Major Corrosion
Dielectric Leakage	Transformer/Connection Leaks	Evidence of leakage but not observed	Leakage evident at multiple locations	Significant leakage to equipment operating	Leakage level will impact equipment operation in near term	Leakage level will impact equipment operation imminently
Vibration/ Noise	Vibration (use handheld monitor)	--	Moderate (vibration level sensed but within operating standards)	--	Severe vibration level measured beyond acceptable limits	Severe vibration level measured beyond acceptable limits
	Noise level while operating	--	Moderate (indicating equipment condition issue)	--	Severe noise level (indicating imminent issue)	Severe noise level (indicating failure)
Electrical Damage	Evidence of Overheating/ Arcing	Minor heating due to operating conditions	Multiple minor heating due to operating conditions	Significant heating showing signs of wear/ fatigue	Significant multiple heating showing signs of wear/ fatigue	Failure due to heating
	Grounding Missing/ Damaged	Minor ground connection damage, no loss	Multiple ground connections or bonds damaged but not lost	Loss of any one ground connection	Partial loss of equipment grounding	Total loss of equipment grounding

Table 2-2 Visual Condition Assessment Criteria for Electrical Assets						
Criteria	Evaluation	1 Excellent	2 Fair	3 Moderate	4 Poor	5 Failed
Electrical Damage	Cooling System	Reduced airflow 25%	Reduced airflow 50%	Reduced airflow 75%	Cooling system failure imminent	Cooling system failure
	Connections Loose/ Broken	Cover off or missing	Low voltage connection exposed or not properly dressed	Medium voltage connection exposed or not properly dressed	Multiple connections exposed or not properly dressed	Multiple connections exposed or not properly dressed
Concrete Supports	Surface Cracking/ Loose Grout	Presence of surface cracks or loose grout	Multiple surface cracks	Potential loss of equipment anchor point	Equipment stability compromised due to surface cracks	Equipment stability failed due to surface cracks
	Through Cracks	Presence of through cracks	Multiple through cracks	Foundation settling	Equipment stability compromised	Equipment stability failed
Steel Supports	Surface Corrosion	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Structural Corrosion	Presence of corrosion	>10%	<25%	25%	>50%
	Supports	Support moving or vibrating	Support anchor loose or severely corroded	Single support not performing function	Supporting system compromised	Supporting system failed

The scoring has been incorporated into condition assessment forms that are included in Appendix A. Example photographs depicting electrical assets with 1 to 5 scores are included in Appendix B.

2.5 Structural Assets

The following table summarizes the criteria and scoring approach for a visual assessment for structural assets:

Table 2-3 Visual Condition Assessment Criteria for Structural Assets

Criteria	Evaluation	1 Excellent	2 Fair	3 Moderate	4 Poor	5 Failed
Paint Condition	Surface only	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
Leakage	Cracks/Joints	Historic only	Drip only	Stream 1 location	Stream 2 -3 locations	Stream >3 locations
	Penetrations/Failures	--	--	1 location	2 - 3 locations	>3 locations
Concrete/ Masonry Surface Damage/ Joint Damage	Cracking (width of cracks)	<1/16 inches	1/16 - 1/8 inches	1/8 - 1/4 inches	1/4 - 1/2 inches	>1/2 inches
	Exposed Reinforcement	--	--	1 location	2-3 locations	>3 locations
	Spalling, Exposed Aggregate, Pitting, Delamination, Freeze/Thaw Damage	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Setting/Heaving	--	--	1 location	2-3 locations	>3 locations
Steel Damage	Cracking	--	--	1 location	2-3 locations	>3 locations
	Fatigue/Connection Failure	--	--	1 location	2-3 locations	>3 locations
	Deformation	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Corrosion/Metal Loss	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
Wood Damage	Dry Rot	--	--	1 location	2-3 locations	>3 locations
	Warping/Splitting	--	--	1 location	2-3 locations	>3 locations
	Connection Failure	--	--	1 location	2-3 locations	>3 locations
	Loss of Section	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
Water/ Drainage	Evidence of standing water along foundation (soil settling)	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
Asphalt Surfaces	Sealer Condition	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Cracking	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Aggregate Exposure	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%

Table 2-3 Visual Condition Assessment Criteria for Structural Assets						
Criteria	Evaluation	1 Excellent	2 Fair	3 Moderate	4 Poor	5 Failed
Roof Conditions	Ponding	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Shingle Grit Loss/Cracking	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Missing Shingles	--	--	<10%	10% - 20%	>20%
	Dry Rot of Rubber Membrane	--	--	1 location	2-3 locations	>3 locations
	Torn/split Membrane	--	--	1 location	2-3 locations	>3 locations
	Flashing Issues	--	--	1 location	2-3 locations	>3 locations
	Attic Issues/Leaks	--	--	1 location	2-3 locations	>3 locations
Windows/ Doors	Broken Glass	--	--	1 location	2-3 locations	>3 locations
	Caulking	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Warpage/Alignment/Rot	--	--	1 location	2-3 locations	>3 locations
	Hardware Issues	--	--	1 location	2-3 locations	>3 locations

The scoring has been incorporated into condition assessment forms that are included in Appendix A. Example photographs depicting structural assets with 1 to 5 scores are included in Appendix B.

Section 3

Visual Condition Assessment Documentation

3.1 Visual Condition Assessment Forms

Forms were developed for the condition assessment of groundwater wells. The forms were created to capture process mechanical, structural, and electrical condition of an asset or object, as applicable. The forms are included in Appendix A.

3.2 Visual Condition Assessment Equipment

Following completion of the assessment activities, data and photos should be available for review in the Computerized Maintenance Management System (CMMS). Although Visual Condition Assessment is a sensory level assessment, some equipment may be useful to document the asset condition. At a minimum, the assessor should have the following equipment available for use during a Visual Condition Assessment:

- Digital Camera to photo document observed asset condition
- Tape Measure to evaluate structural cracking.
- Flashlight to provide additional lighting as necessary
- Temperature Gun to assess temperature of equipment
- Rag or Cloth to wipe away debris or material from an asset tag
- Small Wire Brush to assess presence of historic leakage

3.3 Photo Documentation

It is important to document the asset condition during a Visual Condition Assessment and digital cameras should be used to document observed conditions for possible review during follow-up. Photos should be loaded into the CMMS on the asset record to document asset condition over time. The following guidelines should be followed regarding photo documentation:

- Set camera at lowest megapixel setting (1-2 MB).
- Set-up date stamping
- Record photo number on assessment sheet
- Rename photo to Asset ID after downloading
- Take photos sparingly:
  - One photo minimum per group and one per structure.

Additional photo of individual assets in very poor condition- all assets scoring a 5 require additional photos for engineering referral.

Appendix A: Assessment Forms

SSWD GWAMP FIELD ASSESSMENT FORM

Location:	Assessor's Name:
Installation Date:	Assessment Date:
Facility Description:	

Object Description		1	2	3	4	5	Notes
Backflow - Site Irrigation	Condition						
	Performance						
Backflow - Surface Wash	Condition						
	Performance						
Backflow - Backwash Recovery	Condition						
	Performance						
Chemical System - Chlorination System 1	Condition						
	Performance						
Chemical System - Chlorination System 2	Condition						
	Performance						
Chemical System - Dechlorination System	Condition						
	Performance						
Chemical System - Fluoride System	Condition						
	Performance						
Chemical System - FRP Enclosure 1	Condition						
	Performance						
Chemical System - FRP Enclosure 2	Condition						
	Performance						
Climate Control - Building HVAC	Condition						
	Performance						
Climate Control - MCC HVAC	Condition						
	Performance						
Climate Control - Generator Exhaust	Condition						
	Performance						
Climate Control - Building Exhaust	Condition						
	Performance						

SSWD GWAMP FIELD ASSESSMENT FORM

Location:	Assessment Date:

Equipment Description		1	2	3	4	5	Notes
Filter - Filter 1	Condition						
	Performance						
Filter - Filter 2	Condition						
	Performance						
Generator	Condition						
	Performance						
Motor - Well Pump	Condition						
	Performance						
Motor - Surface Wash Pump	Condition						
	Performance						
Motor - Backwash Recovery Pump	Condition						
	Performance						
Motor - Backwash Recirc Pump	Condition						
	Performance						
Motor - Booster Pump	Condition						
	Performance						
Motor Control Center	Condition						
	Performance						
Variable Frequency Drive	Condition						
	Performance						
Pump - Well	Condition						
	Performance						
Pump - Surface Wash	Condition						
	Performance						
Pump - Backwash Recovery	Condition						
	Performance						
Pump - Backwash Recirculation	Condition						
	Performance						

SSWD GWAMP FIELD ASSESSMENT FORM

Location:	Assessment Date:

Equipment Description		1	2	3	4	5	Notes
Pump - Booster	Condition						
	Performance						
Sand Separator	Condition						
	Performance						
Sump	Condition						
	Performance						
Sump Pump	Condition						
	Performance						
Sound Enclosure	Condition						
	Performance						
Tank	Condition						
	Performance						
System Well	Condition						
	Performance						
Alarm System	Condition						
	Performance						
	Condition						
	Performance						
	Condition						
	Performance						
	Condition						
	Performance						
	Condition						
	Performance						
	Condition						
	Performance						
	Condition						
	Performance						

SSWD GWAMP FIELD ASSESSMENT FORM

Location:	Assessment Date:

General Notes:

SSWD GWAMP FIELD ASSESSMENT FORM

Mechanical Visual Condition Assessment						
Criteria	**Evaluation**	**1**	**2**	**3**	**4**	**5**
Corrosion	Surface only	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Structural (loss of metal)	--	--	1 location	2 - 3 locations	>3 locations
Leakage	Gaskets/Connections	Historic only	Drip only	Stream 1 location	Stream 2-3 location	Stream >3 locations
	Holes/Failures	--	--	1 location	2-3 locations	>3 locations
Vibration/Noise	Vibration Apparent with Noise	--	Noise >10% - 20% Normal	Noise >20% - 30% normal	Noise >30% - 50% normal	Noise >50% normal
	Non-Structural Damage	--	--	Yes	--	--
	Structural Damage	--	--	--	--	Yes
Heat	Observed (note unusual heat)	--	--	--	--	Yes
Concrete Support	Surface Cracking/Loose Grout	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Through Cracks	--	--	<25%	25% - 50%	>50%
	Missing Pieces	--	--	--	1 - 2 locations	3 or more locations
Steel Supports	Surface Corrosion	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Structural Corrosion	--	--	<25%	25% - 50%	>50%
	Missing/Broken Anchors	--	--	<25%	25% - 50%	>50%

SSWD GWAMP FIELD ASSESSMENT FORM

Electrical Visual Condition Assessment Criteria						
Criteria	**Evaluation**	**1**	**2**	**3**	**4**	**5**
Corrosion	Surface only	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Structural	Minor Surface	Multiple minor surface	Significant corrosion affecting structure	Multiple significant corrosion affecting structure	Major Corrosion
Dielectric Leakage	Transformer/Connection Leaks	Evidence of leakage but not observed	Leakage evident at multiple locations	Significant leakage to equipment operating	Leakage level will impact equipment operation in near term	Leakage level will impact equipment operation imminently
Vibration/Noise	Vibration (use handheld monitor)	--	Moderate (vibration level sensed but within operating standards)	--	Severe vibration level measured beyond acceptable limits	Severe vibration level measured beyond acceptable limits
	Noise level while operating	--	Moderate (indicating equipment condition issue)	--	Severe noise level (indicating imminent issue)	Severe noise level (indicating failure)

SSWD GWAMP FIELD ASSESSMENT FORM

Electrical Visual Condition Assessment Criteria (continued)						
Criteria	**Evaluation**	**1**	**2**	**3**	**4**	**5**
Electrical Damage	Evidence of Overheating/Arcing	Minor heating due to operating conditions	Multiple minor heating due to operating conditions	Significant heating showing signs of wear/fatigue	Significant multiple heating showing signs of wear/fatigue	Failure due to heating
	Grounding Missing/Damaged	Minor ground connection damage, no loss	Multiple ground connections or bonds damaged but not lost	Loss of any one ground connection	Partial loss of equipment grounding	Total loss of equipment grounding
	Cooling System	Reduced airflow 25%	Reduced airflow 50%	Reduced airflow 75%	Cooling system failure imminent	Cooling system failure
	Connections Loose/Broken	Cover off or missing	Low voltage connection exposed or not properly dressed	Medium voltage connection exposed or not properly dressed	Multiple connections exposed or not properly dressed	Multiple connections exposed or not properly dressed
Concrete Supports	Surface Cracking/Loose Grout	Presence of surface cracks or loose grout	Multiple surface cracks	Potential loss of equipment anchor point	Equipment stability compromised due to surface cracks	Equipment stability failed due to surface cracks
	Through Cracks	Presence of through cracks	Multiple through cracks	Foundation settling	Equipment stability compromised	Equipment stability failed

SSWD GWAMP FIELD ASSESSMENT FORM

Electrical Visual Condition Assessment Criteria (continued)						
Criteria	**Evaluation**	**1**	**2**	**3**	**4**	**5**
Steel Supports	Surface Corrosion	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Structural Corrosion	Presence of corrosion	>10%	<25%	25%	>50%
	Supports	Support moving or vibrating	Support anchor loose or severely corroded	Single support not performing function	Supporting system compromised	Supporting system failed

SSWD GWAMP FIELD ASSESSMENT FORM

Structural Visual Condition Assessment						
Criteria	**Evaluation**	**1**	**2**	**3**	**4**	**5**
Paint Condition	Surface only	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
Leakage	Cracks/Joints	Historic only	Drip only	Stream 1 location	Stream 2 -3 locations	Stream >3 locations
	Penetrations/Failures	--	--	1 location	2 - 3 locations	>3 locations
Concrete/Masonry Surface Damage/Joint Damage	Cracking (width of cracks)	<1/16 inches	1/16 - 1/8 inches	1/8 - 1/4 inches	1/4 - 1/2 inches	>1/2 inches
	Exposed Reinforcement	--	--	1 location	2-3 locations	>3 locations
	Spalling, Exposed Aggregate, Pitting, Delamination, Freeze/Thaw Damage	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Setting/Heaving	--	--	1 location	2-3 locations	>3 locations
Steel Damage	Cracking	--	--	1 location	2-3 locations	>3 locations
	Fatigue/Connection Failure	--	--	1 location	2-3 locations	>3 locations
	Deformation	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Corrosion/Metal Loss	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
Wood Damage	Dry Rot	--	--	1 location	2-3 locations	>3 locations
	Warping/Splitting	--	--	1 location	2-3 locations	>3 locations
	Connection Failure	--	--	1 location	2-3 locations	>3 locations
	Loss of Section	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
Water/Drainage	Evidence of standing water along foundation (soil settling)	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
Asphalt Surfaces	Sealer Condition	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Cracking	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Aggregate Exposure	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%

SSWD GWAMP FIELD ASSESSMENT FORM

Structural Visual Condition Assessment (continued)						
Criteria	**Evaluation**	**1**	**2**	**3**	**4**	**5**
Roof Conditions	Ponding	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Shingle Grit Loss/Cracking	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Missing Shingles	--	--	<10%	10% - 20%	>20%
	Dry Rot of Rubber Membrane	--	--	1 location	2-3 locations	>3 locations
	Torn/split Membrane	--	--	1 location	2-3 locations	>3 locations
	Flashing Issues	--	--	1 location	2-3 locations	>3 locations
	Attic Issues/Leaks	--	--	1 location	2-3 locations	>3 locations
Windows/Doors	Broken Glass	--	--	1 location	2-3 locations	>3 locations
	Caulking	<10%	10% - 50%	>50% - 75%	>75% - 95%	>95%
	Warpage/Alignment/Rot	--	--	1 location	2-3 locations	>3 locations
	Hardware Issues	--	--	1 location	2-3 locations	>3 locations

Appendix B: Example Inspection Photographs

Mechanical Assets in Excellent Condition (Score =1)

Mechanical Asset in Good Condition: Score = 1	
	<10% Surface corrosion and historic leakage only noted.
	No corrosion or leakage noted.

Mechanical Asset in Good Condition: Score = 1	
	No corrosion; new asset.
	<10% corrosion and evidence of historic leakage.
	No signs for vibration. Corrosion <10% and historic only leakage noted.

Mechanical Equipment in Fair Condition (Score =2)

Mechanical Equipment in Fair Condition: Score = 2	
	Equipment is well maintained with little signs of wear.

Mechanical Equipment in Moderate Condition (Score =3)

Mechanical Equipment in Fair Condition: Score = 3	
	Leakage and corrosion (<50%) noted.
	Leakage noted (drip only).
	Surface corrosion noted, but not compromising the asset. Evaluate for recoating.

Mechanical Equipment in Fair Condition: Score = 3	
	Surface corrosion 10-50%, evaluate for recoating.

Mechanical Equipment in Poor Condition (Score = 4)

Process Mechanical Equipment in Fair Condition: Score = 3	
	Equipment exhibits heavy corrosion

Mechanical Equipment in Failed Condition (Score = 5)

Mechanical Equipment in Failed Condition: Score = 5	
	Excessive vibration has caused visible damage to the equipment guard.
	Asset is compromised. Damage noted.
	Corrosion (>50%).

Mechanical Equipment in Failed Condition: Score = 5	
	Stream leakage noted.

Electrical Equipment in Excellent Condition (Score =1)

Electrical Equipment in Excellent Condition: Score = 1	
	Local control panel with no corrosion. Like new condition.
	No evidence of corrosion; covers and panels in good condition. No evidence of leakage or visible damage.

Electrical Equipment in Excellent Condition: Score = 1	
	Minor surface only corrosion and panels in good condition. No visible damage or loose conduit.

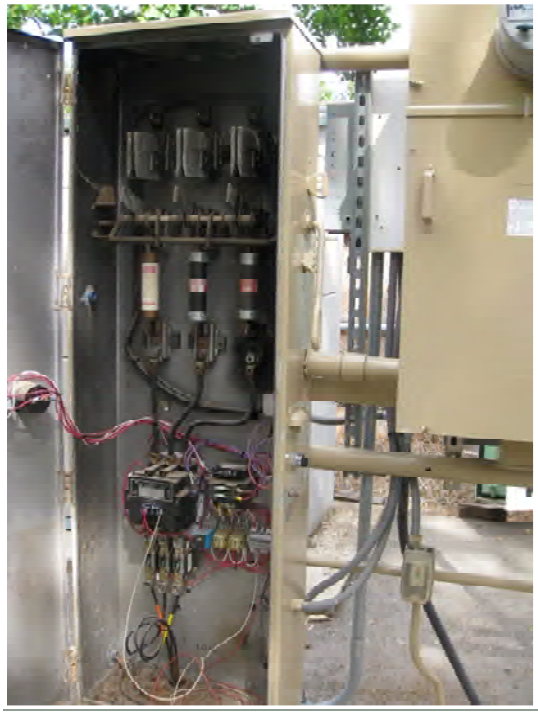
Electrical Equipment in Fair Condition (Score = 2)

Electrical Equipment in Fair Condition: Score = 2	
	Moderate surface corrosion 10% to 50%

Electrical Equipment in Moderate Condition (Score =3)

Electrical Equipment in Moderate Condition: Score = 3	
	Surface corrosion (<50%), no leakage or visible damage noted.

Electrical Equipment in Poor Condition (Score = 4)

Electrical Equipment in Poor Condition: Score = 4	
	Functions but requires a high level of maintenance. Obsolete equipment passed useful life.

Electrical Equipment in Failed Condition (Score = 5)

Electrical Equipment in Failed Condition: Score = 5	
	Corrosion on inside of panel that compromises asset. Corrosion has completed eroded metal.
	Visible Damage on exterior of panel

Structural Assets in Excellent Condition (Score = 1)

Structural Asset in Excellent Condition: Score = 1	
	Concrete shows no signs of spalling, cracking, leakage or exposed rebar.
	Concrete pedestal showing no signs of cracking, leakage, or spalling.

Structural Asset in Excellent Condition: Score = 1	
	<10% spalling of concrete, no cracks observed, no exposed rebar. No structural corrosion observed.

Structural Assets in Fair Condition (Score = 2)

Structural Asset in Fair Condition: Score = 2	
	1/16 - 1/8 inches cracking
	10% - 50% metal loss
	Little to no corrosion observed

Structural Assets in Moderate Condition (Score = 3)

Structural Assets in Moderate Condition: Score = 3	
	Concrete showing some (<25%) spalling and evidence of cracking.
	Cracks >1/16-inch and >10% spalling.

Structural Assets in Moderate Condition: Score = 3	
	Moderate surface corrosion <50%
	Exposed rebar (<20%) with some concrete spalling.

Structural Assets in Poor Condition (Score = 4)

Structural Asset in Poor Condition: Score = 4	
	Functional but >75% - 95% corrosion
	Functional but >75% - 95% corrosion

Structural Asset in Failed Condition

Structural Asset in Failed Condition: Score = 5	
	Concrete is cracked with evidence of exposed reinforcement.
	Exposed rebar and cracking concrete.

Structural Asset in Failed Condition: Score = 5	
	Significant corrosion affecting structure.
	Significant corrosion and exposed steel; protective coating missing.
	Spalling concrete >25% with exposed rebar. Surface corrosion >50% noted

Appendix D: Condition Assessment Results

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Well	NAME_1	ADDRESS_1	EquipmentID	Label	DRILLED_YEAR	Installation Date	Condition	Performance
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	AR24-1	Air Release Valve 1	1952	2012	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	AR24-2	Air Release Valve 2	1952	2012	3	2
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	CV24-1	CheckValve 1	1952	2012	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	CS24-CL1	Chlorination Sys 1	1952	2012	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	CS24-FL1	Fluoride Sys 1	1952	2012	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	CS24-FE1	RFP Enclosure 1	1952	2006	2	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	FM24-1	FlowMeter 1	1952	2015	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	MO24-1	MOTOR 01	1952	2009	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	MC24-1	MotorControlCenter1	1952	1952	3	2
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	PT24-1	PressureTransducer 1	1952	2012	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	PU24-1	PUMP 1	1952	2013	0	0
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	RT24-1	RemoteTelemetryUnit1	1952	2004	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	SS24-1	SandSeparator 1	1952	1990	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	TA24-1	Tank 1	1952	1952	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	TA24-2	Tank 2	1952	1952	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	VA24-1	Valving 1	1952	1952	2	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	VA24-2	Valving 2	1952	1952	1	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	VA24-3	Valving 3	1952	1952	2	1
WE24	BECERRA / WOODCREST	3858 WOODCREST RD	VA24-4	Valving 4	1952	1952	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	AR26-1	Air Release Valve 1	1953	2013	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	AR26-2	Air Release Valve 2	1953	2013	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	CV26-1	CheckValve 1	1953	2013	5	5
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	CS26-CL1	Chlorination Sys 1	1953	2013	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	CS26-FL1	Fluoride Sys 1	1953	2013	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	CS26-FE1	RFP Enclosure 1	1953	2006	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	FM26-1	FlowMeter 1	1953	2016	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	MO26-1	MOTOR 01	1953	2011	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	MC26-1	MotorControlCenter1	1953	2006	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	PT26-1	PressureTransducer 1	1953	2013	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	PU26-1	PUMP 1	1953	2011	0	0
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	RT26-1	RemoteTelemetryUnit1	1953	2006	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	SS26-1	SandSeparator 1	1953	2013	5	5
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	TA26-1	Tank 1	1953	1953	2	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	TA26-2	Tank 2	1953	1953	2	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-1	Valving 1	1953	1953	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-2	Valving 2	1953	1953	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-3	Valving 3	1953	1953	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-4	Valving 4	1953	1953	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-5	Valving 5	1953	1953	1	1
WE26	GREENWOOD / MARCONI	4501MARCONI AVE	VA26-6	Valving 6	1953	1953	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	AR32A-1	Air Release Valve 1	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	AR32A-2	Air Release Valve 2	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	AS32A	NULL	1999	2014	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	BF32A-1	Backflow 1	1999	2000	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	BF32A-2	Backflow 2	1999	2000	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	BF32A-3	Backflow 3	1999	2000	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	CV32A-1	CheckValve 1	1999	2019	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	CV32A-2	CheckValve 2	1999	2019	2	2
WE32A	EDEN / ROOT	4900 EDEN CT	CA32A-1	ChemicalAnalyzer 1	1999	2000	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	CS32A-CL1	Chlorination Sys 1	1999	2014	0	0
WE32A	EDEN / ROOT	4900 EDEN CT	CS32A-FL1	Fluoride Sys 1	1999	2006	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	CS32A-FE1	RFP Enclosure 1	1999	2019	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	FI32A-1	Filter 1	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	FI32A-2	Filter 2	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	FM32A-1	FlowMeter 1	1999	2015	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	FM32A-2	FlowMeter 2	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	FM32A-3	FlowMeter 3	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	FM32A-4	FlowMeter 4	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	FM32A-5	FlowMeter 5	1999	2015	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	HV32A-1	HydraulicValve1	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	HV32A-2	HydraulicValve2	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	HV32A-3	HydraulicValve3	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	HV32A-4	HydraulicValve4	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	LT32A-1	LevelTransducer 1	1999	2013	0	0
WE32A	EDEN / ROOT	4900 EDEN CT	LT32A-2	LevelTransducer 2	1999	2013	0	0
WE32A	EDEN / ROOT	4900 EDEN CT	LT32A-3	LevelTransducer 3	1999	2013	0	0
WE32A	EDEN / ROOT	4900 EDEN CT	LT32A-4	LevelTransducer 4	1999	2013	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MO32A-1	MOTOR 01	1999	2013	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MO32A-2	MOTOR 02	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MO32A-3	MOTOR 03	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MC32A-1	MotorControlCenter1	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-1	MotorOperatedValve 1	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-2	MotorOperatedValve 2	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-3	MotorOperatedValve 3	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-4	MotorOperatedValve 4	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-5	MotorOperatedValve 5	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-6	MotorOperatedValve 6	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-7	MotorOperatedValve 7	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-8	MotorOperatedValve 8	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-9	MotorOperatedValve 9	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-10	MotorOperatedValve10	1999	1999	1	1

Well	NAME_1	ADDRESS_1	EquipmentID	Label	DRILLED_YEAR	Installation Date	Condition	Performance
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-11	MotorOperatedValve11	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	MV32A-12	MotorOperatedValve12	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	PT32A-1	PressureTransducer 1	1999	2019	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	PT32A-2	PressureTransducer 2	1999	2019	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	PT32A-3	PressureTransducer 3	1999	2019	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	PT32A-4	PressureTransducer 4	1999	2019	0	0
WE32A	EDEN / ROOT	4900 EDEN CT	PU32A-1	PUMP 1	1999	2003	0	0
WE32A	EDEN / ROOT	4900 EDEN CT	PU32A-2	PUMP 2	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	PU32A-3	PUMP 3	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	PU32A-4	PUMP 4	1999	1999	3	2
WE32A	EDEN / ROOT	4900 EDEN CT	RT32A-1	RemoteTelemetryUnit1	1999	1999	0	0
WE32A	EDEN / ROOT	4900 EDEN CT	SU32A-1	Sump 1	1999	1999	0	0
WE32A	EDEN / ROOT	4900 EDEN CT	SU32A-2	Sump 2	1999	1999	0	0
WE32A	EDEN / ROOT	4900 EDEN CT	VA32A-1	Valving 1	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	VA32A-2	Valving 2	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	VA32A-3	Valving 3	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	VA32A-4	Valving 4	1999	1999	1	1
WE32A	EDEN / ROOT	4900 EDEN CT	VF32A	VARIABLE FREQUENCY DRIVE 1	1999	2014	1	1
WE4B	BELL / MARCONI	2841 BELL ST	AR4B-1	Air Release Valve 1	1994	1994	2	1
WE4B	BELL / MARCONI	2841 BELL ST	BF4B-1	Backflow 1	1994	2000	1	1
WE4B	BELL / MARCONI	2841 BELL ST	CV4B-1	CheckValve 1	1994	2014	1	1
WE4B	BELL / MARCONI	2841 BELL ST	CS4B-CL1	Chlorination Sys 1	1994	2014	2	1
WE4B	BELL / MARCONI	2841 BELL ST	CS4B-FL1	Fluoride Sys 1	1994	2019	1	1
WE4B	BELL / MARCONI	2841 BELL ST	CS4B-FE1	RFP Enclosure 1	1994	2000	2	1
WE4B	BELL / MARCONI	2841 BELL ST	CS4B-FE2	RFP Enclosure 2	1994	2006	2	1
WE4B	BELL / MARCONI	2841 BELL ST	CC4B-1	ExFn 1	1994	2009	1	1
WE4B	BELL / MARCONI	2841 BELL ST	CC4B-2	Wall	1994	2009	2	1
WE4B	BELL / MARCONI	2841 BELL ST	FM4B-1	FlowMeter 1	1994	2015	1	1
WE4B	BELL / MARCONI	2841 BELL ST	GE4B	Generator 1	1994	1997	1	1
WE4B	BELL / MARCONI	2841 BELL ST	HV4B-1	HydraulicValve1	1994	2019	1	1
WE4B	BELL / MARCONI	2841 BELL ST	LT4B-1	LevelTransducer 1	1994	2015	1	1
WE4B	BELL / MARCONI	2841 BELL ST	LT4B-2	LevelTransducer 2	1994	2015	3	1
WE4B	BELL / MARCONI	2841 BELL ST	MO4B-1	MOTOR 01	1994	2019	2	1
WE4B	BELL / MARCONI	2841 BELL ST	MC4B-1	MotorControlCenter1	1994	1999	1	1
WE4B	BELL / MARCONI	2841 BELL ST	PT4B-1	PressureTransducer 1	1994	2014	2	1
WE4B	BELL / MARCONI	2841 BELL ST	PU4B-1	PUMP 1	1994	2019	3	2
WE4B	BELL / MARCONI	2841 BELL ST	RT4B-1	RemoteTelemetryUnit1	1994	1999	1	1
WE4B	BELL / MARCONI	2841 BELL ST	SE4B	NULL	1994	1994	2	1
WE4B	BELL / MARCONI	2841 BELL ST	SU4B-2	Sump 1	1994	2010	0	0
WE4B	BELL / MARCONI	2841 BELL ST	SU4B-1	SumpPump 1	1994	2010	0	0
WE4B	BELL / MARCONI	2841 BELL ST	VA4B-1	Valving 1	1994	1994	1	1
WE4B	BELL / MARCONI	2841 BELL ST	VA4B-2	Valving 2	1994	1994	1	1
WE4B	BELL / MARCONI	2841 BELL ST	VA4B-3	Valving 3	1994	1994	1	1
WE4B	BELL / MARCONI	2841 BELL ST	VF4B	VARIABLE FREQUENCY DRIVE 1	1994	2009	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	AR71-1	Air Release Valve 1	1998	1998	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	AS71	NULL	1998	2013	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	BF71-1	Backflow 1	1998	2000	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	CV71-1	CheckValve 1	1998	2018	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	CS71-CL1	Chlorination Sys 1	1998	2018	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	CS71-FL1	Fluoride Sys 1	1998	2019	2	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	CS71-FE1	RFP Enclosure 1	1998	2006	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	CC71-1	ExFn 1	1998	2013	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	FM71-1	FlowMeter 1	1998	2015	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	HV71-1	HydraulicValve1	1998	1998	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	LT71-1	LevelTransducer 1	1998	2019	0	0
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	LT71-2	LevelTransducer 2	1998	2019	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	MO71-1	MOTOR 01	1998	1998	2	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	MC71-1	MotorControlCenter1	1998	1999	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	PT71-1	PressureTransducer 1	1998	2018	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	PU71-1	PUMP 1	1998	1998	0	0
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	RT71-1	RemoteTelemetryUnit1	1998	1999	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	VA71-1	Valving 1	1998	1998	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	VA71-2	Valving 2	1998	1998	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	VA71-3	Valving 3	1998	1998	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	VA71-4	Valving 4	1998	1998	1	1
WE71	RODNEY T FRANZ	1200 JACOB LN (MIDDLE PROPERTY)	VF71	VARIABLE FREQUENCY DRIVE 1	1998	2013	1	1
WEN24	DON JULIO	4317 DON JULIO BL	ARN24-1	Air Release Valve 1	1976	2006	1	1
WEN24	DON JULIO	4317 DON JULIO BL	ARN24-2	Air Release Valve 2	1976	2006	1	1
WEN24	DON JULIO	4317 DON JULIO BL	CVN24-1	CheckValve 1	1976	2016	1	1
WEN24	DON JULIO	4317 DON JULIO BL	CSN24-CL1	Chlorination Sys 1	1976	2016	1	1
WEN24	DON JULIO	4317 DON JULIO BL	CSN24-FE1	RFP Enclosure 1	1976	1995	3	1
WEN24	DON JULIO	4317 DON JULIO BL	CCN24-1	ExFn 1	1976	1995	3	2
WEN24	DON JULIO	4317 DON JULIO BL	FMN24-1	FlowMeter 1	1976	2014	1	1
WEN24	DON JULIO	4317 DON JULIO BL	MON24-1	MOTOR 01	1976	2011	2	1
WEN24	DON JULIO	4317 DON JULIO BL	MCN24-1	MotorControlCenter1	1976	1976	1	1
WEN24	DON JULIO	4317 DON JULIO BL	PTN24-1	PressureTransducer 1	1976	2016	2	1
WEN24	DON JULIO	4317 DON JULIO BL	PUN24-1	PUMP 1	1976	1976	0	0
WEN24	DON JULIO	4317 DON JULIO BL	RTN24-1	RemoteTelemetryUnit1	1976	2009	1	1
WEN24	DON JULIO	4317 DON JULIO BL	TAN24-1	Tank 1	1976	1976	1	1
WEN24	DON JULIO	4317 DON JULIO BL	VAN24-1	Valving 1	1976	1976	1	1
WEN24	DON JULIO	4317 DON JULIO BL	VAN24-2	Valving 2	1976	1976	1	1

Appendix E: Groundwater Well Maintenance Management Plan

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SSWD Groundwater Well Maintenance Management Plan (MMP)

MMP 1. Weekly PM Activities

Object/Activity	Estimated hours (does not include travel time)	Hours per year, per site	Notes	Wells
Weekly Rounds (NSA)-M/TH	0.4	41.6	This totals to 0.8 hours/week because they visit twice (times 52 weeks/year)	All NSA wells
Weekly Rounds (SSA)-M/W/F	0.5	78	This totals to 1.5 hours p/week because they visit three times (times 52 weeks/year)	All SSA wells

Note: Assume 1 person per activity unless noted

MMP 2. PM Activities Performed Monthly

Object/Activity	Estimated hours (does not include travel time)	Hours per year, per site	Notes	Wells
Generator Only				
Generator Exercise with no Load (Inspect and exercise)	0	0	This activity actuially takes a total of an hour. The estimated labor hour is zero because the generator exercise is completed in combination with other activities such as a weekly inspection	33A, 40A, 4B, 55A, 56A,59A, 66, 72, N10, N17, N23A, N29, N32, N35, N38, N39, N5
Total Hours	**0**	**0**		
Prominent Analyzer				
Prominent Chemical Analyzer (calibration)	0.5	6		32A, N6A, N39
Total Hours	**0.5**	**6**		
Hach Analyzer				
Hach Chemical Analyzer (Reagent and replacement)	1.5	18		N36
Total Hours	**1.5**	**18**		

Note: Assume 1 person per activity unless noted

MMP 3. PM Activities Performed Every 3 Months

Object/Activity	Estimated hours (does not include travel time)	Hours per year, per site	Notes	Wells
Generator Only				
Generator Exercise with Load (Inspect and exercise)	0.5	2	This activity actuially takes a total of an hour. The estimated labor hour is only 0.5 because the generator exercise is completed in combination with other activities	33A, 40A, 4B, 55A, 56A,59A, 66, 72, N10, N17, N23A, N29, N32, N35, N38, N39, N5
Total Hours	**0.5**	**2**		
Tesco Endurance VFD				
Tesco Endurance VFD's (Clean the intake and exhaust filters)	0.5	2	The Tesco Endurance VFD's have self-contained cooling and they run without refrigerated A/C. These VFDs intake and exhaust filters must be cleaned quarterly.	N6A, N25
Total Hours	**0.5**	**2**		

Note: Assume 1 person per activity unless noted

MMP 4. PM Activities Performed Every 6 Months

Object/Activity	Estimated hours (does not include travel time)	Hours per year, per site	Notes	Wells
Well has Prominent Analyzer (both an HVAC and Exhaust Fan)				
Prominent Chemical Analyzer (electrolyte replacement)	1	2		N39
Climate Control (per unit) (Inspect and clean)				
HVAC, clean coils, filters	1	2	Outsourced but need an escort	
Supply and exhaust fans	0.5	1	Outsourced but need an escort	
Total Hours	**2.5**	**5**		
Well has Prominent Analyzer (just an Exhaust Fan)				
Prominent Chemical Analyzer (electrolyte replacement)	1	2		32A
Climate Control (per unit) (Inspect and clean)				
Supply and exhaust fans	0.5	1	Outsourced but need an escort	
Total Hours	**1.5**	**3**		
Well has Hach Analyzer (both an HVAC and Exhaust Fan)				
Hach Chemical Analyzer (Reagent Tubing)	1	12		N36
Climate Control (per unit) (Inspect and clean)				
HVAC, clean coils, filters	1	2	Outsourced but need an escort	
Supply and exhaust fans	0.5	1	Outsourced but need an escort	
Total Hours	**1.5**	**3**		
Well has no Analyzer (both an HVAC and Exhaust Fan)				
Climate Control (per unit) (Inspect and clean)				33A, 40A, 56A, 59A, 72
HVAC, clean coils, filters	1	2	Outsourced but need an escort	
Supply and exhaust fans	0.5	1	Outsourced but need an escort	
Total Hours	**1.5**	**3**		
Well has no Analyzer (just Exhaust Fan)				
Climate Control (per unit) (Inspect and clean)				N20
Supply and exhaust fans	0.5	1	Outsourced but need an escort	
Total Hours	**0.5**	**1**		
Well has no Analyzer (just an HVAC)				
Climate Control (per unit) (Inspect and clean)				4B, 55A, 71, N5, N10, N34, N35, N38
HVAC, clean coils, filters	1	2	Outsourced but need an escort	
Total Hours	**1**	**2**		

Note: Assume 1 person per activity unless noted

MMP 5. PM Activities Performed Annually (1-year)

Object/Activity	Estimated hours (does not include travel time)	Hours per year, per site	Notes	Wells
SSA with Generator				
SSWD Backflow (testing & documentation)	0.75	0.75		66, 33A, 40A, 4B, 72, 55A
Check Valve (visual external and listening for backflow)	--	--	Completed with weekly rounds	
Chlorination/dichlorination system (cleaning, rebuilding, replacing)	3.5	3.5		
Fluoride system (cleaning, rebuilding, replacing)	7	7	2 people, 3.5 hours each	
Valve Exercise (operate valve)	1	1		
Well Efficiency Testing (test, measure, analyze)	2	2	Outsourced but need an operator	
Hydraulic Valve (pilot controls) (clean and exercise)	1.5	1.5		
Level Transducer (Inspect and calibrate)	1.5	1.5		
Motor (annual maintenance) (change oil, inspect, lubricate)	2	2		
Motor Control Center/VFD/RTU (filter change, thermography)	0	0	Hours covered when working on another activity	
Motor Operated Valve (performance test and calibrate)	0.5	0.5		
Pressure Transducer (test and calibrate)	0.5	0.5		
Sump Pump and Sump Cleaning (clean and inspect)	1.5	1.5		
Generator (annual maintenance) (oil and filter change and inspection of all hoses and belts)	0	0	Hours covered when working on another activity	
Total Hours	**21.75**	**21.75**		
NSA with Generator				
SSWD Backflow (testing & documentation)	0.75	0.75		56A, 59A,N10, N17, N23A, N29, N32, N35, N38, N39, N5
Check Valve (visual external and listening for backflow)	--	--	Completed with weekly rounds	
Chlorination/dichlorination system (cleaning, rebuilding, replacing)	3.5	3.5		
Valve Exercise (operate valve)	1	1		
Well Efficiency Testing (test, measure, analyze)	2	2	Outsourced but need an operator	
Hydraulic Valve (pilot controls) (clean and exercise)	1.5	1.5		
Level Transducer (Inspect and calibrate)	1.5	1.5		
~~Motor~~ Vertical Turbine Motor (annual maintenance) (change oil, inspect, lubricate)	2	2		
Motor Control Center/VFD/RTU (filter change, thermography)	0	0	Hours covered when working on another	
Motor Operated Valve (performance test and calibrate)	0.5	0.5		
Pressure Transducer (test and calibrate)	0.5	0.5		
Sump Pump and Sump Cleaning (clean and inspect)	1.5	1.5		
Generator (annual maintenance) (oil and filter change and inspection of all hoses and belts)	0	0	Hours covered when working on another activity	
Total Hours	**14.75**	**14.75**		

Note: Assume 1 person per activity unless noted

MMP 5. PM Activities Performed Annually (1-year) (continued)

Object/Activity	Estimated hours (does not	Hours per year, per site	Notes	Wells
SSA No Generator				
SSWD Backflow (testing & documentation)	0.75	0.75		All other SSA wells other than 66, 33A, 40A, 4B, 72, 55A
Check Valve (visual external and listening for backflow)	--	--	Completed with weekly rounds	
Chlorination/dichlorination system (cleaning, rebuilding, replacing)	3.5	3.5		
Fluoride system (cleaning, rebuilding, replacing)	7	7	2 people, 3.5 hours each	
Valve Exercise (operate valve)	1	1		
Well Efficiency Testing (test, measure, analyze)	2	2	Outsourced but need an operator	
Hydraulic Valve (pilot controls) (clean and exercise)	1.5	1.5		
Level Transducer (Inspect and calibrate)	1.5	1.5		
inspect, lubricate)	2	2		
Motor Control Center/VFD/RTU (filter change, thermography)	0	0	Hours covered when working on another	
Motor Operated Valve (performance test and calibrate)	0.5	0.5		
Pressure Transducer (test and calibrate)	0.5	0.5		
Sump Pump and Sump Cleaning (clean and inspect)	1.5	1.5		
Total Hours	**21.75**	**21.75**		
NSA No Generator				
SSWD Backflow (testing & documentation)	0.75	0.75		All other NSA wells other than 56A, 59A,N10, N17, N23A, N29, N32A, N35, N38, N39, N5
Check Valve (visual external and listening for backflow)	--	--	Completed with weekly rounds	
Chlorination/dichlorination system (cleaning, rebuilding, replacing)	3.5	3.5		
Valve Exercise (operate valve)	1	1		
Well Efficiency Testing (test, measure, analyze)	2	2	Outsourced but need an operator	
Hydraulic Valve (pilot controls) (clean and exercise)	1.5	1.5		
Level Transducer (Inspect and calibrate)	1.5	1.5		
inspect, lubricate)	2	2		
Motor Control Center/VFD/RTU (filter change, thermography)	0	0	Hours covered when working on another	
Motor Operated Valve (performance test and calibrate)	0.5	0.5		
Pressure Transducer (test and calibrate)	0.5	0.5		
Sump Pump and Sump Cleaning (clean and inspect)	1.5	1.5		
Total Hours	**14.75**	**14.75**		

Note: Assume 1 person per activity unless noted

MMP 5. PM Activities Performed Annually (1-year) (continued)

Object/Activity	Estimated hours (does not	Hours per year, per site	Notes	Wells
Well 32A (no Generator)				
SSWD Backflow (testing & documentation)	0.75	0.75		32A
Check Valve (visual external and listening for backflow)	--	--	Completed with weekly rounds	
Chlorination/dichlorination system (cleaning, rebuilding, replacing)	3.5	3.5		
Fluoride system (cleaning, rebuilding, replacing)	7	7	2 people, 3.5 hours each	
Valve Exercise (operate valve)	1	1		
Well Efficiency Testing (test, measure, analyze)	2	2	Outsourced but need an operator	
Hydraulic Valve (pilot controls) (clean and exercise)	1.5	1.5		
Level Transducer (Inspect and calibrate)	1.5	1.5		
~~Motor~~ Vertical Turbine Motor (annual maintenance) (change oil, inspect, lubricate)	2	2		
Motor Control Center/VFD/RTU (filter change, thermography)	0	0	Hours covered when working on another	
Motor Operated Valve (performance test and calibrate)	0.5	0.5		
Pressure Transducer (test and calibrate)	0.5	0.5		
Sump Pump and Sump Cleaning (clean and inspect)	1.5	1.5		
Treatment Facility Backwash Tank/Sump (Empty, clean, inspect)	4	4		
Filter Vessel (tank) Inspection (inspect)	8	8	2 people, 4 hrs. each	
Total Hours	**33.75**	**33.75**		
Well N6A (no Generator)				
SSWD Backflow (testing & documentation)	0.75	0.75		N6A
Check Valve (visual external and listening for backflow)	--	--	Completed with weekly rounds	
Chlorination/dichlorination system (cleaning, rebuilding, replacing)	3.5	3.5		
Valve Exercise (operate valve)	1	1		
Well Efficiency Testing (test, measure, analyze)	2	2	Outsourced but need an operator	
Hydraulic Valve (pilot controls) (clean and exercise)	1.5	1.5		
Level Transducer (Inspect and calibrate)	1.5	1.5		
~~Motor~~ Vertical Turbine Motor (annual maintenance) (change oil, inspect, lubricate)	2	2		
Motor Control Center/VFD/RTU (filter change, thermography)	0	0	Outsourced but need an operator	
Motor Operated Valve (performance test and calibrate)	0.5	0.5		
Pressure Transducer (test and calibrate)	0.5	0.5		
Sump Pump and Sump Cleaning (clean and inspect)	1.5	1.5		
Treatment Facility Backwash Tank/Sump (Empty, clean, inspect)	4	4		
Filter Vessel (tank) Inspection (inspect)	8	8	2 people, 4 hrs. each	
Total Hours	**26.75**	**26.75**		

Note: Assume 1 person per activity unless noted

MMP 6. PM Activities Performed Every 3 Years

Object/Activity	Hours per site	Notes	Wells
Prominent Analyzer (no Tank)			
Air Release Valve (inspect and change gaskets)	2		32A, N39, N6A
Alarm System (change batteries)	0.5		
RTU/PLC (change batteries)	0.5		
Prominent Chemical Analyzer (Probe replacement)	1.5		
Hydraulic Valve (inspect valve seat and replace diaphragm)	5	2 people, 2.5 hrs. each	
Total Hours	**9.5**	3.17	
Hach Chemical Analyzer (no tank)			
Air Release Valve (inspect and change gaskets)	2		N36
Alarm System (replace batteries)	0.5		
RTU/PLC (replace batteries)	0.5		
Hydraulic Valve (inspect seat, replace diaphragm)	5	2 people, 2.5 hrs. each	
Total Hours	**8**	2.67	
No Chemical Analyzer (with 1 Tank)			
Air Release Valve (inspect and change gaskets)	2		18, 20A, 34, 35, 40A, 56A, 64, 65, 66, 69, 70, 72, 77, MCC1, N17, N22, N24, N3, N9
Alarm System (replace batteries)	0.5		
RTU/PLC (replace batteries)	0.5		
Hydraulic Valve (inspect seat, replace diaphragm)	5	2 people, 2.5 hrs. each	
Hydropneumatics Tank Air Compressor (replace filter)	0.5		
Tank (clean and inspect)	24	Outsourced w/ operator(s) assistance	
Total Hours	**32.5**	10.83	
No Chemical Analyzer (with 2 Tanks)			
Air Release Valve (inspect and change gaskets)	2		24, 26
Alarm System (replace batteries)	0.5		
RTU/PLC (replace batteries)	0.5		
Hydraulic Valve (inspect seat, replace diaphragm)	5	2 people, 2.5 hrs. each	
Hydropneumatics Tank Air Compressor (replace filter)	1		
Tank (clean and inspect)	48	Outsourced w/ operator(s) assistance	
Total Hours	**57**	19.00	

Note: Hours are to occur every 3 years.

Well Name	Well No.	Service Area	Weekly	1-Month	3-Month	6-Month	1-Year	Annual Total (Column F-I)	3- Year	5-Year	3-Year Total (Annual plus Column M)	Address
Active Wells												
El Prado / Park Estates	2A	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	2250 Park Estates Dr.
Kubel / Armstrong	3A	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	1791 Kubel Circle
Bell / Marconi	4B	SSA	78.0	12.0	2.0	2.0	21.8	115.8	8.0	0.0	123.8	2841 Bell St.
Ravenwood / Eastern	9	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	4308 Ravenwood Ave.
Calderwood / Marconi	13	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	2951 Calderwood Ln.
Riding Club / Ladino	18	SSA	78.0	12.0	0.0	0.0	21.8	111.8	32.5	1.5	144.3	4012 Riding Club Lane
Watt / Arden	20A	SSA	78.0	12.0	0.0	0.0	21.8	111.8	32.5	1.5	144.3	Northeast corner of Watt Ave. and Arden Way
Becerra / Woodcrest	24	SSA	78.0	12.0	0.0	0.0	21.8	111.8	57.0	1.5	168.8	3858 Woodcrest Ave.
Thor / Mercury	25	SSA	78.0	12.0	2.0	0.0	21.8	113.8	8.0	0.0	121.8	4420 Thor Way
Greenwood / Marconi	26	SSA	78.0	12.0	0.0	0.0	21.8	111.8	57.0	1.5	168.8	4501 Marconi Ave.
Melrose / Channing	27	NSA	78.0	12.0	0.0	0.0	14.8	104.8	8.0	0.0	112.8	6503 Melrose Dr.
Red Robin / Darwin	28	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	West end of Red Robin Lane
Rockbridge / Keith	30	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	2116 Rockbridge Rd.
Eden / Root	32A	SSA	78.0	6.0	0.0	3.0	33.8	120.8	9.5	0.0	130.3	Root Ave. and Eden Ct.
Auburn / Norris	33A	SSA	78.0	12.0	2.0	3.0	21.8	116.8	8.0	0.0	124.8	Southwest Corner of Auburn Blvd.and Norris Ave.
Ulysses / Mercury	35	SSA	78.0	12.0	0.0	0.0	21.8	111.8	32.5	1.5	144.3	4421 Ulysses Dr.
Morse / Cottage Park	37	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	3169 Ellington Circle
Auburn / Yard	40A	SSA	78.0	12.0	2.0	3.0	21.8	116.8	32.5	1.5	149.3	2736 Auburn Blvd.
Albatros / Iris	41	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	1812 Iris Ave., Enter off of Albatross
Edison / Truax	43	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	3101 Truax Ct., Enter off of Edison
Jonas / Sierra Mills	46	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	1062 Jonas Ave.
Copenhagen / Arden	47	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	1631 Copenhagen Wy.
Weddigen / Gothberg	52	NSA	78.0	12.0	0.0	0.0	14.8	104.8	8.0	0.0	112.8	6820 Weddigan Wy.
Stewart / Lynndale	55A	SSA	78.0	12.0	2.0	2.0	21.8	115.8	8.0	0.0	123.8	1210 Stewart Rd.
Fairbairn / Karl	56A	NSA	78.0	12.0	2.0	3.0	14.8	109.8	32.5	1.5	142.3	North end Fairbairn
Bainbridge / Holmes School	59A	NSA	78.0	12.0	2.0	3.0	14.8	109.8	8.0	0.0	117.8	3948 Bainbridge Dr.
Whitney / Concetta	60	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	4530 Whitney Ave.
Galbrath / Antelope Woods	64	NSA	78.0	12.0	0.0	0.0	14.8	104.8	32.5	1.5	137.3	North side of Galbrath west of Antelope Woods
Merrily / Annadale	65	SSA	78.0	12.0	0.0	0.0	21.8	111.8	32.5	1.5	144.3	East end of Merrily Wy.
Eastern / Woodside Church	66	SSA	78.0	12.0	2.0	0.0	21.8	113.8	32.5	1.5	146.3	3312 Eastern Ave.
Northrop / Dornajo	68	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	Northwest corner of Northrop and Dornajo
Hilldale / Cooper	69	SSA	78.0	12.0	0.0	0.0	21.8	111.8	32.5	1.5	144.3	2800 Hilldale Rd.
Sierra / Blackmer	70	SSA	78.0	12.0	0.0	0.0	21.8	111.8	32.5	1.5	144.3	2281 Sierra Blvd.
Rodney T. Franz	71	SSA	78.0	12.0	0.0	2.0	21.8	113.8	8.0	0.0	121.8	1200 Jacob Ln. , Northwest of football field
River Walk / NETP	72	SSA	78.0	12.0	2.0	3.0	21.8	116.8	32.5	1.5	149.3	1000 River Walk Way
River Walk / NETP East	73	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	1000 River Walk Way
River Walk / NETP South	74	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	1000 River Walk Way
Fulton / Fair Oaks	76	SSA	78.0	12.0	0.0	0.0	21.8	111.8	8.0	0.0	119.8	541 Munroe St. , In alley north side of Lioehmann's Plaza
Larch / Northrop	77	SSA	78.0	12.0	0.0	0.0	21.8	111.8	32.5	1.5	144.3	870 Larch Lane
McClellan	MC10	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	
Evergreen	N1	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	4343 Dartmouth Drive

Well Name	Well No.	Service Area	Weekly	1-Month	3-Month	6-Month	1-Year	Annual Total (Column F-I)	3- Year	5-Year	3-Year Total (Annual plus Column M)	Address
Engle	N3	NSA	41.6	12.0	0.0	0.0	14.8	68.4	32.5	1.5	100.9	4802 Engle Rd.
Hillsdale	N5	NSA	41.6	12.0	2.0	2.0	14.8	72.4	8.0	0.0	80.4	4618 Keema
Palm	N6A	NSA	41.6	6.0	2.0	0.0	26.8	76.4	9.5	0.0	85.9	5600 Palm
Rosebud	N7	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	5831 Rosebud
Field	N8	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	Access on Greenback Lane across from cemetary
Cameron	N9	NSA	41.6	12.0	0.0	0.0	14.8	68.4	32.5	1.5	100.9	4630 Cameon Ranch
Walnut	N10	NSA	41.6	12.0	2.0	2.0	14.8	72.4	8.0	0.0	80.4	5331 Walnut Ave.
St. Johns	N12	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	5753 Locust
Orange Grove	N14	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	2987 Orange Grove
Oakdale	N17	NSA	41.6	12.0	2.0	0.0	14.8	70.4	32.5	1.5	102.9	3710 Myrtle Ave
Cypress	N20	NSA	41.6	12.0	0.0	1.0	14.8	69.4	8.0	0.0	77.4	5210 Cypress Ave.
River College	N22	NSA	41.6	12.0	0.0	0.0	14.8	68.4	32.5	1.5	100.9	4735 River College
Freeway	N23A	NSA	41.6	12.0	2.0	0.0	14.8	70.4	8.0	0.0	78.4	4517 Freeway Circle
Don Julio	N24	NSA	41.6	12.0	0.0	0.0	14.8	68.4	32.5	1.5	100.9	4317 Don Julio Blvd
Sutter	N25	NSA	41.6	12.0	2.0	0.0	14.8	70.4	8.0	0.0	78.4	4324 Elkhorn
Monument	N26	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	Monogram & Monument
Merrihill	N29	NSA	41.6	12.0	2.0	0.0	14.8	70.4	8.0	0.0	78.4	5932 Ellerslee
Park Oaks	N30	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	6016 Park Oaks Dr
Poker (A)	N32A	NSA	41.6	12.0	2.0	0.0	14.8	70.4	8.0	0.0	78.4	5771 Poker Lane
Poker (B)	N32B	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	5771 Poker Lane
Cottage	N34	NSA	41.6	12.0	0.0	2.0	14.8	70.4	8.0	0.0	78.4	4001 Elverta Rd
Antelope North	N35	NSA	41.6	12.0	2.0	2.0	14.8	72.4	8.0	0.0	80.4	Great Valley Raod
Verner	N36	NSA	41.6	18.0	0.0	3.0	14.8	77.4	8.0	0.0	85.4	Verner Avenue
Coyle	N38	NSA	41.6	12.0	2.0	2.0	14.8	72.4	32.0	0.0	104.4	Coyle Avenue
Rutland	N39	NSA	41.6	6.0	2.0	5.0	14.8	69.4	9.5	0.0	78.9	Rutland Drive
Hours Sub-Total			**4165.2**	**780.0**	**40.0**	**43.0**	**1235.5**	**6263.7**	**1071.0**	**28.5**	**7334.7**	

Standby Wells												
La Cienega / Melrose	34	NSA	41.6	12.0	0.0	0.0	14.8	68.4	32.5	1.5	100.9	6503 La Cienega Dr.
Thomas / Elkhorn	39	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	6900 Thomas Dr.
Capehart 1C	MC-C1	NSA	41.6	12.0	0.0	0.0	14.8	68.4	32.5	1.5	100.9	Navaho Dr. North of the West entrance gate guardhouse
Capehart 3C	MC-C3	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	South side of Navaho Dr. south of golf course maintenance yard.
Poker (C)	N32C	NSA	41.6	12.0	0.0	0.0	14.8	68.4	56.0	0.0	124.4	5771 Poker Lane
Walerga	N33	NSA	41.6	12.0	0.0	0.0	14.8	68.4	8.0	0.0	76.4	
Hours Sub-Total			**250**	**72**	**0**	**0**	**89**	**410**	**145**	**3**	**555**	

	Annual Hours	# FTE
1 FTE = 1500 Hours	6673	4.5

SSWD Groundwater Well Maintenance Management Plan

MMP 1. Weekly PM Activities

Object/Activity	Detailed Activity List
Weekly Rounds (NSA)-M/TH	• Security check • Safety check (eye wash station and/or fire extinguisher) • Sanitary check • Motor check (fluid levels, noises, etc.) • Automatic Control Valve (ACV) checks • Air Release Valve (ARV) checks • Discharge piping and hydro tank checks • Chlorine system checks • Internal Combustion Engine (ICE) checks • Production Data Capture (PDC) entries
Weekly Rounds (SSA)-M/W/F	• Security check • Safety check (eye wash station and/or fire extinguisher) • Sanitary check • Motor check (fluid levels, noises, etc.) • Automatic Control Valve (ACV) checks • Air Release Valve (ARV) checks • Discharge piping and hydro tank checks • Chlorine system checks • Fluoride system checks • Internal Combustion Engine (ICE) checks • Production Data Capture (PDC) entries

MMP 2. PM Activities Performed Monthly

Object/Activity	
Prominent Analyzer	
Prominent Chemical Analyzer (calibration)	• Inspect and clean chambers • Calibrate analyzer
Hach Analyzer	
Hach Chemical Analyzer (Reagent replacement)	• Clean the colorimeter • Inspect and clean tubing as needed • Change reagents • Prime analyzer • Verify calibration of analyzer

MMP 3. PM Activities Performed Every 3 Months

Object/Activity	
Generator Only	
Generator Exercise with Load (Inspect and exercise)	• Turn off well • Pre-Inspection • Remove utility power • Turn on well while I.C.E. unit is supporting facility • Inspection while under load • Turn off well • Restore utility power • Document in the PDC

MMP 4. PM Activities Performed Every 6 Months

Object/Activity	
Well has Prominent Analyzer (both an HVAC and Exhaust Fan)	
Prominent Chemical Analyzer (electrolyte replacement)	• Inspect and clean chambers • Cap and electrolyte replacement • Calibrate analyzer
Climate Control (Inspect and clean)	• Inspect, clean or replace filter • Inspect and replace pulleys and belts as needed • Clean condenser and evaporator coils • Clean drain lines for proper flow and clear clogs • Clear drain pans of any standing water to avoid overflows • Inspect ducts for mold, dust, and debris • Check refrigerant charge and inspect for leaks if charge is low • Check electrical connections • Check operation of fan and blower motor and adjust if needed • Lubricate motors, bearings and other moving parts • Check operation of thermostats and other controls

MMP 5. PM Activities Performed Annually (1-year)

Object/Activity	
SSWD Backflow (testing & documentation)	• Test backflow prevention device • Document
Check Valve (visual external and listening for backflow/leak)	• Visual inspection of external condition • Listening for backflow/leaks
Chlorination/dichlorination system (cleaning, rebuilding, replacing)	• Inspect, and clean injection quill. Replace as needed • Replace the clear double containment tubing • Rebuild the positive displacement and peristaltic chemical pump liquid ends • Transfer chemical to temporary drums on double containment • Clean the double containment vat • Calibrate the vat scale 4-20mA output (if present) • Transfer chemical back to double containment vat • Prime pump • Verify pump stroke, speed, and/or flow pacing • Run well and confirm dosing
Fluoride system (cleaning, rebuilding, replacing)	• Inspect, and clean injection quill assembly. Replace as needed. • Replace the clear double containment tubing • Rebuild the peristaltic chemical pump liquid ends • Transfer HFA to temporary drums on double containment • Clean HFA double containment vat • Calibrate scale the HFA vat scale 4-20mA output • Transfer HFA back to facility double containment vat • Prime pump • Verify pump speed and/or flow pacing • Run well and confirm dosing
Valve Exercise (operate valve)	• Operate valve, fully open and full close
Well Efficiency Testing (test, measure, analyze)	• Verify calibration of level and pressure transducer • Measure static and dynamic Level • Perform testing • Perform thermal measurements • Analyze and document results
Hydraulic Valve (pilot controls) (clean and exercise)	• Flush pilot controls • Clean and inspect filter • Clean and exercise needle valves • Flush upper chamber • Exercise actuator • Operate facility to confirm operation
Level Transducer (Inspect and calibrate)	• Perform static water level • Calibrate pressure transducer • Run well • Perform dynamic water level to verify calibration • Return well to normal operations
Motor (annual maintenance) (change oil, inspect, lubricate)	• Change turbine oil • Clean sight glasses • Clean screens • Inspect the clutch and ratchet bolts • Clean and change the oil in the dripper reservoir and needle valve • Inspect shaft packing and add/replace packing ring as needed

MMP 5. PM Activities Performed Annually (1-year) (Continued

Object/Activity	
Motor Control Center/VFD/RTU (filter change, thermography)	• Clean and vacuum MCC and Electrical panel • Perform a infrared thermal inspection • Confirm proper torque on all wire connection terminals • Clean or replace filters • Lube all latches and hinges
Motor Operated Valve (performance test and calibrate)	• Performance test • Calibrate
Pressure Transducer (test and calibrate)	• Measure pressure and compare • Calibrate
Sump Pump and Sump Cleaning (clean and inspect)	• Ensure the float and the check valve move freely • Clean pump • Clean sump pump • Test sump pump
Generator (annual maintenance) (oil and filter change and inspection of all hoses and belts)	• Clean or replace air filter • Replace all fuel filters • Replace oil and filters for crankcase • Clean/vacuum control panel and connections enclosure • Inspect all hoses, belts, and fluids • Inspection of air induction and exhaust system • Inspection of cooling system • Inspection of lube oil system • Inspection of engine starting system • Inspection of monitors and safety controls • Inspection of AC power unit • Inspection of generator mechanical components (bushings, bearings, etc.)
Treatment Facility Backwash Tank/Sump	• Reclaim/decant to sludge levels • Perform sampling if required • Submit discharge permit • Schedule contractor (WE32A) • Vac sump (WE32A) or discharge (WEN6A) as per permit
Filter Vessel (tank) Inspection	• Perform complete backwash to clean media bed • Relieve pressure, drain tank for 5 minutes, and open manways • Continue draining until water is just below top of media surface • Examine and assess media surface • Inspect all surface wash nozzles. Remove and clean as needed (confined space) • Seal manways and recharge filter evacuating all air • Verify chlorine residual in filter and perform a bacti sample • Operate facility for performance testing

MMP 6. PM Activities Performed Every 3 Years

Object/Activity	
Prominent Analyzer (1 tank)	
Air Release Valve (inspect and change gaskets)	• Inspect and clean interior housing • Insect and replace rubber seat as needed • Inspect and clean float • Replace gasket • Pressurize and confirm functionality
Alarm System (replace batteries)	• Replace batteries • Contact security monitoring company • Perform a test of alarm system
RTU/PLC (replace batteries)	• Replace batteries
Prominent Chemical Analyzer (Probe replacement)	• Replace probe
Hydraulic Valve (inspect valve seat and replace diaphragm)	• Clean interior housing • Clean and inspect valve seating • Replace diaphragm • Operate facility to confirm operation
Tank (clean and inspect)	• Clean tank or reservoir • Inspect exterior structure • Inspect equipment including: ladder, guardrails, and all associated safety equipment • Inspect piping connections. • Inspect interior coating • Inspect reservoir foundation • Inspect cathodic protection system

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Appendix F: Typical Useful Life

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R/R Planning Assumptions					
Object Type	Replacement Cost	Typical Useful Life (Years)		Rehabilitation Frequency (Years)	Rehabilitation Cost
Air Release Valve	$1,000	30			
Alarm System	$10,000	15			
Backflow Assembly	$2,000	10			
Building	$400,000	80		30	$25,000
Check Valve	$5,000	20			
Chemical Analyzer	$15,000	15			
Chemical System	$20,000	10			
Climate Control	$10,000	15			
Electrical	$300,000	100			
Filter	$200,000	50		15	$100,000
Flow Meter	$15,000	15			
FRP Enclosure	$15,000	30			
Generator	$160,000	25			
Hydraulic Valve	$15,000	25			
Level Transducer	$5,000	7			
Motor - Booster	$30,000	25		8	$10,000
Motor - Other	$5,000	20			
Motor - Well	$45,000	25		8	$10,000
Motor Control Center	$100,000	25		5	$5,000
Motor Operated Valve	$24,000	15			
Piping	$400,000	100			
Pressure Transducer	$15,000	10			
Pump - Booster	$35,000	20		8	$10,000
Pump - Other	$15,000	20			
Pump - Well	$65,000	20		8	$20,000
Remote Telemetry Unit	$50,000	25			
Sand Separator	$25,000	20			
Sound Enclosure	$15,000	30			
Sump	$5,000	80			
Sump Pump	$1,500	10			
System Well – Low Risk	$500,000	60	78 (optimistic scenario)	8	$60,000
System Well – Medium Risk	$500,000	55		8	$60,000
System Well – High Risk	$500,000	50		8	$60,000
Tank	$75,000	50		10	$15,000
Valving	$3,000	35			
Variable Frequency Drive	$30,000	15			

Appendix F

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Brown AND Caldwell

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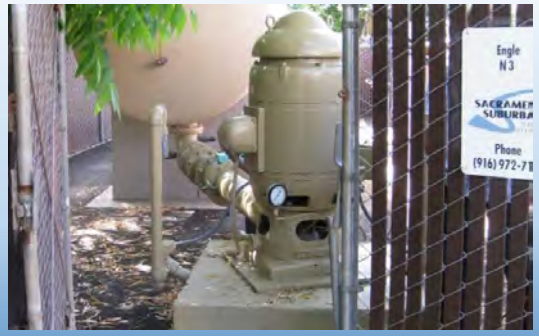
Groundwater Well Asset Management Plan

SACRAMENTO SUBURBAN WATER DISTRICT



Background

- In January 2009, the first Groundwater Well Asset Management Plan (GWAMP) was adopted by the Board of Directors.
- The 2009 GWAMP focused primarily on the borehole and well casing (below ground components) as these are the most expensive components of a production well facility.
- The proposed 2020 GWAMP is a complete revision focusing on the management of all well field assets down to the component level.
- Recognizing a need for outside expertise in this effort, SSWD issued an RFP for engineering services and Brown & Caldwell (B&C) was selected.
- B&C's expertise includes in depth experience and knowledge with asset management planning, risk assessment for water systems, and managing well asset inventory.

What is the purpose of the proposed 2020 GWAMP?

- Provide improved long term planning for the maintenance, repair, and replacement of groundwater wells.
- Bring focus to SSWD's existing strategy for maximizing useful life of the groundwater wells.
- Provide an overarching framework for achieving the GWAMP purpose and vision using SSWD's 2019 Strategic Plan's Goals.
- Transition from reactive to proactive maintenance, repair, and replacement of groundwater well assets and objects.

How will SSWD use the GWAMP?

The GWAMP will provide staff with "tools" to manage asset and object maintenance, repair, and replacement over their lifetime. These include:

- Utilize inventory of the existing groundwater wells (assets) and components (objects) and associated data sources to optimize preventive maintenance.
- Implement Performance Measures (indicators) to demonstrate progress on Levels of Service (LOS) set for the expectations for managing assets.
- Incorporate risk analysis criteria.
- Standardize condition assessment to provide decision makers with essential information to manage assets.
- Improve maintenance management strategies focused on scheduled preventive maintenance.
- Develop rehabilitation and replacement strategy to assist with future planning.

Asset and Object Inventory

Why do you need an asset and object inventory?

- Centralized repository of asset and object information
- Used to track and organize information, including:
  - Risk
  - Condition
  - Maintenance
  - Renewal/Replacement

What are the benefits?

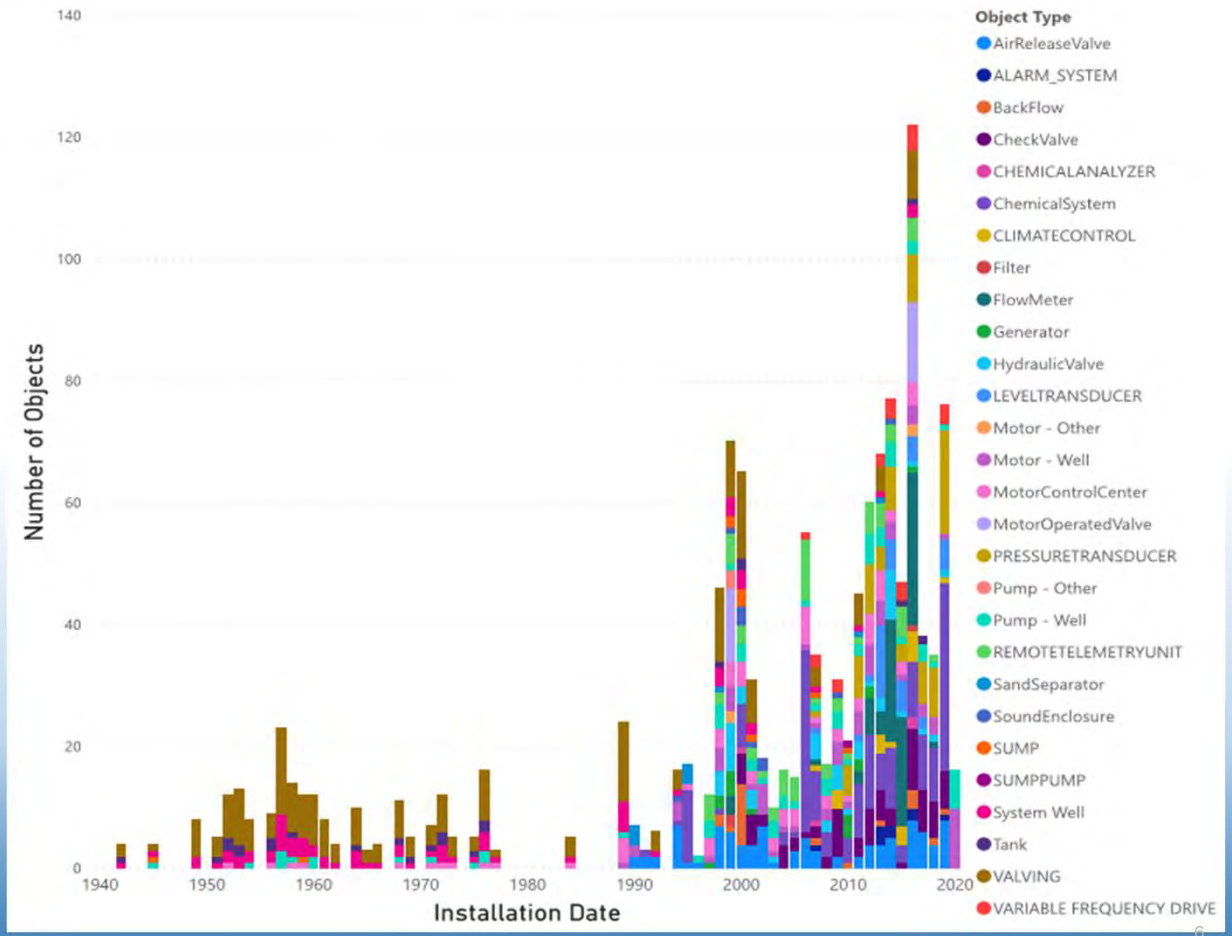
- Builds a solid foundation for asset management
  - More effective scheduling of preventive maintenance activities
  - Able to analyze failures to prevent future ones

Asset: Well & Pump Station (Well N38 Coyle)

Object: Valves, pump, motor, etc.

Object inventory is used to track, organize, and analyze object information

72 operational groundwater production wells (assets) comprised of 1,323 components (objects).



Level of Service (LOS) and Performance Measures

Key definitions to get on the right path

Level of Service (LOS)
The description of the service output for a particular activity or service area against which performance may be measured.

Performance Measure
A qualitative or quantitative measure used to measure actual performance against a standard or other target.

Performance Target
A specific quantifiable target for performance, used in reference to a performance measure.

LOS tied to SSWD Strategic Plan

- **LOS A** - Provide a High-Quality Reliable Water Supply by Ensuring it is Sustainable, Clean, and Safe
- **LOS B** - Optimize Operational and Organizational Efficiencies
- **LOS C** - Ensure Fiscal Responsibility and Affordable Rates
- **LOS D** - Maintain Excellent Customer Service
- **LOS E** - Retain and Recruit a Qualified and Stable Workforce

Identified GWAMP performance measures are to be collected, tracked, and analyzed

LOS A Performance Measures

- Supply capacity
- Regulatory compliance rate

LOS B Performance Measures

- Overtime
- Preventive maintenance/ predictive maintenance
- Direct energy usage per million gallons pumps

LOS C Performance Measures

- O&M cost/million gallons pumped

LOS D Performance Measures

- Customer complaints

LOS E Performance Measures

- Required certification rate
- Mandatory training rate
- Total recordable incident rate

Risk Management (RM)

Risk calculation

RISK = Consequence **of Failure** X Likelihood **of Failure**

The impact on level of service, utility, customers, or general public resulting from an object failure. Sometimes referred to as severity or criticality.

The chance of an occurrence; the possibility of something happening. Somewhat synonymous with "probability" but without the support of rigorous statistical analysis.

Source: Implementing Asset Management: A Practical Guide, WEF NACWA, and AMWA (2007)

Condition Assessment

Risk-based approach to condition assessment informs capital and maintenance decisions

- Complete desktop evaluations to prioritize where to perform initial site visits
- Use data to adjust risk assessment
- Focused on critical assets

Visual inspection of the critical assets

- SSWD staff performed visits accompanied by B&C subject matter experts
- Visited 6 wells (assets) and inspected 145 components (objects)
- Implemented a standardized approach for these inspections that can be used at the remaining wells
- Observations revealed expected and unexpected conditions – confirmed activities currently underway
- Results from these visits provided recommendations for immediate actions and long-term Rehabilitation/Replacement

Next steps with visual inspection activities

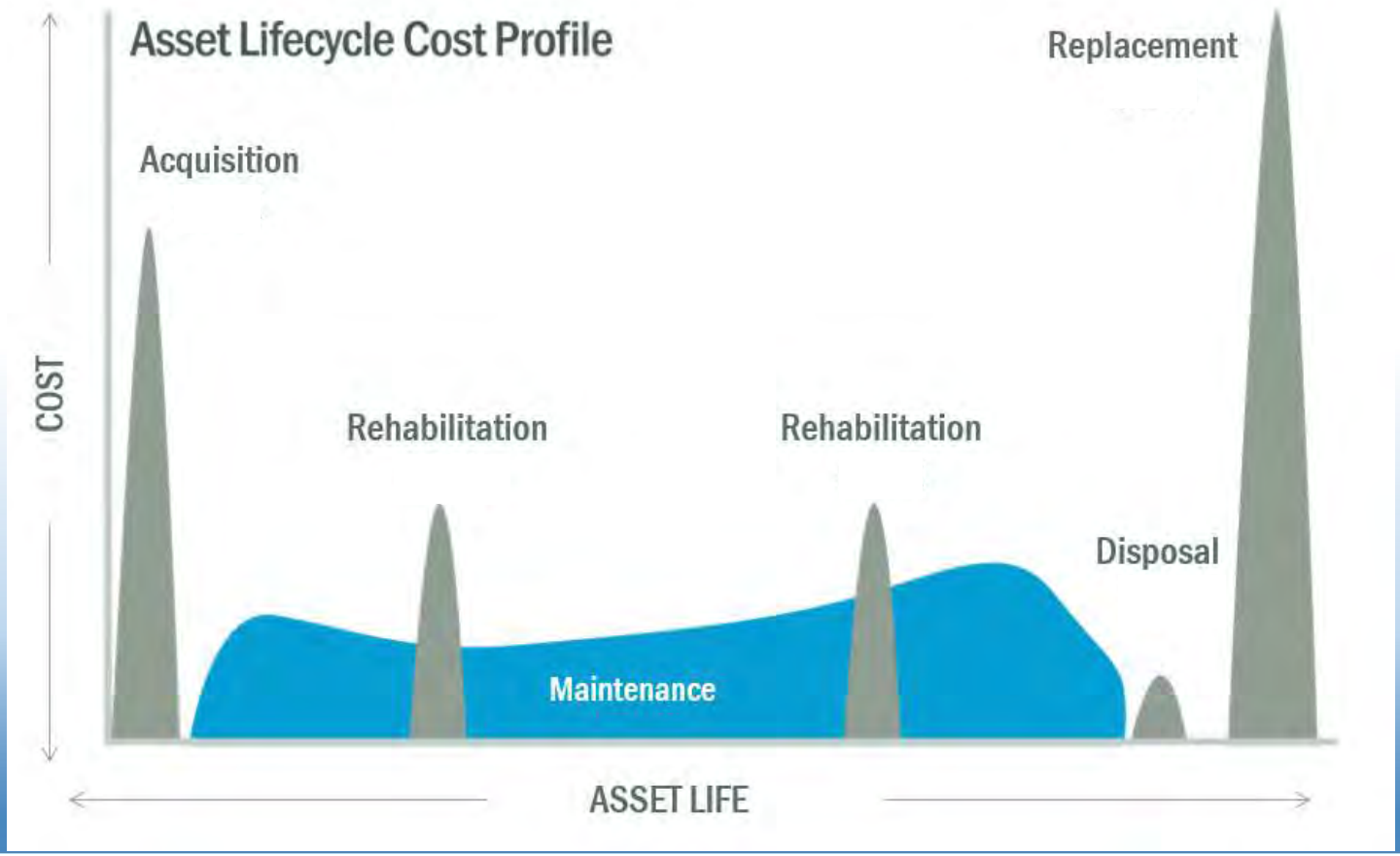
- Using the guidelines provided, perform visual inspection of the remaining objects
- Visual inspection of objects can occur during existing planned inspections
- IT, Operations, and Engineering are evaluating an electronic inspection template for data collection that can be readily uploaded into City Works
- Summarize the results and incorporate findings into the criticality spreadsheet
- Perform immediate repairs if needed, but use the results for planned investments and adjustments to the maintenance strategy

Maintenance Management

Maintenance Analysis

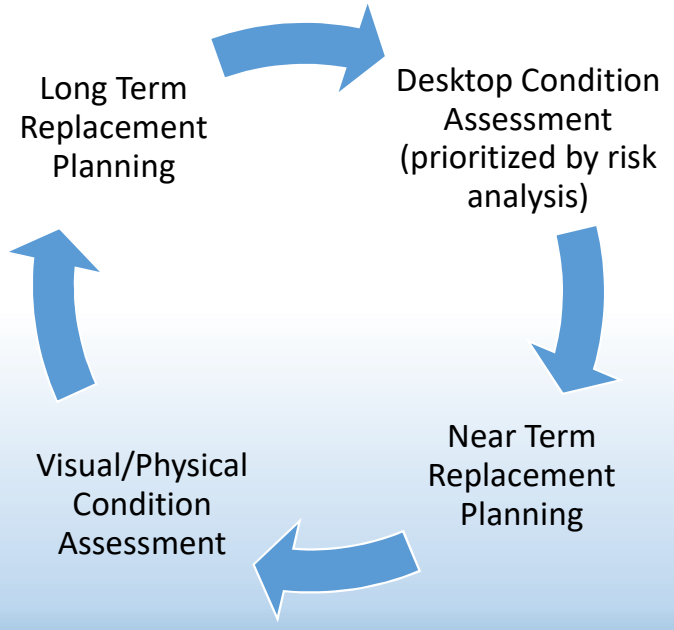
- Conducted workshops with Production Superintendent to understand current state of maintenance
- Evaluated current maintenance activities
- Developed a maintenance strategy plan
  - Used manufacturer's recommendations and SSWD staff experience to develop activities
  - Established frequencies of activities
  - Estimated labor hours to complete work
- Identified processes for continuous improvement

Groundwater Well Lifecycle



Long Term Well Planning Cycle

- Long term planning forecast shows average expected budgeting needs.
- Desktop Condition Assessment identifies near term budgeting needs for assets prioritized by risk analysis.
- Near term expenditures will be refined with visual/physical condition assessment data.
- Data from visual/physical condition assessments is used to refine the long term planning forecast.



Implementation Plan

The GWAMP Implementation Plan is the roadmap for SSWD to perform asset management of the groundwater wells

- The GWAMP needs to be more than a report on the shelf
- Implementation plan and schedule provide guidelines as follows:
  - Roles and responsibilities for SSWD staff
  - Recommendations, activities, and benefits
  - Estimated completion date and priority
  - Level of effort and responsible staff

Summary

Staff Recommendation:

Staff recommends that the Committee recommend approval of the updated plan by Consent to the full Board at their November 16, 2020, meeting.