




August 2024

Community Source Water Protection Plan

for —

Public Water Systems in the
Piute Valley, Clark County, Nevada, Planning Area 8

The Piute Valley, Clark County, Nevada Planning Area 8 Source Water Protection Partners:

Utility Services, Inc.
Universal Green Technology
Spirit Mountain Utility Company
Rural Water Association
Clark County Water Quality
Las Vegas Valley Water District
Nevada Division of Environmental Protection, Bureau of Safe Drinking Water
Resource Concepts, Inc., ISWPP Contractor

Executive Summary

This Community Source Water Protection Plan represents a unique collaboration of public water system representatives from the U.S. 95 corridor in Nevada's Piute Valley, Clark County, Planning Area 8 (as outlined in the Clark County 208 Area-Wide Water Quality Management Plan). The source water protection partners are comprised of representatives from the public water systems and County stakeholders, who established non-regulatory source water protection areas (Appendix A) which aim to protect and preserve the quality of drinking water in Clark County. Education, monitoring, and community participation play vital roles in local water quality management within the source water protection area boundaries to achieve one collective vision:

Protect source water to ensure the long-term sustainability of our drinking water supplies.

The Nevada Division of Environmental Protection, Bureau of Safe Drinking Water administers the Integrated Source Water Protection Program (ISWPP), a voluntary program aimed at preventing the contamination of source water. Source water in Nevada is defined as untreated groundwater, lakes, rivers, streams, or springs that supply public drinking water.

Source water in Piute Valley is groundwater, and three discrete community public water systems supply drinking water to Searchlight, Cal-Nev-Ari, and Palm Gardens. One transient non-community water system supplies drinking water to the Searchlight Welcome Center. In 2024, the Piute Valley public water system representatives authorized participation in the ISWPP to identify and manage potential risks to source water.

A comprehensive assessment compared groundwater flow magnitude and direction to an inventory of local facilities and activities that could pose risks to groundwater in Piute Valley. Evaluations to map source water protection areas and develop local strategies in Piute Valley build upon source water protection efforts throughout Clark County. The community-developed strategies include:

- Planning and Review
- Secure Locations for Future Water Systems
- Emerging Contaminants
- Public Education and Outreach
- Infrastructure and Wellhead Security

To guide implementation of these strategies, activities are outlined in the Action Plans and Public Education Plans for the discrete Piute Valley public water systems. These voluntary measures can be implemented as technical and financial resources become available.

To ensure its effectiveness, the partners intend to review the plan every two to five years to address changing conditions. This document serves as a valuable tool to foster collaboration between water purveyors, local and regional partners, and community members, all contributing to the protection of water quality for sources of public drinking water throughout Clark County.

Revision History

Revision Date	Description
1/21/2025	Added NDEP endorsement letters to Appendix B.

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Contains Sensitive Information*

Contact your local public water system for review.

Acronyms & Abbreviations

Acronym/ Abbreviation	Definition
ACEC	Area of Critical Environmental Concern
BSDW	Bureau of Safe Drinking Water
CSWP Plan	Community Source Water Protection Plan
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Area
GIS	Geographic Information System
ISWPP	Integrated Source Water Protection Program
LVVWD	Las Vegas Valley Water District
NDEP	Nevada Division of Environmental Protection
NDWR	Nevada Division of Water Resources
NPDES	National Pollutant Discharge Elimination System
PG	Palm Gardens Water Co-Op
PCSs	Potential Contaminant Sources
PWSs	Public Water Systems
SMU	Spirit Mountain Utility
SWC	Searchlight Welcome Center
SWPAs	Source Water Protection Areas
Team	Local Planning Team
USDA	United States Department of Agriculture
USGS	United States Geological Survey

1.0 Introduction

Source water is used to describe drinking water in the natural environment (surface or groundwater) before it's withdrawn, treated, and distributed to communities as a potable supply. Clean and safe drinking water is essential for any community to thrive, and source water protection is the first step a community takes to protect drinking water supplies from source to tap. This Community Source Water Protection Plan (CSWP Plan) includes public water systems in Nevada's in Piute Valley, Clark County, Planning Area 8 (Figure 1). It was a community effort that aims to protect and preserve drinking water sources. Source Water Protection Areas (SWPAs), non-regulatory boundaries which aim to protect and preserve the quality of drinking water in Clark County, are included as maps in Appendix A.

Figure 1. Location Map

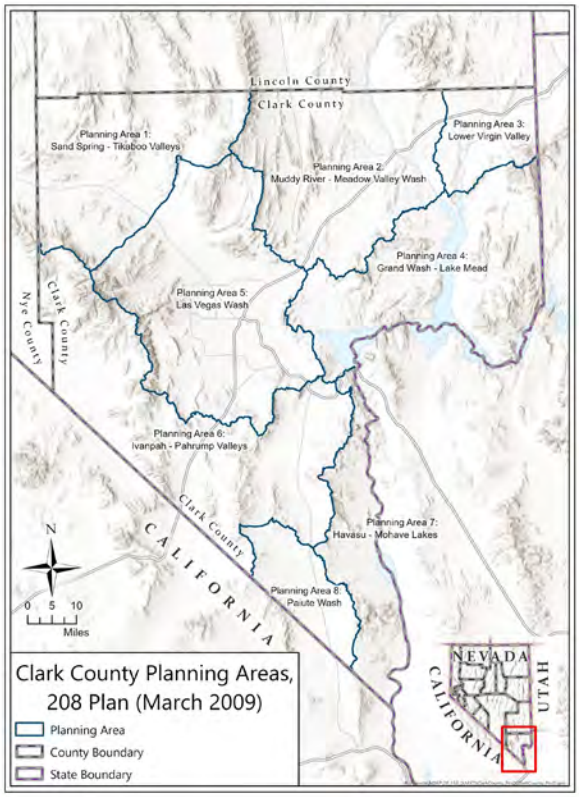

Figure 2. Clark County Planning Areas, 208 Plan (March 2009)

1.1 Source Water Protection Vision

The Clark County 208 Area-Wide Water Quality Management Plan (208 Plan) provides water quality planning for Clark County to a horizon year of 2030 (DAQEM, 2009). The 208 Plan identifies eight planning areas in Clark County (Figure 2) based on previous delineations by the United States Geological Survey (USGS) and the Nevada Division of Water Resources (NDWR). This CSWP Plan represents a unique collaboration of public water system (PWS) representatives from Nevada's Piute Valley, to fulfill one collective vision:

Protect source water to ensure the long-term sustainability of our drinking water supplies.

1.2 Community Source Water Protection Plan Goals

This CSWP Plan is a locally driven plan designed to foster cooperation and education among water providers, local and state agencies, industry, community leaders, and citizens. To fit the needs of each community, goals were formulated to guide CSWP Plan development and support the long-term vision and implementation of source water protection in Piute Valley. Those goals are:

1) Develop forward thinking, proactive approaches to protect source water quality, with ongoing community training and education.
2) Use source water protection in community planning and development.
3) Ensure drinking water sources are protected by improving and maintaining infrastructure.
4) Continual evaluation of alternative ways to secure water sources.

1.3 Nevada's Integrated Source Water Protection Program

Source water protection in Nevada is a voluntary and non-regulatory program designed to build local partnerships to protect community drinking water sources. The Nevada Integrated Source Water Protection Program (ISWPP), established by the Nevada Division of Environmental Protection (NDEP), offers a framework for local plan development, guided by ISWPP criteria. The public water systems in the Piute Valley, by obtaining ISWPP endorsement, can receive additional technical and public education and outreach assistance to implement source water protection. This CSWP Plan was written to meet NDEP's endorsement criteria.

1.4 Formation of Local Planning Teams

In January 2024, representatives from the Las Vegas Valley Water District (LVVWD) expressed interest in updating the 2004 *Wellhead Protection Plan for Searchlight Nevada's Public Water System* as part of Nevada's ISWPP. Subsequently, the Spirit Mountain Utility Company, Universal Green Technologies, Utility Services, Inc., Rural Water Association, and Clark County Water Quality met to discuss ISWPP participation. Both groups unanimously agreed that ISWPP participation could benefit the PWSs in Piute Valley as they work to ensure the long-term sustainability of their source water.

The Spirit Mountain Utility Company submitted a letter of request for participation in the ISWPP in January 2024. Several meetings took place through August 2024 where agendas and materials were typically provided at least one week in advance. Meeting notes are provided as Appendix B of this CSWP Plan, and the Piute Valley source water protection partners are outlined in Table 1.

Table 1. Piute Valley Source Water Protection Partners

Organization	Title	Role
Public Water System Representatives		
Utility Services, Inc.	Spirit Mountain Utility and NDOT Water Operator	Source water protection development and plan implementation and designated representative for the transient non-community water system in the Piute Valley.
Universal Green Technology, Inc.	Owner Spirit Mountain Utility	Source water protection development and board representation.
Spirit Mountain Utility	General Manager	Spirit Mountain Utility operations and administration.
Searchlight Public Water System (Las Vegas Valley Water District)	Manager/Supervisory Hydrologist, Water Resources Division	Responsible for research and development of technical data, drafting the Searchlight CSWP Plan, and facilitation and coordination with NDEP.
Local Partners		
Clark County Water Quality	Principal Planner, Water Quality, Clark County Water Reclamation District	County-wide source water protection planning, education, and outreach.
Technical Assistance		
Nevada Division of Environmental Protection, Bureau of Safe Drinking Water	Integrated Source Water Protection Program Coordinator	Plan development guidance.
Resource Concepts, Inc.	Integrated Source Water Protection Program Technical Assistance Contractor	Plan coordination and technical assistance.
Rural Water Association	Source Water Protection Specialist, Rural Water Association	Technical Assistance.

1.5 Piute Valley Approach

To ensure a comprehensive assessment of the three discrete community public water systems and one transient non-community water system, two evaluations have been integrated to derive this CSWP Plan. One evaluation focused on Spirit Mountain Utility Company, Palm Gardens Water Co-Op, and the NDOT Searchlight Welcome Center. The other focused on updating the 2004 *Wellhead Protection Plan for Searchlight Nevada's Public Water System*. This evaluation was spearheaded by the LVVWD. The assessments were completed separately due to differences in operations, size of the water systems, disposal of wastewater (septic systems versus centralized treatment), and unique risks inherent to the location of the water systems.

The LVVWD completed the CSWP Plan update for the Searchlight Public Water System (Searchlight Plan) coincident with the assessments for Spirit Mountain Utility, Palm Gardens Water Co-Op, and the NDOT Searchlight Welcome Center. The technical evaluation for Spirit Mountain Utility, Palm Gardens Water Co-Op, and the NDOT Searchlight Welcome Center can be found in Appendix C, and factsheets summarizing both assessments are included as Appendix D. The full version of the Searchlight Plan can be accessed via the LVVWD Website. Where appropriate, information from the Searchlight Plan has been integrated into this CSWP Plan.

Each assessment included mapping SWPAs, which are non-regulatory zones around drinking water sources. These zones help focus on educating the community and working together to protect the quality of drinking water. The SWPAs for Piute Valley are shown in maps in Appendix A and cover areas discussed in Section 3.2 for Spirit Mountain Utility, Palm Gardens Water Co-Op, the NDOT Searchlight Welcome Center, and the Searchlight Public Water System.

2.0 Description of Plan Area and Source Water

2.1 Location and Water Source inventory

The USGS, the NDWR, and the Department of Conservation and Natural Resources have divided the State into different hydrologic units for water planning and management purposes (NDWR, 2024). The PWSs in this CSWP Plan are located in Nevada's Piute Valley Groundwater Basin ID 214 (Figure 3). All PWSs in this CSWP Plan use groundwater from Basin 214 as their source water.

Nevada defines a public water system as, "a system, regardless of ownership, that provides the public with water for human consumption through pipes or other constructed conveyances" (NRS 445A.235). At the time of CSWP Plan development, the Piute Valley had:

- **Three Community Water Systems:** Has at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents (NRS 445A.808).
- **One Transient Non-Community Water System:** Regularly serves at least 25 non-residential (transient) individuals during 60 or more days per year. (NRS 445A.828).

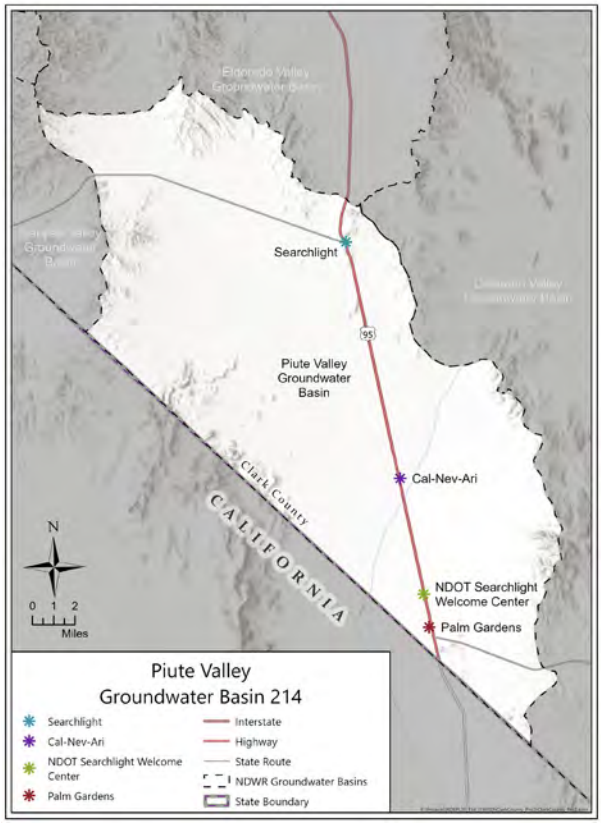

Figure 3. Piute Valley Groundwater Basin 214

Table 2. Piute Valley Public Water Systems and Water Source Inventory for this CSWP Plan

Water System Name and Number	Water Sources	Type	Population Served[1/]	Community Served
Spirit Mountain Utility Company: NV0000221	2 Active Wells 1 Inactive Well 1 Future Well	Community	375	Cal-Nev-Ari
Palm Gardens Water CO OP: NV0000819	2 Active Wells	Community	42	Palm Gardens
NDOT Searchlight Welcome Center: NV0001101	1 Active Well	Transient Non-community	50	Searchlight Welcome Center
Searchlight Public Water System[2/] (Searchlight Water Company): NV0000219	3 Active Wells 1 Monitoring/Future Well	Community	415[3/]	Searchlight

[1/] Nevada Drinking Water Watch (June 2024)
[2/] See Appendix D of this CSWP Plan: Community Source Water Protection Plan Factsheets
[3/] 2023 UNLV Center Business and Economic Development annual population estimate

2.2 Existing Plans and Measures that Protect Source Water

In the Nation's driest state, planning for Nevada's water future is essential. This CSWP Plan was written to build upon the regional framework which works to maintain and protect the quality, supply, and reliability of water sources for all of Clark County. Future generations rely on the ability of counties and local municipalities to work together to safeguard public drinking water sources. Table 3 highlights regional goals and policies that work to protect source water from undue degradation.

Table 3. Existing Plans and Measures that Protect Source Water

2004 Wellhead Protection Plan for Searchlight Nevada's Public Water System*
Regulations Governing Individual Sewage Disposal Systems and Liquid Waste Management, Southern Nevada Health District (Revised February 2009)
Section 5 Location of Individual Sewage Disposal Systems 5.3: Septic tank and shallow absorption system located within one hundred feet (100') nor shall a deep absorption system be located within one hundred and fifty feet (150') of any well.
Clark County 208 Area-Wide Water Quality Management Plan (208 WQMP) (March 2009)
Wellhead Protection: Coordinate and assist with developing wellhead protection plans (now referred to as CSWP Plans) and public outreach programs about groundwater protection for communities that rely on groundwater supplies for potable water (Chapter 10). Planning Recommendations/Implementation: Expand educational programs that encourage conservation and protection of water resources.
Hazardous Materials Emergency Response Plan, Cark County Local Emergency Planning Committee (2020)
Wellheads: A major concern for water wells and water purveyors is the potential for spills of hazardous materials on top of the ground, and what those incidents might create in terms of hazards for water users.
Clark County Sustainability and Climate Action Plan (February 2021)
Water Conservation and Protection Goals: Improve area water quality by reducing impacts from County operations. Support policies, programs, and regional collaboration for improved water quality, water conservation, and drought.
Clark County Master Plan (November 2021)
Goal 3.3: Maintain and protect the quality, supply, and reliability of Clark County's water resources for current and future residents. Policy 3.3.2: Coordinate with partner agencies on educational, programmatic, and regulatory strategies to increase water conservation projects and programs throughout Clark County. Policy 3.3.3: Continue to implement an integrated, area-wide water quality management program in accordance with Clark County 208 Area-Wide Water Quality Management Plan. Policy 3.3.9: Explore land use and vegetation management practices that protect from aquifer contamination, support the proper abandonment of water wells, coordinate the implementation of the 208 WQMP, and support source water protection. Policy SO-6.1 Cal Nev-Ari Capacity: Prevent impacts to the limited resources of Cal-Nev-Ari by limiting development to current privately owned land – generally Township 30 South, Range 64 East, Sections 30 and 31. Policy SO-6.2 Palm Gardens Water Limitations: Limit additional development in Palm Gardens due to limited water resources.

* Superseded by the Community Source Water Protection Plan for Searchlight Public Water System (2024)

2.3 Contingency Measures for Water Sources

A contingency plan is essential for equipping a community to handle potential short- or long-term contamination events or disruptions in the quality or quantity of its source water. The primary aim of such a plan is to safeguard the community's public water supply system, both immediately and over time. This CSWP Plan includes contingency planning to guide local communities and public water systems in case of significant contamination of their drinking water sources. Contingency measures consider the time needed to switch to an alternative water source, the quantity and quality of available alternative sources, and the use of local resources. Plans may involve conservation strategies, groundwater remediation, additional treatment infrastructure, or developing new water sources. Public water systems must have both short-term and long-term plans, as detailed in Table 4.

Table 4. Required Contingency Measures

Emergency Plan: https://www.clarkcountynv.gov/government/departments/fire/emergency_response_plans.php		
Solutions to an immediate shutdown (i.e., response to quantity problems, contaminant threat, or natural disaster).	PWSs coordinate with Nevada Division of Emergency Management through County emergency management representatives for: • spill response/emergency notification, • distribution systems, • available resources, • pump stations and storage tanks.	Short-term solutions to an immediate shutdown: • Operational Adjustments • Boiled Water • Bottled Water or Portable Water Trucks • Water Conservation and Rationing Backup Generators Long-Term solutions: • Water supplies supplemented by a new source, requiring an agreement with an adjacent water system or a new replacement well.
Operation and Maintenance Manual:		
Provides information on the purpose, function, operation, and interaction of system facilities.	Each PWS is required to maintain an Operations and Maintenance Manual under NAC 445A, 6667, for use by operators and facility personnel.	• Establishes the capabilities and limitations of the system. • Outlines procedures to control system processes.
Water Conservation Plan:		
Outlines procedures to follow during water shortages due to drought, overuse, or contamination.	Defines water conservation enforcement measures NAC 445.	• Requires analysis of effectiveness of proposed conservation measures. • Requires analysis of effectiveness of conservation-based water rate structure.
Cross Connection Control Plan:		
• Describes how to prevent unauthorized connections to PWSs that could potentially contaminate the system during loss of pressure. • Identifies activities needed to ensure that no unprotected service connections exist between PWS and sources of contamination.		

3.0 Plan Development

The development of this CSWP Plan was a collaborative process focused on identifying risks to water sources and creating actionable strategies to protect source water and ensure the long-term sustainability of drinking water supplies. The plan is tailored to accommodate Piute Valley's unique demographics and jurisdictions while ensuring the incorporation of County-wide policies and objectives to safeguard source water in Clark County.

3.1 Source Water Protection Area Development

In Nevada, SWPAs represent community-established, precautionary boundaries around source water to safeguard drinking water supplies and protect water quality. The following sections describe the development of SWPAs for this CSWP Plan.

3.1.1 Time-of-Travel Capture Zones and Arbitrary Fixed Radius

Capture zones can be useful for visualizing an area of land around a drinking water source which should be safeguarded from surface and subsurface sources of man-made contamination. Time-of-travel capture zones (Figure 4) estimate the time it could theoretically take a contaminant to reach a groundwater well. The Analytic Method (WhAEM2000, Wellhead Analytic Element Model, version 3.3.2 - June 2018), informed by hydrogeological information was utilized to model the 2-, 5-, and 10-year time-of-travel capture zones for this CSWP Plan.

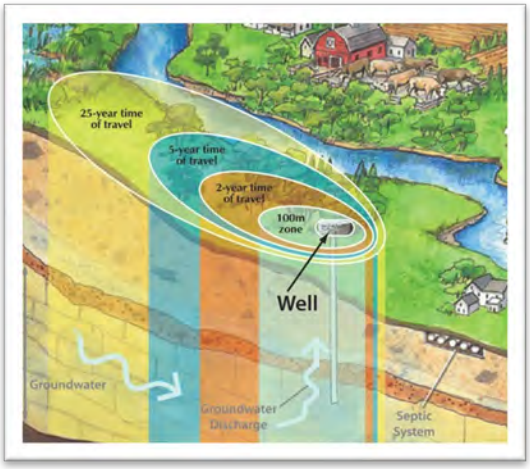

Figure 4. Time-of-travel Capture Zones

The Arbitrary Fixed Radius method (Figure 5) uses a distance criterion to define a circle around a well. For select water sources, a 1,000-ft fixed radius around existing or potential future drinking water sources was delineated based on the desire to closely monitor existing and proposed activities adjacent to their water supply wells, and to manage and prevent releases that could potentially contaminate their groundwater aquifer. The time-of-travel capture zone models and the arbitrary fixed radius method are both approved methods within the ISWPP and were important exercises to make informed decisions regarding the delineation of their management area boundaries. The capture zone models contain sensitive information and details are provided as Appendix C and Appendix D of this CSWP Plan. Contact your local water system for review.

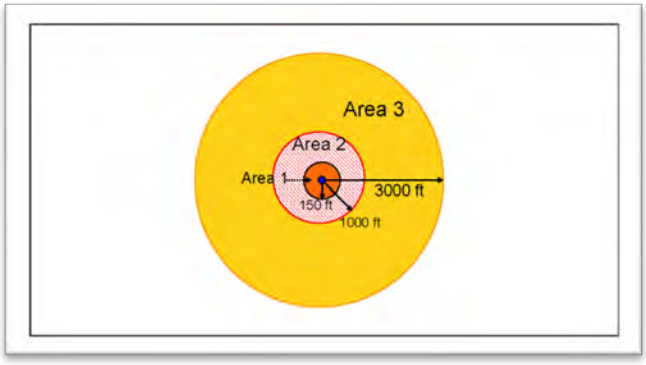

Figure 5. Example of Arbitrary Fixed Radius Method

3.1.2 Potential Contaminant Source Inventory

Human activities, such as urban, industrial, and agricultural operations, can pollute drinking water sources. Potential contaminant sources (PCSs) include current and prospective activities that may release contaminants into the environment, which can then migrate to groundwater and negatively affect community's drinking water supply (Figure 6).

Figure 6. Potential Sources of Water Contamination

Potential contaminants were identified by cataloging activities near drinking water sources. Methods for collecting data included publicly available digital databases, mapping, and interviews with water system operators. Using a Geographic Information System (GIS) based inventory, activities within each community that potentially pose a risk to source water quality were organized, analyzed, and reviewed by the public water system representatives. Potential contaminant source inventories and evaluations specific to the Piute Valley contain sensitive information and are included in Appendix C and Appendix D of this CSWP Plan. Contact your local water system for review.

The land surrounding the communities in Piute Valley are designated as the Piute-El Dorado Tortoise Area of Critical Environmental Concern (ACEC) (Ludington et al., 2006). One focus of the ACEC Preliminary Draft Management Plan is to improve natural resources (BLM, 2021). This approach supports source water protection by reducing the possibility of future potential contaminant source development surrounding public drinking water sources in Piute Valley.

3.2 Source Water Protection Area Characteristics

Managing human activities to prevent contaminants from entering drinking water sources is key to source water protection. SWPAs are designated boundaries where communities focus on safeguarding water quality. Within these areas, education, monitoring, and land use planning can be used to manage water quality more effectively. The public water system representatives delineated SWPAs based on the time-of-travel capture zones, planned land uses, and locations of potential sources of drinking water contamination. The Piute Valley SWPA characteristics and management needs are described in Table 5. SWPA maps are included in Appendix A, with methods used to establish these boundaries detailed in Appendix C and Appendix D.

Table 5. Piute Valley Source Water Protection Area Descriptions

Public Water System and Source Water Protection Area Name	Description
Spirit Mountain Utility Company: **SMU Zone 1**	Within the 1,000-ft radius to a public water system well, potential contaminant sources are a high priority for local source water protection implementation. The 1,000-ft SWPA includes existing and proposed activities where prompt spill response, proper disposal of household waste and hazardous materials, as well as infrastructure maintenance and improvements, are essential for protecting water quality. The 1,000-ft SWPA is an area where planning, infrastructure improvements, and wellhead security take priority. This SWPA complies with the minimum 100-ft radius management area recommendation in the Clark County 208 Area-Wide Water Quality Management Plan (2009).
Spirit Mountain Utility Company: **SMU Zone 2**	The calculated 10-year time-of travel to a public water system considers long-term planning for the broader community of Cal-Nev-Ari. The 10-Year SWPA is an area where source water protection education and outreach could be prioritized. Engaging the community and encouraging source water protection participation can help ensure that potential contaminant sources are being managed to protect drinking water. The SWPA balances the community's immediate source water protection goals with long-term planning considerations and collaboration on education and outreach with the BLM in the ACEC.
Palm Gardens Water CO OP: **PG Zone 1**	The PG Zone 1 area encompasses the communities' drinking water wells, current potential contaminant sources (as of 2024), and the Corridor Mixed Use (CM) planned land use as outlined in the Clark County Master Plan (2021). The PG Zone 1 is an area where future development and land use planning can incorporate source water protection to safeguard the quality of the public drinking water supplies in Clark County, Nevada.
NDOT Searchlight Welcome Center: **SWC Zone 1**	The SWC Zone 1 considers the Searchlight Welcome Center facility footprint, including the drinking water well and the current potential contaminant sources (as of 2024). The SWC Zone 1 is a boundary where source water protection can take priority when considering spill response, onsite sewage disposal system maintenance, and water quality education and outreach for Welcome Center patrons.
Searchlight Public Water System	SWPAs were delineated using numerical flow modeling in combination with fixed-radius areas. The SWPAs include 2-, 5-, and 10-year groundwater capture zones and fixed-radii areas. The fixed areas ensure the SWPA is large enough to account for natural hydrogeologic variations that influence groundwater flow.

3.2.1 Potential Contaminant Source Evaluation in Source Water Protection Areas

Understanding the PCSs within the SWPAs was important to develop source water protection management strategies and an action plan for implementation (Section 4.1). The PCS inventories provided valuable information to the public water system representatives regarding the locations of existing and potential future human activities which might be, or could become, contaminant sources to drinking water supplies.

Potential Contaminant Source Classes are designated by the *NDEP Suggested Risk Ranking for PCS in Nevada* and are categorized by their origin, nature, and the type of pollutants they may introduce to drinking water supplies. Within the Piute Valley SWPAs, these include:

- residential and commercial leach fields,
- gas stations,
- historic sewage disposal systems,
- underground storage tanks, and
- historic pipelines.

PCSs in this CSWP Plan are considered as "controlled" if they are regulated activities under a state or federal environmental permit/program (for example, a National Pollutant Discharge Elimination System (NPDES) Industrial Stormwater Permit). They are considered as "uncontrolled" if they do not fall under any regulatory oversight. The majority of PCSs in the Piute Valley SWPA Zones for Spirit Mountain Utility, Palm Gardens Water Co-Op, and NDOT Searchlight Welcome Center are uncontrolled, underscoring the importance of community- and county-wide management strategies that facilitate communication and collaboration between water purveyors, residents, stakeholders, and emergency managers to ensure the long-term sustainability of Clark County's drinking water supplies. Currently, there are no PCSs within the SWPAs for the Searchlight Public Water System.

4.0 Plan Implementation

4.1 Source Water Protection Management Strategies

Management strategies describe how a community intends to achieve planning goals. The source water protection management strategies for this CSWP Plan were designed to provide for both community growth and to protect drinking water quality. Simple and easy-to-implement strategies were prioritized to reduce the potential for source water contamination in Piute Valley. These broad strategies will be executed using the Action Plan:

- **Planning and Review:**
  Considers source water protection for future development planning.
- **Secure Locations for Future Water Sources:**
  Promotes area-wide collaboration on hydrogeological information.
- **Emerging Contaminants:**
  Supports County and State-wide collaboration regarding emerging contaminants.
- **Public Education and Outreach:**
  Encourages source water protection at the local level.
- **Infrastructure and Wellhead Security:**
  Aims to prevent contamination via aging infrastructure and vandalism.

4.2 Action Plan

The development of an Action Plan is crucial to the CSWP planning process, detailing the steps needed to achieve CSWP Plan goals. The Action Plan specifies how to implement each management strategy. Manageable, real-world actions are organized by management strategy, considering factors like contaminant sources, planning, operational constraints, regional collaboration, public education, and hazard mitigation. Each action includes a description, priority, project lead, required assistance, and expected implementation year. Implementation depends on funding, priority, and resources, with technical and funding assistance necessary for many projects. Potential funding sources to support the actions are provided in Table 6. Area-wide Piute Valley actions are provided in Table 7, and the Spirit Mountain Utility Action Plan is provided in Table 8. Multi-agency management strategies for the Searchlight Public Water System can be accessed via the LVVWD Website.

4.3 Source Water Protection Plan Updates

This CSWP Plan aims to foster area-wide and community interest in protecting drinking water sources, establishing a shared vision for future water availability, and to integrate protection and conservation goals into local planning. Regular updates to the CSWP Plan are essential to maintain its relevance and effectiveness. The partners intend to review the plan every two to five years to recognize progress and incorporate changing conditions.

Table 6. Potential CSWP Plan Implementation Funding Sources

Funding Agency	Program Name
Bureau of Reclamation	• WaterSMART Program • Rural Water Supply Program • Water Conservation Field Services Program • Small Storage Program • Water Operations
Environmental Protection Agency (EPA)	• Water Infrastructure Financing Innovation Act • Pollution Prevention Grant Program • Water Infrastructure Improvements for the Nation • Funding Integration Tool for Source Water - FITS
United States Department of Agriculture (USDA)	• Water and Waste Disposal Loan & Grant Program • Circuit Rider Program • Water and Waste Disposal Predevelopment Grants • Water and Waste Disposal Technical Assistance and Training Grants • SEARCH – Special Evaluation Assistance for Rural Communities and Households • Community Facilities Loan and Grant Program • Emergency Water Assistance Grants • NRCS grants and loans for Agriculture Producers
Federal Emergency Management Agency (FEMA)	• Flood Mitigation Assistance
State of Nevada	• AB 198 Grants • Clean Water State Revolving Fund • Drinking Water State Revolving Fund • Drinking Water State Revolving Fund for Emerging Contaminants • State Water Infrastructure Financing and Innovation Act • CWA 319 NPS Grants • ISWPP Implementation Grants • Bipartisan Infrastructure Law assistance for Small and Disadvantaged Communities • Emerging Contaminants/Small or Disadvantaged Communities Grant
United States Geological Survey (USGS)	• CFDA 15.981 Water Use and Data Research • CFDA 15.980 National Groundwater Monitoring Network

Table 7. Piute Valley, Clark County, Nevada, Area-Wide Action Plan

	Community Source Water Protection – Piute Valley, Clark County Nevada					
Action Item	**Management Strategy**	**Action Description**	**Priority**	**Project Lead**	**Type of Assistance Needed**	**Expected Implementation Year**
1.1	*Planning and Review*	Consider endorsing regional plans which protect source water and promote water quality and resource management. For example, support updates to the Clark County 208 Area-Wide Water Quality Management Plan and the Clark County Master Plan.	Medium	Area Wide	Technical Assistance	2025 and Ongoing
1.2	*Planning and Review*	Consider coordinating with the Clark County Office of Emergency Management on disaster response in rural areas.	Medium	Area Wide	Technical Assistance	2025 and Ongoing
1.3	*Planning and Review*	Support source water protection communication between the Piute Valley public water systems and local agencies in Clark County regarding prospective developments within Piute Valley.	Low	Area Wide	Technical Assistance	2025 and Ongoing
2.1	*Secure Locations for Future Water Sources*	Consider land use and zoning when reviewing proposed future well locations.	High	Area Wide	Technical Assistance	2025 and Ongoing
3.1	*Emerging Contaminants*	Coordinate with NDEP on the availability of, and eligibility for, funding to address emerging contaminants.	High	Area Wide	Technical Assistance	2024 and Ongoing
3.2	*Emerging Contaminants*	Participate in a Geographical Information System (GIS) database that is specific to emerging contaminants in Clark County.	Medium	Area Wide	Technical Assistance	2024 and Ongoing

Table 8. Piute Valley, Clark County, Nevada, Spirit Mountain Utility Action Plan

	Community Source Water Protection – Spirit Mountain Utility					
Action Item	**Management Strategy**	**Action Description**	**Priority**	**Project Lead**	**Type of Assistance Needed**	**Expected Implementation Year**
1.4	*Planning and Review*	Consider source water protection areas and future well locations in the local development review process.	High	Spirit Mountain Utility Company	Technical Assistance	2024 and Ongoing
1.5	*Planning and Review*	Support source water protection communication between Cal-Nev-Ari and local agencies in Clark County regarding planning and development. For example, consider a presentation of source water protection areas to the Clark County Planning Commission.	Low	Spirit Mountain Utility Company	Technical Assistance	2025
1.6	*Planning and Review*	Consider working with the Clark County Water Reclamation District to explore wastewater treatment options in Cal-Nev-Ari. Work with the Clark County Water Quality to obtain important contacts.	Medium	Spirit Mountain Utility Company Clark County Water Quality	Technical Assistance	2024 and Ongoing
1.7	*Planning and Review*	Consider coordinating with the Clark County Office of Emergency Management on disaster response in rural areas, and consider including a link to emergency management materials on the Spirit Mountain Utility website.	Medium	Spirit Mountain Utility Company	Technical Assistance	2025 and Ongoing
2.2	*Secure Locations for Future Water Sources*	Collaborate with the other public water systems in Piute Valley about hydrogeological information when considering future well locations. Consider hosting a meeting to discuss water planning in the Piute Valley.	Low	Spirit Mountain Utility Company	Technical Assistance	2025 and Ongoing
2.3	*Secure Locations for Future Water Sources*	Utilize existing hydrogeological studies of the Piute Valley when considering future well locations.	High	Spirit Mountain Utility Company	Technical Assistance	2025 and Ongoing
3.3	*Emerging Contaminants*	Promote community-wide education about emerging contaminants. For example, consider including education links on the website and include as a topic at annual source water protection education meetings.	High	Spirit Mountain Utility Company	Technical Assistance	2024 and Ongoing
3.4	*Emerging Contaminants*	Participate with the other public water systems in Piute Valley to develop and share information and technologies related to emerging contaminants, such as water quality testing and treatment options.	Medium	Spirit Mountain Utility Company	Technical Assistance	2024 and Ongoing

	Community Source Water Protection – Spirit Mountain Utility					
Action Item	**Management Strategy**	**Action Description**	**Priority**	**Project Lead**	**Type of Assistance Needed**	**Expected Implementation Year**
4.1	*Public Education and Outreach*	Explore funding and education opportunities for used oil collection and disposal.	High	Spirit Mountain Utility Company	Technical Assistance	2025
4.2	*Public Education and Outreach*	Consider presenting highlights of the Community Source Water Protection Plan to the Searchlight Town Advisory Board.	Medium	Spirit Mountain Utility Company	Technical Assistance	2024
4.3	*Public Education and Outreach*	Conduct source water protection education at community events geared toward septic care and maintenance, household hazardous waste disposal, and general education about backflow devices and leak detections. For example, host a booth during the off-road races.	High	Spirit Mountain Utility Company Rural Water Association	Technical Assistance	2025 and Ongoing
4.4	*Public Education and Outreach*	Host an annual source water protection educational event at the community center. Topics could include high-level groundwater education, septic care and maintenance, non-point source contamination, fire hydrant education, and proactive source water protection actions for homeowners, such as proper household hazardous waste disposal and best management practices to protect water quality.	Medium	Spirit Mountain Utility Company Rural Water Association	Technical Assistance	2025 and Ongoing
4.5	*Public Education and Outreach*	Consider including source water protection education on the Spirit Mountain Utility Company website. For example, include links to the Community Source Water Protection Plan and include a link to the Clark County Water Quality Pain in the Drain webpage.	Medium	Spirit Mountain Utility Company	Technical Assistance	2025
4.6	*Public Education and Outreach*	Coordinate with the Clark County Water Quality on education and outreach materials to ensure educational materials are up-to-date and relevant.	High	Spirit Mountain Utility Company Clark County Water Quality	Technical Assistance	2025 and Ongoing
4.7	*Public Education and Outreach*	Consider participating in a Piute Valley emergency planning meeting to discuss source water protection and spill response. Invite organizations such as the Searchlight Volunteer Fire Department, emergency responders, and NDOT.	Low	Spirit Mountain Utility Company	Technical Assistance	2025 and Ongoing

	Community Source Water Protection – Spirit Mountain Utility					
Action Item	**Management Strategy**	**Action Description**	**Priority**	**Project Lead**	**Type of Assistance Needed**	**Expected Implementation Year**
5.1	*Infrastructure and Wellhead Security*	Consider posting source water protection signs around wellheads and on fencing around water tanks.	High	Spirit Mountain Utility Company	Technical Assistance Financial Assistance	2025
5.2	*Infrastructure and Wellhead Security*	Continue to explore opportunities for gray water separation in private septic systems. For example, coordinate with the Rural Water Association and the University of Nevada, Las Vegas on wastewater reuse systems for households.	High	Spirit Mountain Utility Company Rural Water Association	Technical Assistance	2025 and Ongoing
5.3	*Infrastructure and Wellhead Security*	Explore opportunities for improving security around wellheads; for example, cameras, signage, and fencing.	High	Spirit Mountain Utility Company	Technical Assistance Financial Assistance	2025
5.4	*Infrastructure and Wellhead Security*	Explore opportunities for improving water system infrastructure as it pertains to source water protection.	High	Spirit Mountain Utility Company	Technical Assistance Financial Assistance	2024 and Ongoing
5.5	*Infrastructure and Wellhead Security*	Continue to build and expand the Cal-Nev-Ari Geographical Information System database as it pertains to the Spirit Mountain water system and/or potential contaminant sources.	Medium	Spirit Mountain Utility Company	Technical Assistance	2024 and Ongoing

5.0 Public Education and Outreach

Public participation in the planning, development, and implementation of a CSWP Plan ensures community representation. The public water system representatives and technical assistance providers for this CSWP Plan collaborated to develop strategies that work to protect drinking water sources and maintain water quality. They understand the importance of engaging local, County, and State agencies and residents to learn about source water protection, share knowledge, and protect water quality.

Public education, highlighted in the management strategies and Action Plans, is crucial for promoting voluntary source water protection actions and building support for the CSWP Plan. Education projects targeting key audiences and promoting a community effort to protect drinking water sources are detailed in the Public Education Plan, presented as Appendix E. These efforts aim to engage residents, business leaders, and stakeholders to participate in ongoing source water protection activities. The following messages were developed to bring source water protection messages to residents of the Piute Valley:

Where does our drinking water in the Piute Valley come from?

All residential properties in Piute Valley rely on groundwater as their source of drinking water. Groundwater is extracted from wells drilled into aquifers, comprised of rock, sand, and gravel, located deep under the Earth's surface.

Why is it important for us to protect drinking water at the source?

Both surface and groundwater can be polluted by various human activities and natural occurrences. Once a source of drinking water becomes polluted, it becomes extremely costly and difficult to clean. We have the power to support our water system operators as they implement strategic safeguards to avoid or control contamination threats and incidents that may pollute our drinking water.

What can I do to protect my drinking water?

Protecting our drinking water from contamination is a huge challenge. Safeguarding our drinking water sources begins with awareness and education. We can take everything we've learned home with us, educate our friends and families, and change our behaviors to minimize our impact on our water resources. The adage is true: *"An ounce of prevention is worth a pound of cure!" – Benjamin Franklin.*

This CSWP Plan was developed to ensure safe and sustainable drinking water supplies for generations to come. It aims to foster cooperation between local and regional partners to safeguard this critical resource. The Piute Valley Source Water Protection Partners recognize the necessity of local and area-wide collaboration to maintain clean and safe drinking water and will remain committed to implementation of this CSWP Plan.

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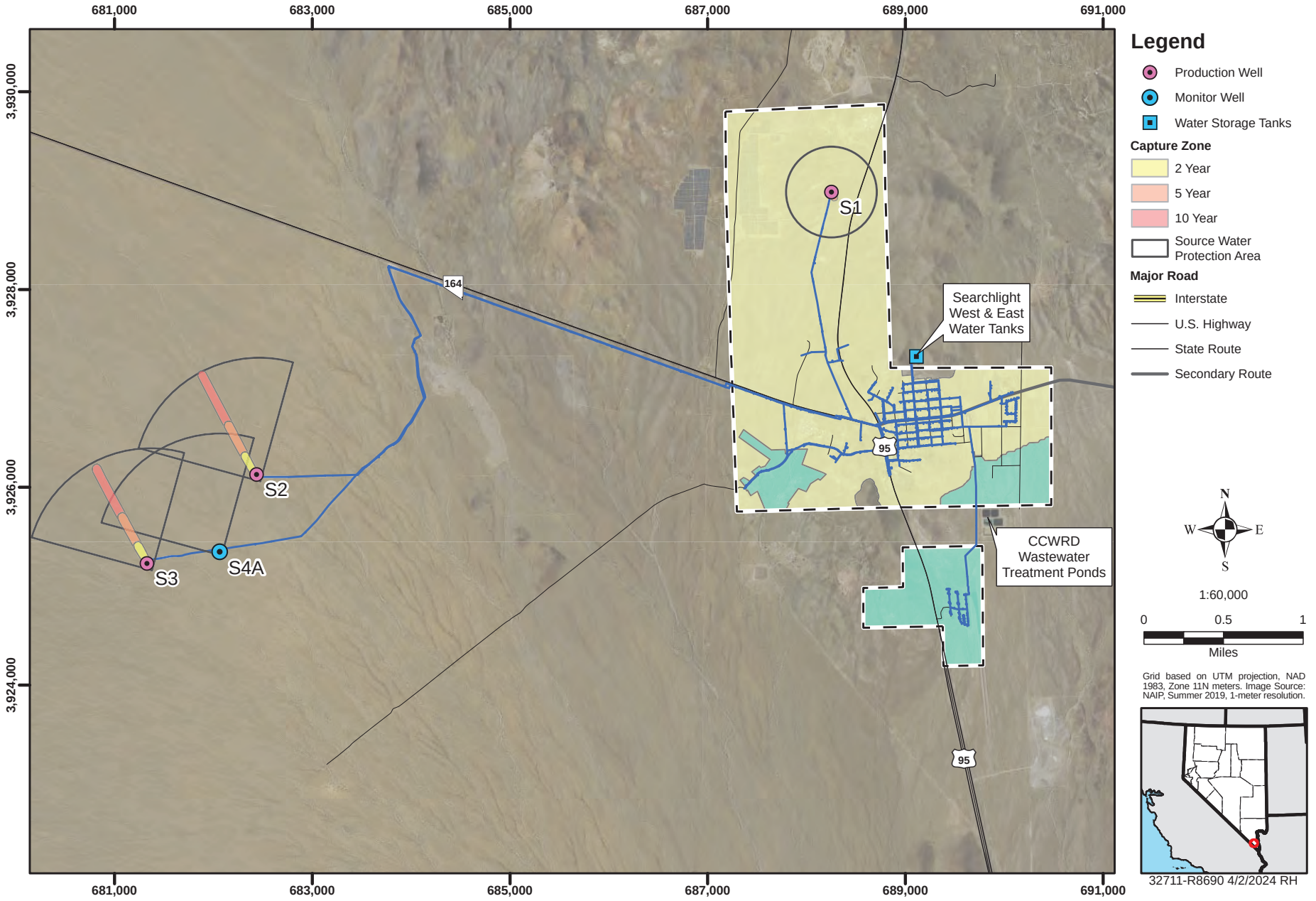
Appendix A

Source Water Protection Area Maps

CSWPP for the Public Water Systems in the
Piute Valley, Clark County, Nevada, Planning Area 8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Monitor Well
Water Storage Tanks
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Grid based on UTM projection, NAD 1983, Zone 11N meters. Image Source: NAIP, Summer 2019, 1-meter resolution.
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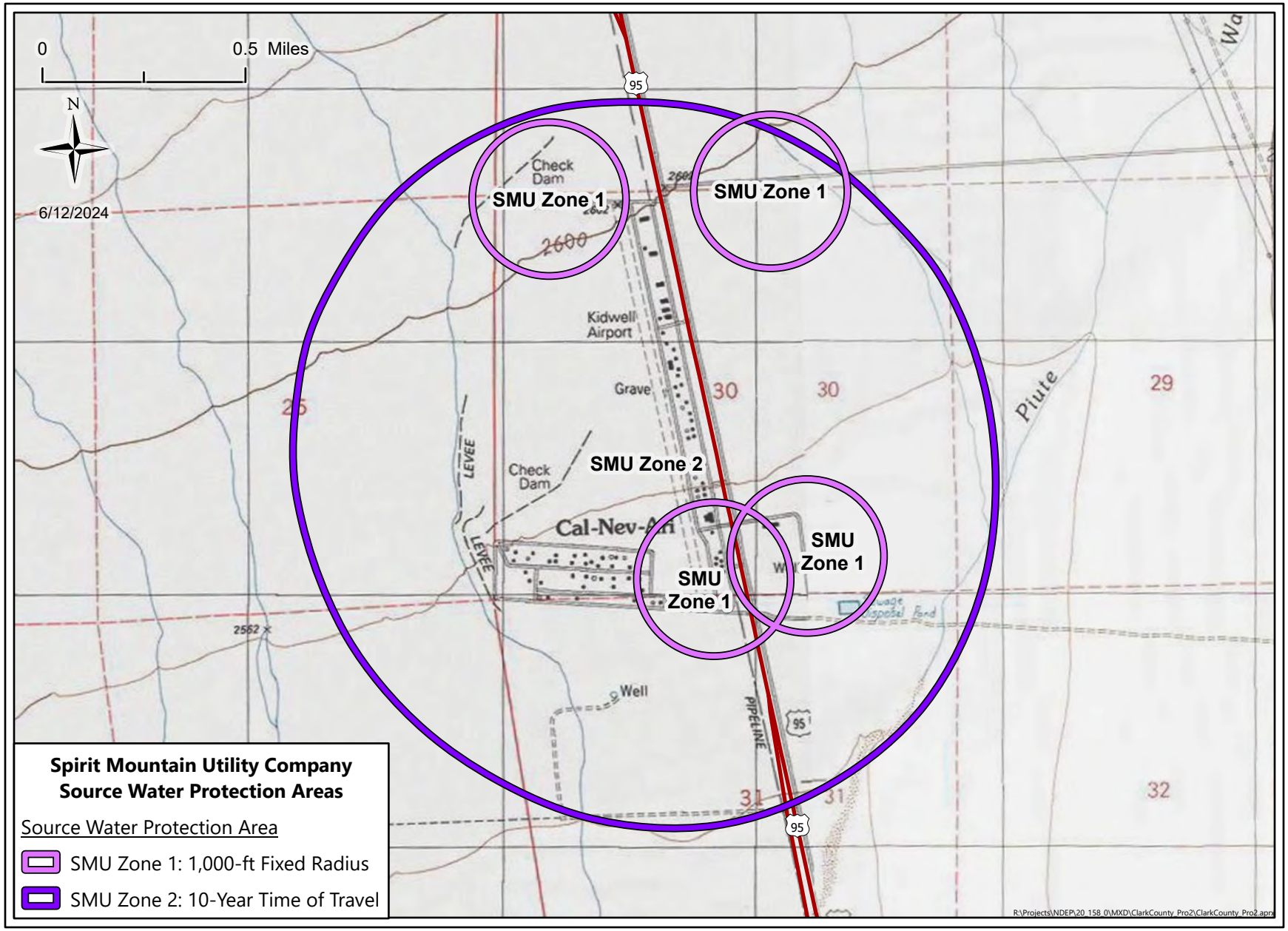
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Spirit Mountain Utility Company
Source Water Protection Areas
Source Water Protection Area
SMU Zone 1: 1,000-ft Fixed Radius
SMU Zone 2: 10-Year Time of Travel
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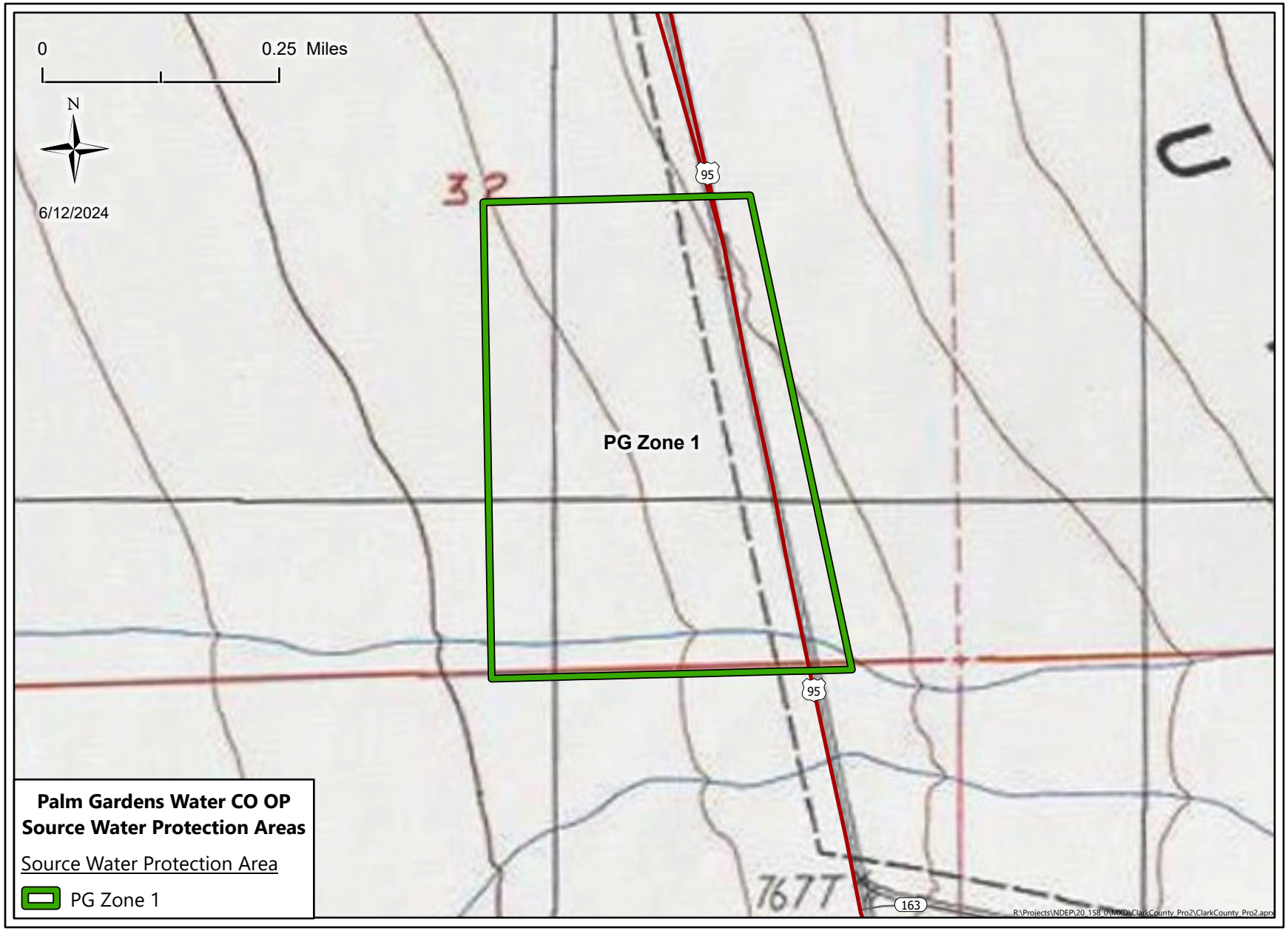
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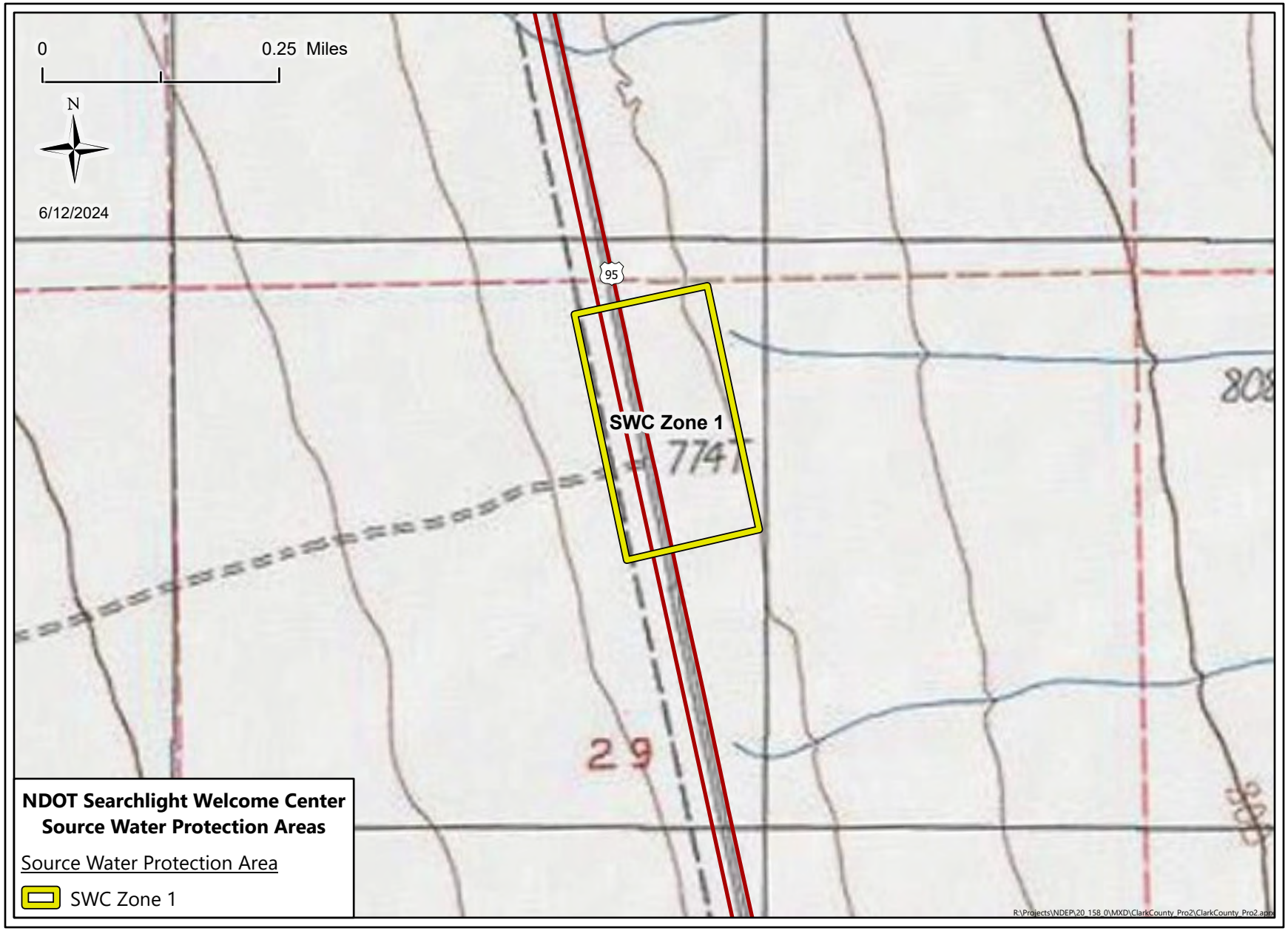
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NDOT Searchlight Welcome Center
Source Water Protection Areas
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Appendix B

Meeting Notes

CSWPP for the Public Water Systems in the
Piute Valley, Clark County, Nevada, Planning Area 8

Piute Valley, Clark County NV, Planning Area 8

Public Water System Letter of Support

Alison Cramer
Resource Concepts Inc.
340 N. Minnesota St., Carson City, NV 89703
Cell: 530-802-6834 **Office:** 775-883-1600
Email: alison@rci-nv.com **Website:** www.rci-nv.com

01/22/2024

And

Integrated Source Water Protection Program
NDEP Bureau of Safe Drinking Water
901 Stewart Street, Suite 4001
Carson City, Nevada 89701

Subject: Participation in the State of Nevada's Integrated Source Water Protection Program

The Spirit Mountain Utility Co, Inc. and its Board supports the participation in the State of Nevada Integrated Source Water Protection Program. We understand that the Nevada Division of Environmental Protection through Resource Concepts, Inc provides technical assistance to both the County and local individual public water systems on drinking water quality preservation. We recognize the benefit of local planning for the protection of our community sources of drinking water and updating our wellhead protection information.

Please work with the Spirit Mountain Utility Co, Inc on all aspects of this program.

Sincerely,

Sonny Nguyen
V.P. Universal Green Technology/Spirit Mountain Utility Co, Inc

CC: Mary Matusky

Piute Valley, Clark County NV, Planning Area 8

Public Participation & Team Meetings

Draft Meeting Notes

LVVWD, SNWA, NDEP, & RCI

Wednesday, January 17, 2024
2:00pm-3:30pm (Pacific)
In-Person Meeting at LVVWD Offices

Attending

NAME	CONTACT INFORMATION		AFFILIATION
Aaron Gamble		Aaron.gamble@snwa.com	LVVWD – Searchlight System Super Intendant
Jack M. Childress	702-862-3782	Jack.childress@snwa.com	LVVWD Water Resources - Hydrologist
Jeff Johnson	702-862-3748	Jeff.johnson@snwa.com	LVVWD Water Resources – Special Projects Manager
Annalise Porter		Analise.porter@snwa.com	SNWA - Associate Public Affairs Analyst
James P. Prieur	702-862-7437	James.prieur.snwa.com	LVVWD Water Resources – Hydrology Supervisor, P.G., C.E.M.
Ethan Mason	775-687-9311	e.mason@ndep.nv.gov	Coordinator, NDEP Integrated Source Water Protection Program (ISWPP)
Alison Cramer	775-883-1600	alison@rci-nv.com	Resource Concepts, Inc. (RCI)
Jill Sutherland	775-883-1600	jill@rci-nv.com	Resource Concepts, Inc. (RCI)

Purpose & Overview

The purpose of this meeting was to review the progress of the Searchlight Wellhead Protection Plan (WHPP) Update and to discuss the expansion of source water protection in Clark County.

Discussion

1. Introductions

The meeting began with introductions from each attendee, who noted their roles and responsibilities within their organization related to source water protection (SWP).

2. Source Water Protection Program Overview and Objectives

The Nevada Integrated Source Water Protection Program (ISWPP) Coordinator, under NDEP's Bureau of Safe Drinking Water) gave a brief overview of the ISWPP and the State's goals and objectives for SWP in Clark County, including:

- CSWPPs adopted county-wide
- Ensure local SWP meet state guidance

3. Presentation on the Revised Searchlight WHPP and update Capture Zone Analysis

The LVVWD gave the Group an overview of the Searchlight area and the status of the WHPP update, including:

- The current population in Searchlight is 300 less than it was in 2002 (date of the WHPP).
- The system has three active and one inactive well.
    - S1 is in bedrock.
    - S2-S4 are in the BLM Area of Critical Environmental Concern (ACEC).
    - S2 is treated for Arsenic.

    - Searchlight has one Town Advisory Board
        - Clark County has one liaison who attends the public meetings.
        - LVVWD and SNWA both have a representative that attends.
        - Additional attendees include members of the volunteer Fire Department and the Regional Transportation Commission of Southern Nevada (RTC).
- LVVWD will consider presenting the WHPP Update to the Searchlight Town Advisory Board for adoption.
    - NDEP supports WHPP Update presentations at the local level.
    - NDEP will follow up regarding endorsement following only an Advisory Board Approval Letter.
        - NDEP supports and encourages a presentation to the LVVWD Board and would welcome a letter of support.
- NDEP will send endorsement criteria and the Guideline checklist used to establish whether a Plan can be endorsed.
    - NDEP is happy to review the Plan prior to Board adoption.
    - Draft could be ready in mid-February, 2024.
- Updates to the Searchlight Capture Zone analysis include:
    - Updated the pumping rates.
    - Hydrogeological information was sources from a monitoring network of 17 wells.
    - EPA's WhAEM was utilized for Capture Zone simulations based on the ISWPP guidance.
        - Based on the available hydrogeological data a Uniform gradient was not appropriate.
    - Capture Zones came out long and narrow using the calculated steep gradient.
        - LVVWD will consider fanning out so they make more sense to the community.
        - May scale back the Capture Zone for S1.
- Update to the Potential Contaminant Source Inventory includes:
    - Consider adding the Clark County Water Reclamation District WTP.
- Updates to the Management Strategies Include:
    - LVVWD will review but will likely go back to the standard strategies in the Guideline.
    - May consider adding future well locations to the updated WHPP.
- LVVWD is interested in making BLM aware of the WHPP to discuss the SWPAs in the ACEC.
    - The ACEC is a SWP advantage and safeguards water resources due to the lack of development within the ACEC.
- Currently, LVVWD is evaluating the option of participating in the broader planning effort in Planning Area 8.
    - Searchlight is located in Planning Area 8, as outlined in the 2006 Cleark County Area-Wide Water Quality Management Plan (208 Plan).
    - There are three other water systems in Planning Area 8, including NDOT, Palm Gardens, and Spirit Mountain Utility Company.
    - The LVVWD could provide hydrogeological data for the planning area.

Next Steps / Continuing Efforts

Next Meeting: TBD

NDEP/RCI:

- Send the guidance checklist to LVVWD.
- Review Draft WHPP Update.
- Continue to support source water protection in Clark County.

LVVWD

- Share hydrogeological data with NDEP.
- Send Draft WHPP to NDEP for review.
- Present final WHPP Update to Town Advisory Board for approval/adoption.
- Consider a presentation and letter of support from LVVWD Board.

Agenda

Source Water Protection (SWP) Program

Source Water Protection Program

Clark County Planning Area 8 SWP Meeting

Date: January 18, 2024

Time: 9:00 AM to 11:00 AM

Where: Spirit Mountain Utility Services Office
1 Piute Valley Drive
Cal-Nev-Ari Nevada, 89039

1. **Welcome & Introductions**
2. **Integrated Source Water Protection Program**
   - What is Source Water Protection in Nevada?
   - Overview of Plan Development Process and Participation.
3. **Discuss Local Planning Team**
   - Discuss Stakeholder Roles and Expectations
4. **Brainstorm – Your Source Water Protection Roles & Goals**
5. **Schedule and Next Steps**

Draft Kickoff Meeting Notes

Utility Services, Inc. Spirit Mountain Utility Co., Clark County Water Reclamation District, NvRWA, NDEP, & RCI

Thursday, January 18, 2024
9:00am-11:00am (Pacific)
In-Person Meeting at Spirit Mountain Utilities (One attendee joined via phone and one via Teams)

Attending

NAME	CONTACT INFORMATION		AFFILIATION
Leroy Daines	702-556-8096	leroy@utilityservnv.com	Owner & Operator, Utility Services, Inc.
Gregory Matusky	702-469-0360	gregorymatusky@hotmail.com	Maintenance, Spirit Mountain Utility Co.
Ray Matusky	725-268-1385	ray@cal-nev-ari.net	General Manager, Spirit Mountain Utility Co.
Sonny Ngyen	725-268-1424	Pcs06@yahoo.com	Board President, Spirit Mountain Utility Co.
Mary Matusky	608-469-9638	calnevaribooks@gmail.com	Account Manager, Spirit Mountain Utility Co.
Christopher Berkey	702-540-6107	christohperb@nvrwa.org	Source Water Protection Specialist, Nevada Rural Water Assoc. (NvRWA)
Joseph Leedy		jleedy@cleanwaterteam.com	Principal Planner, Water Quality, CCWRD
Ethan Mason	775-687-9311	e.mason@ndep.nv.gov	Coordinator, NDEP Integrated Source Water Protection Program (ISWPP)
Alison Cramer	775-883-1600	alison@rci-nv.com	Resource Concepts, Inc. (RCI)
Jill Sutherland	775-883-1600	jill@rci-nv.com	Resource Concepts, Inc. (RCI)

Purpose & Overview

The purpose of this kickoff meeting was to introduce Nevada's Integrated Source Water Protection Program (ISWPP) to the stakeholders in Clark County's Planning Area 8 (As delineated in the Clark County Area-Wide Water Quality Management Plan) and discuss the development of a Community Source Water Protection (CSWP) Plan to address interests, concerns, and future planning related to source water protection. Development of a fully adopted CSWP Plan will improve funding possibilities for projects that aid source water protection, offer resources to make informed decisions regarding protection of drinking water sources, and provide the community with greater leverage for future planning and development.

Discussion

1. Welcome & Introductions

The meeting began with introductions from each attendee, who noted their roles and responsibilities within Planning Area 8 and related to source water protection (SWP). Attendees included stakeholders representing the Town of Spirit Mountain and Clark County Water Reclamation District (CCWRD).

2. Integrated Source Water Protection Program

The Team was provided with an overview of the ISWPP and steps toward development of a CSWP Plan.

- The ISWPP is a county-wide, voluntary, locally driven program intended to protect drinking water from potential sources of man-made contamination.
- Steps to develop a CSWP Plan include:
    1. Letter from the Board to NDEP requesting participation in the ISWPP.
    2. Development of a Team,
    3. Drinking water source inventory,

4. Potential contaminant source inventory,
5. Delineation of source water protection areas, and
6. Team-derived management strategies, Action Plan, contingency measures, and Education and Outreach Plan.

- Final CSWP Plans are presented to local boards and the Nevada Division of Environmental Protection (NDEP) for adoption and endorsement, respectively.

CSWP Plans are developed to work within the existing planning framework for each county. Existing Plans that support source water/wellhead protection in Clark County include:

- The Clark County Area-Wide Water Quality Management Plan (208 Plan, March 2009).

3. Discuss Local Planning Team

Following the program overview, the Group described their water system, future plans for their community, water quality concerns, and ways in which source water protection could benefit their community.

- Universal Green Technology (UGT) is the parent company that owns Spirit Mountain Utility Co. and some private land in the Township of Cal-Nev-Ari.
    - The Township of Cal-Nev-Ari is privately owned.
    - Spirit Mountain Board conducts their own development reviews.
    - The Searchlight Town Advisory Board is their governing body.
    - Median age of the Township is 65.
- The Public Utilities Commission (PUC) may view the CSWP Plan as a positive when looking at rate structures.
- Water system includes two active wells and one inactive well.
    - One water storage tank to serve the community.
    - One commercial underground sewage disposal system (USDS).
    - Well 1 is under the MCL for Arsenic, and Well 2 is over the MCL for arsenic.
    - Well 1 is the primary well that serves the community, and Well 2 is used for backup in an emergency.
    - The water system is gravity fed, and each house is equipped with a booster pump.
        - If a leak occurs, water pressure for residents may be reduced to 10psi or less.
- Water Quality concerns include:
    - Septic systems,
    - Residential wells,
    - RV Park & Airport fuel storage and spills,
    - Gas station near well 4
    - Runoff/infiltration,
    - RO reject water from arsenic & TDS treatment, and
    - Closed mines (locations and processes used during resource extraction).
        - Do the mines have monitoring wells with water quality information?
- Future community plans relevant to SWP include:
    - A future Wastewater Treatment Plant (WWTP),
    - Well fencing improvements,
    - Future well location planning,

- Planned developments including light industrial,
- An inventory of current and future potential risks to groundwater quality,
- Vandalism and security cameras around wellheads.

- Other water infrastructure related concerns include:
  - Residential water meters on the streets so they can be easily,
  - Pressure concerns and individual check valve maintenance, and
  - Infrastructure replacements.
- A CSWP Plan could be for the water system and community to understand:
  - Desired future well and proposed development based on hydrogeological simulations, including direction of groundwater flow direction and time-of-travel capture zone simulations, to maximize groundwater quality protection.
  - GIS inventory, including water system, potential contaminant source, and hydrogeological data.
  - The gravity fed system and how backflow and leaks may affect flow and pressure (not specifically source water protection but complementary messaging).
- Desired SWP community-wide education may include:
  - SWP education via websites and ArcGIS StoryMaps.
    - UGT is in the process of developing a website where SWP and CSWP Plan resources could be hosted.
  - Separate education events for various audiences (pilots, volunteer firefighters, etc.).
  - Responsibility and need for proper disposal of fuels, oils and other potential contaminants.
    - Local point to collect and dispose of used oil and fuel. Nearest point is Laughlin.
  - Booster pump check valve information and training.
    - *What happens when you over pressurize?*
    - *What kind of booster pump should you purchase?*
    - Pressure requirements and backflow prevention are not included in SWP Planning.
  - Maintenance resources:
    - Where can you go to get maintenance help?
    - Who do you call for maintenance assistance?
- NvRWA provided an overview of their services, which include:
  - Training through circuit riders, and
  - Education, outreach, and planning assistance for SWP.
- CCWRD is considering the 208 Plan to be a resource wellhead and SWP where water systems can go to gather information and plan for the future.
- Additional Team members may include:
  - Searchlight Emergency Manager and Firefighter.

4. Brainstorm – Your Source Water Protection Roles and Goals

Following the discussions, the Group was asked a series of questions regarding their concerns for water quality and community needs. See attached Tables and Questionnaire for responses.

5. Schedule & Next Steps

The Group agreed to ask the Board for a request letter to participate in the ISWPP Program, and to move forward with the Development of a CSWP Plan for Planning Area 8, the Township of Cal-Nev-Ari.

Next Steps / To Do List

Next Team Meeting: Virtual - March 12, 2024 from 9:00AM-10:00AM (Pacific)

RCI:

- Begin building the GIS based Potential Contaminant Source Inventory for review.
- Gather water system data in anticipation of simulation groundwater flow direction and Time-of-Travel capture zones.
- Draft CSWP Plan Vision, Goals, and Management Strategies for review.

Team

- Send Board participation request letter to NDEP (sent to NDEP on January 22, 2024).
- Provide water system and pertinent SWP information as requested.

COMMUNITY SOURCE WATER PROTECTION FOR PUBLIC WATER SYSTEMS IN CLARK COUNTY – PLANNING AREA 8

What are your responsibilities regarding water quality protection?	
General Manager of Operations	Board President of Universal Green Technologies (Parent Company of Spirit Mountain Utility Company)
Monitor the water systema and check for leaks	Water quality monitoring and reporting

What are your concerns regarding water quality?	
Ensuring water sources and storage are proactively protected beyond current standards	Public Education
Planning for reject water from the future wastewater treatment plant at Well 2	Clar County Area-Wide Water Quality Management Plan to be used as a resource for information on water quality.
Well 2 blending with Well 1 to achieve compliance with arsenic MCL – avoid treatment and waste disposal costs	Vandalism and Wellhead Security
Aging Infrastructure – leaks = contamination	Funding

If we work together to address the concerns, what are the outcomes you would like to see?	
A comprehensive plan that is forward thinking, proactive against contamination, with ongoing community training and education	Consider source water protection for future development planning

COMMUNITY SOURCE WATER PROTECTION FOR PUBLIC WATER SYSTEMS IN CLARK COUNTY – PLANNING AREA 8

What does this Plan need to be so it's useful to you?	
Well thought out and the ability to communicate effectively with the public through flyers, etc.	Website development
Water quality reports and resources	Education that's useful to the community (backflow education, fuel disposal, etc.)
Water system improvements in Action Plan	Community buy-in and participation

Community Source Water Protection Plan Goals	
Short Term: CSWP Plan for how the water system is today, including security, community outreach, secure current water sources, and prevent contamination.	Long Term: Future Plans for Town development. Includes Well 2 getting a wastewater treatment plant, future light industry, and commercial property development.
Source water protection public education and outreach	Secure systems to protect wellheads and keep costs down
Preserve and protect current and future resources	Protect water quality in future development planning
Collaboration with partners and neighbors	Ability to keep the water clean via new and modern equipment

DRAFT Agenda

Source Water Protection (SWP) Program

Source Water Protection Program

Community Source Water Protection (CSWP) Plan, Area 8, Clark County, Team Meeting #2

Date: March 12, 2024
Time: 9:00 – 11:00 AM
Where: Virtual on Teams

1. **Welcome & Introductions**
   - CSWP Plan Outline Recap
2. **Finalize CSWP Plan Vision**

   You can't depend on your eyes when your imagination is out of focus.

   -Mark Twain
3. **Revisit and Finalize CSWP Plan Goals**

   Setting Goals is the first step in turning the invisible into the visible.

   -Tony Robbins
4. **Review Updated Information and Mapping**
   - Drinking Water Source Inventory
   - Potential Contaminant Source Inventory and Mapping
   - Groundwater Flow Direction
5. **Bonus: Team Brainstorm – Management Strategies**
   - Management strategies to protect YOUR sources of drinking water are locally driven. Get CREATIVE!
   - What strategies can easily be put into action to implement YOUR Plan Vision and Goals?

Schedule and Next Steps

Cal-Nev-Ari Pictures

Draft Meeting Notes

Utility Services, Inc. Spirit Mountain Utility Co., Clark County Water Reclamation District, NDEP, & RCI

Tuesday, March 12, 2024
9:00-11:00AM (PST)
Virtual Teams Meeting (Two persons joining via phone)

Attending

NAME	CONTACT INFORMATION		AFFILIATION
Gregory Matusky	702-469-0360	gregorymatusky@hotmail.com	Maintenance, Spirit Mountain Utility Co.
Ray Matusky	725-268-1385	ray@cal-nev-ari.net	General Manager, Spirit Mountain Utility Co.
Sonny Nguyen	725-268-1424	Pcs06@yahoo.com	Board President, Spirit Mountain Utility Co.
Mary Matusky	608-469-9638	calnevaribooks@gmail.com	Account Manager, Spirit Mountain Utility Co.
Marisa Black-Pennington	702-556-8069	marisa@utilityservenv.com	Manager, Utility Services inc.
Sara Gedo		sgedo@cleanwaterteam.com	Planner, CCWRD
Elise Nguyen		enguyen@cleanwaterteam.com	Planner, CCWRD
Ethan Mason	775-687-9311	e.mason@ndep.nv.gov	Coordinator, NDEP Integrated Source Water Protection Program (ISWPP)
Alison Cramer	775-883-1600	alison@rci-nv.com	Resource Concepts, Inc. (RCI)
Jill Sutherland	775-883-1600	jill@rci-nv.com	Resource Concepts, Inc. (RCI)
Erin Smith	775-883-1600	erin@rci-nv.com	Resource Concepts, Inc. (RCI)

Purpose & Overview

The purpose of this meeting was to finalize the Community Source Water Protection (CSWP) Plan vison and goals, review source water inventory, and consider the initial PCS inventory.

Discussion

1. Welcome & Introductions

The meeting began with introductions from each attendee including their roles and responsibilities within Planning Area 8.

The Team was provided with a recap of the ISWPP and steps toward development of a CSWP Plan. CSWP Plans are developed to work within the existing planning framework for each county.

- The ISWPP is a county-wide, voluntary, locally driven program intended to protect drinking water from potential sources of contamination from human activities.
- Steps to develop a CSWP Plan include:
    1. Develop a local planning team (Team),
    2. Drinking Water Source Inventory,
    3. Potential contaminant source (PCS) inventory,
    4. Delineation of source water protection areas (SWPAs), and
    5. Team-derived management strategies, Action Plan, contingency measures, and Education and Outreach Plan.

2. Finalize CSWP Plan Vision

The Team reviewed a few examples of CSWP Plan visions, then discussed a vision that works best for Planning Area 8. The Team agreed on the following CSWP Plan vision:

Protect source water to ensure the long-term sustainability of our drinking water supplies.

3. Revisit and Finalize CSWP Plan Goals

The Team developed and agreed upon three CSWP Plan Goals. The goals cover several areas, including:

- Education,
- Future Development,
- Future Water Sources, and
- Infrastructure, and Wellhead Security.

After discussion, the Team agreed on having four CSWP Plan goals and to have a poll to confirm the final verbiage for Goal 2. Final Goals 1, 3, and 4 include:

Goal 1: Develop forward thinking, proactive approaches to protect source water quality, with ongoing community training and education.

Goal 3: Ensure drinking water sources are protected by improving and maintaining infrastructure.

Goal 4: Continual evaluation of alternative ways to secure water sources.

The Township of Cal-Nev-Ari is interested in water conservation and public education about the water system. The Team agreed they would be interested in assistance with:

- Funding/education for used oil collection and haul-away,
- Funding/education for separating gray water from wastewater in private septic systems,
- GIS mapping assistance for water system,
- Improved security for wellheads, but do not have internet service,
- Education about the water system and other topics relating to water quality protection, including septic systems, and
- Education about backflow devices and water use, including how to detect leaks.

NDEP agreed that they could chat with the community center about hosting future source water protection education events.

4. Review Updated Information and Mapping

RCI gave a brief overview of the public water systems (PWSs) and their groundwater sources within Planning Area 8, including:

- Palm Gardens Water Co-op (2 active wells),
- NDOT Searchlight Welcome Center (1 active well),
- Searchlight Water Company (2 active wells), and
- Spirit Mountain Utility Company (2 active wells, 1 inactive well).

RCI gave an overview of the PCS desktop survey for Planning Area 8. Few PCSs were found from the desktop search around Cal-Nev-Ari, and the Team agreed to have a separate meeting with Spirit Mountain and Utility Services Staff to review the communities' PCS concerns. The Team provided RCI with information on a few PCSs, including:

  - New Love's Gas Station breaking ground next to motel, and

- Old gas station near casino.

RCI agreed to provide the Team with some key questions that might promote source water protection for the new Love's Truck Stop location.

The Team informed RCI and NDEP that they could be interested in re-use in the future. Re-use will not come into play in the community until the wastewater treatment plant is built, which could be many years from now. However, RCI and NDEP agree that CSWP Plans should be developed to incorporate and protect all future water sources. The Team is interested in understanding the potential water quality impacts of re-use, and how their system would need to be built to protect their aquifer and reduce the risk of emerging contaminants.

RCI gave a brief overview of time-of-travel capture zones and SWPAs. Capture Zone are areas surrounding a well where a contaminant can infiltrate into groundwater and travel to the well in a given period of time. SWPAs are management boundaries based on a variety of things such as land use, capture zone modeling, parcel boundaries, watershed areas, or other relevant delineation methods.

- ISWPP simulates the 2-, 5-, and 10-year time-of-travel capture zones for each well.

NDEP re-iterated that RCI can model any time of travel that may seem appropriate for future planning purposes. The Team agreed to discuss further at the next meeting.

Next Steps / To Do List

Next Virtual Team Meetings:
April 11, 2024, from 9:00-11:00AM (PST)
April 30, 2024, from 9:00-11:00AM (PST)

Resource Concepts, Inc.

- Send a poll for final verbiage on Goal 2.
- Follow up with PWS regarding suggestions for Cal-Nev-Ari review of the Love's Gas Station.
- Finalize PCS inventory with Spirit Mountain and Utility Services, Inc. Staff.
- Draft capture zone simulations and SWPAs.
- Reach out to Rural Water Association to get information about oil collection programs and graywater/wastewater separator programs.

Planning Area 8 Team

- Cal-Nev-Ari to update PCS inventory with RCI – separate meeting tentatively scheduled for early April 3, 9:00-11:00am.
- Cal-Nev-Ari to send any available maps to RCI for GIS mapping needs.

Nevada Integrated SourceWater Protection Program

NDEP

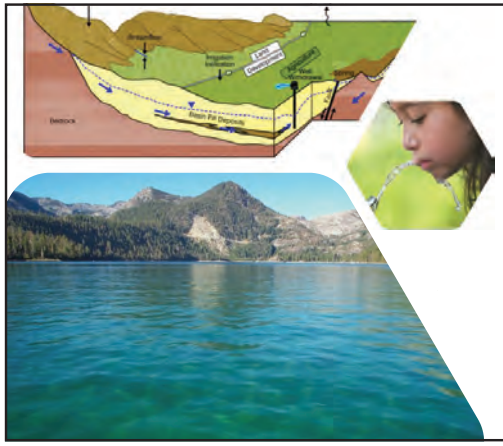
Bureau of Safe Drinking Water:
Ethan Mason
e.mason@ndep.nv.gov
775-687-9311

RCI Resource Concepts Inc

Jill Sutherland, PE - Jill@RCI-NV.com
Alison Cramer - Alison@RCI-NV.com
Erin Smith – Erin@RCI-NV.com
340 N. Minnesota Street
Carson City, Nevada
775-883-1600

Contractor for the Nevada Integrated Source Water Protection Program

1



What is the Integrated Source Water Protection Program?

ISWPP is ***voluntary*** approach…

to empower communities to develop and implement a local plan to protect their sources of drinking water

Communities working together to protect drinking water.

2

Developing a Community Plan….

Develop a local Planning Team

3

Developing a Community Plan….

Develop a local Planning Team

↓

Drinking Water Source Inventory

4

Developing a Community Plan....

- Develop a local Planning Team
- Drinking Water Source Inventory
- Potential Contaminant Source Inventory

5

Developing a Community Plan....

- Develop a local Planning Team
- Drinking Water Source Inventory
- Potential Contaminant Source Inventory
- Source Water Protection Areas

6

Developing a Community Plan....

- Develop a local Planning Team
- Drinking Water Source Inventory
- Potential Contaminant Source Inventory
- Source Water Protection Areas
- Community-Driven Strategies, Action Plan, and Education to Protect Drinking Water Sources

7

Developing a Community Plan....

- Develop a local Planning Team

Integrated Source Water Protection Program
NDEP Bureau of Safe Drinking Water
901 Stewart Street, Suite 4001
Carson City, Nevada 89701

Subject: Participation in the State of Nevada's Integrated Source Water Protection Program

The Spirit Mountain Utility Co, Inc. and its Board supports the participation in the State of Nevada Integrated Source Water Protection Program. We understand that the Nevada Division of Environmental Protection through Resource Concepts, Inc provides technical assistance to both the County and local individual public water systems on drinking water quality preservation. We recognize the benefit of local planning for the protection of our community sources of drinking water and updating our wellhead protection information.

Please work with the Spirit Mountain Utility Co, Inc on all aspects of this program.

Sincerely,

Sonny Nguyen
V.P. Universal Green Technology/Spirit Mountain Utility Co. Inc

CC: Mary Matusky

8

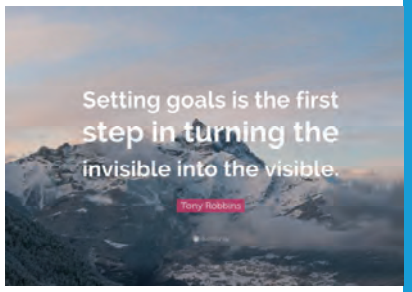
Community Source Water Protection Plan Vision

The WHAT
The PURPOSE

9

Community Source Water Protection Plan Goals

The AIM
The RESULT



10

Community Source Water Protection Plan Vision- Examples

Ensure safe and sustainable drinking water for all residents and businesses.

Create a community-wide plan to help protect drinking water sources and maintain water quality.

Ensure clean and safe drinking water supplies.

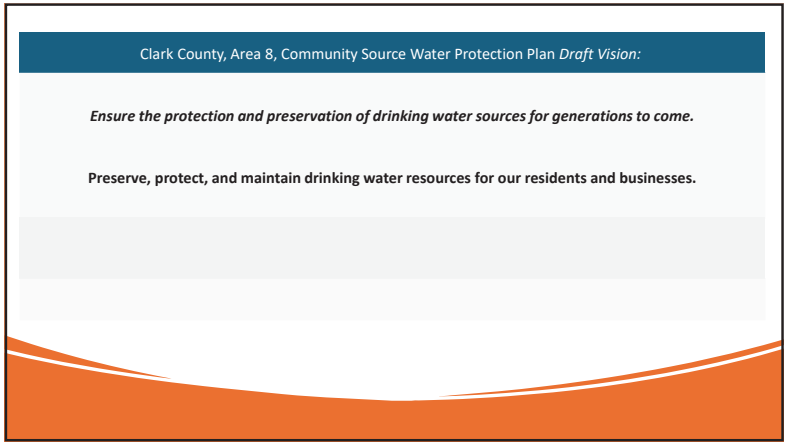
The WHAT
The PURPOSE

11

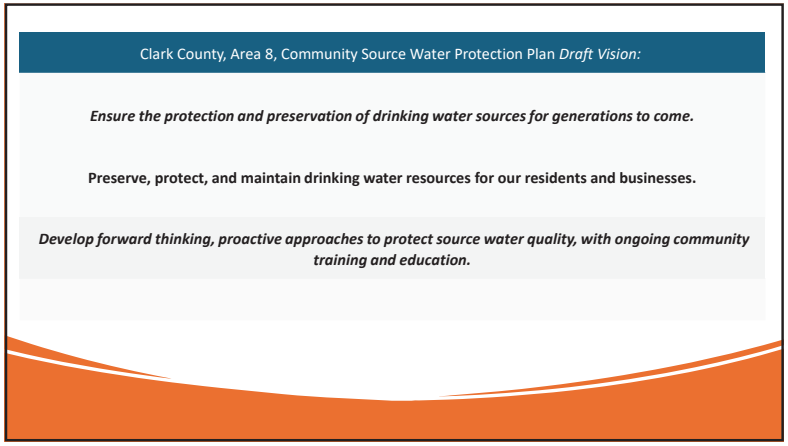
Clark County, Area 8, Community Source Water Protection Plan *Draft Vision:*

Ensure the protection and preservation of drinking water sources for generations to come.

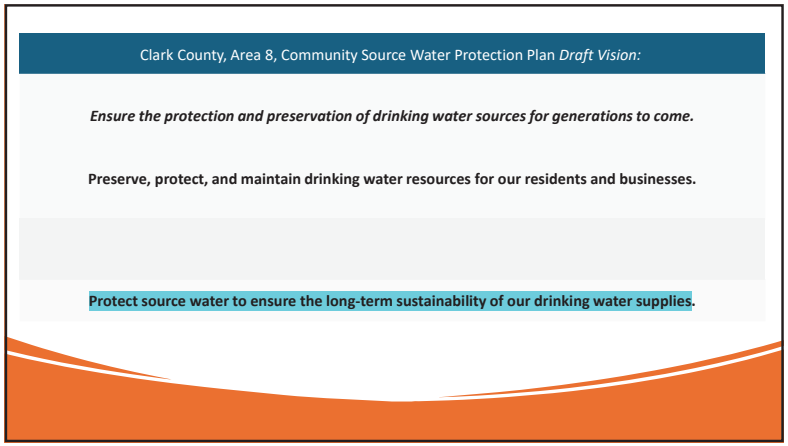
12


Clark County, Area 8, Community Source Water Protection Plan *Draft Vision:*
Ensure the protection and preservation of drinking water sources for generations to come.
Preserve, protect, and maintain drinking water resources for our residents and businesses.

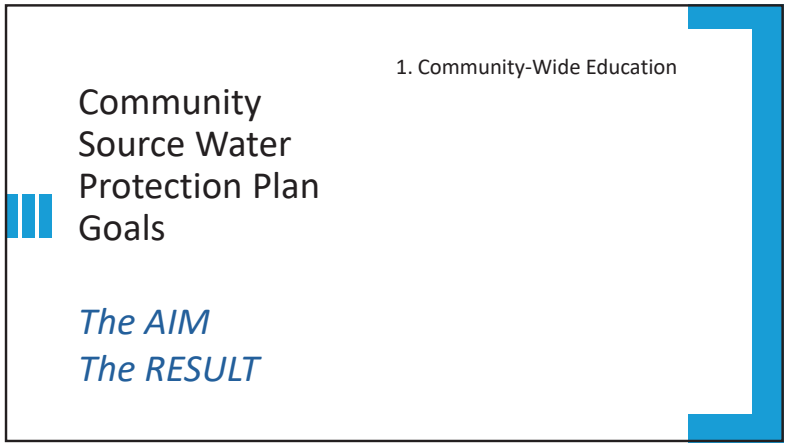
13


Clark County, Area 8, Community Source Water Protection Plan *Draft Vision:*
Ensure the protection and preservation of drinking water sources for generations to come.
Preserve, protect, and maintain drinking water resources for our residents and businesses.
Develop forward thinking, proactive approaches to protect source water quality, with ongoing community training and education.

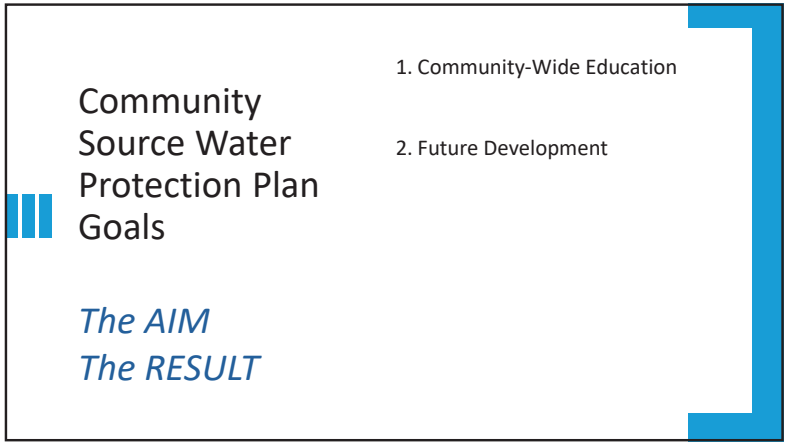
14


Clark County, Area 8, Community Source Water Protection Plan *Draft Vision:*
Ensure the protection and preservation of drinking water sources for generations to come.
Preserve, protect, and maintain drinking water resources for our residents and businesses.
Protect source water to ensure the long-term sustainability of our drinking water supplies.

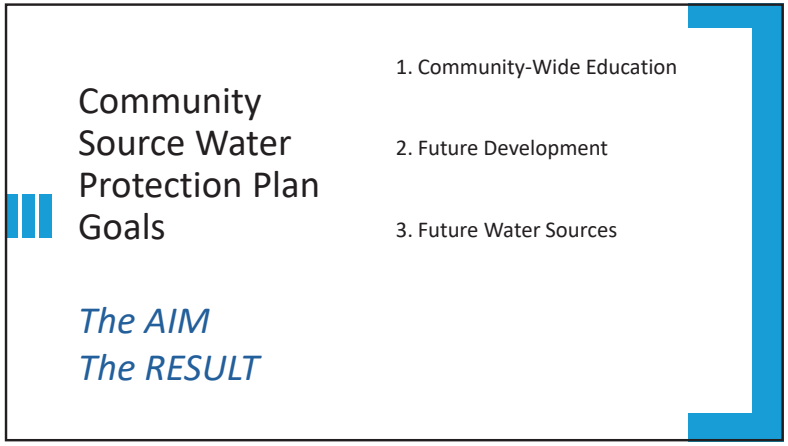
15


1. Community-Wide Education
Community Source Water Protection Plan Goals
The AIM
The RESULT

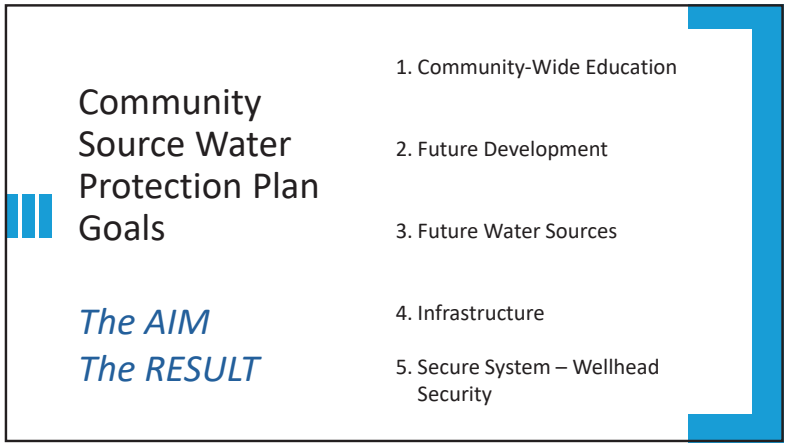
16


Community Source Water Protection Plan Goals
The AIM
The RESULT
1. Community-Wide Education
2. Future Development

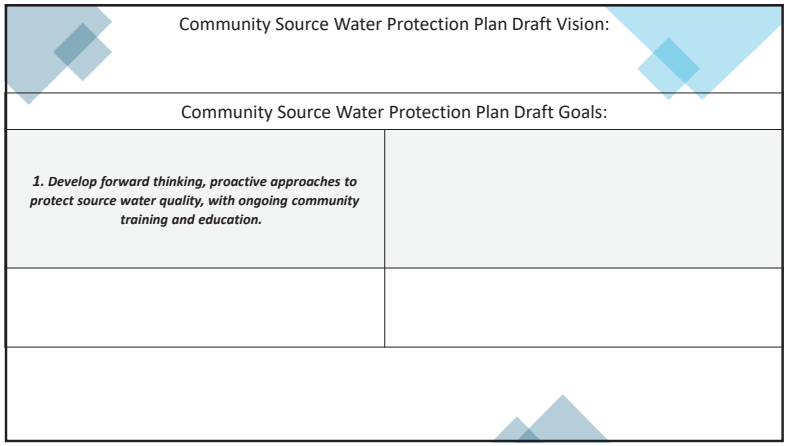
17


Community Source Water Protection Plan Goals
The AIM
The RESULT
1. Community-Wide Education
2. Future Development
3. Future Water Sources

18


Community Source Water Protection Plan Goals
The AIM
The RESULT
1. Community-Wide Education
2. Future Development
3. Future Water Sources
4. Infrastructure
5. Secure System – Wellhead Security

19


Community Source Water Protection Plan Draft Vision:
Community Source Water Protection Plan Draft Goals:
1. Develop forward thinking, proactive approaches to protect source water quality, with ongoing community training and education.

20

Community Source Water Protection Plan Draft Vision:	
Community Source Water Protection Plan Draft Goals:	
1. Develop forward thinking, proactive approaches to protect source water quality, with ongoing community training and education.	2. Use source water protection in community planning and development. Use/Utilize/ source water protection in planning development. *Consider risks to drinking water sources in future development planning.* Protect source water quality in planning development.

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Community Source Water Protection Plan Draft Vision:	
Community Source Water Protection Plan Draft Goals:	
1. Develop forward thinking, proactive approaches to protect source water quality, with ongoing community training and education.	2. Use source water protection in community planning and development. Use/Utilize/ source water protection in planning development. *Consider risks to drinking water sources in future development planning.* Protect source water quality in planning development.
3. *Ensure water sources and storage are proactively protected beyond current standards.* Ensure drinking water sources are protected by improving and maintaining infrastructure.	4. *Continual evaluation of alternative ways to secure water sources.*

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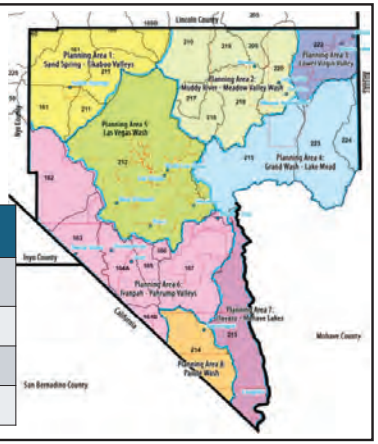
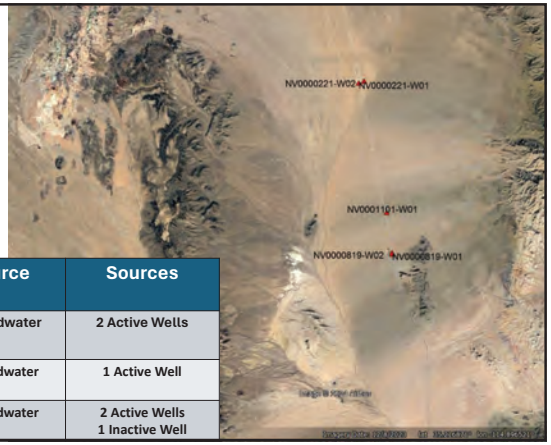
Planning Area 8:
Paiute Wash



Water System	Source
Palm Gardens Water Co-Op	Groundwater
NDOT Searchlight Welcome Center	Groundwater
Searchlight Water Company	Groundwater
Spirit Mountain Utility Company	Groundwater

23

Planning Area 8:
Paiute Wash

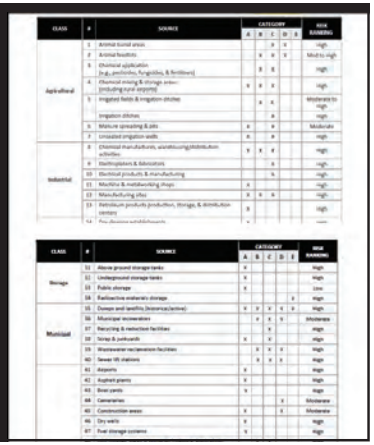


Water System	Source	Sources
Palm Gardens Water Co-Op	Groundwater	2 Active Wells
NDOT Searchlight Welcome Center	Groundwater	1 Active Well
Spirit Mountain Utility Company	Groundwater	2 Active Wells 1 Inactive Well

24

Potential Sources of Contamination

Current and prospective activities that have the potential to release contaminants to the environment



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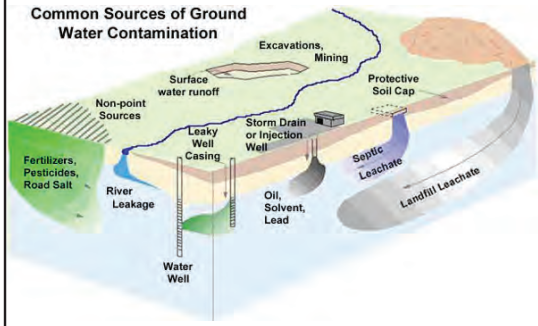
Potential Sources of Contamination

Current and prospective activities that have the potential to release contaminants to the environment



- Hazardous Material
- Storage Handling
- Disposal
- Vandalism

- Controls:
  - ❖Potential for release?
  - ❖Risk to drinking water?
  - ❖Communication?

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Head to Google Earth and review:

Water source locations
Potential Contaminant Sources
GW Flow

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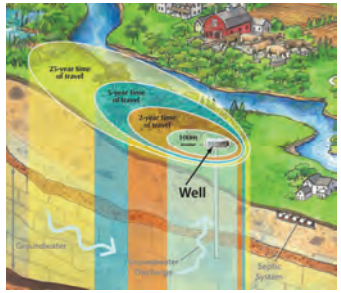
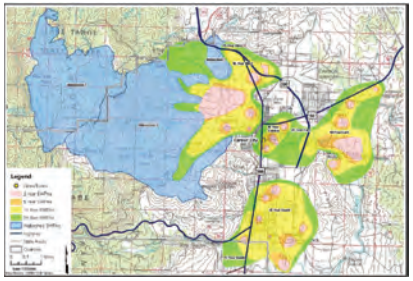
What is a Source Water/Wellhead Protection Area?

An area of land that contributes water to the drinking water supply
An area where man-made pollution poses a threat to a water source
Community-established boundary to protect a water source



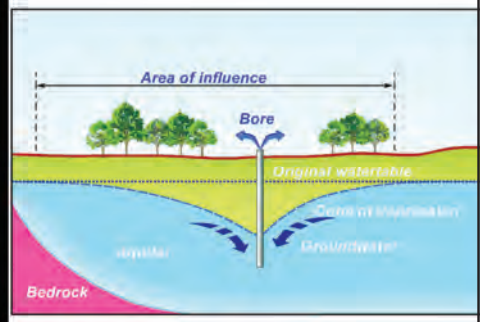


28

Capture Zone

- Region from which water is drawn from a well

Delineating Source Water/Wellhead Protection Areas



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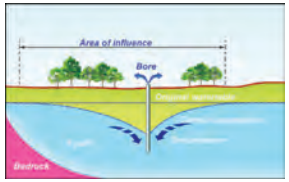
Delineating Source Water/Wellhead Protection Areas

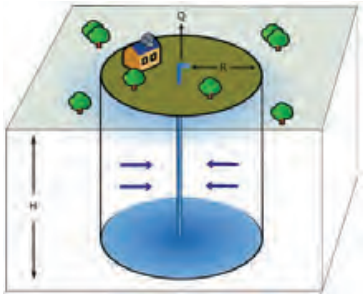
Capture Zone

- Region from which water is drawn from a well



Capture Zone

- Fixed Radius (Vulnerability Assessment Report)
- Calculated Fixed Radius (Time of Travel)
- Uniform Flow Equation (Time of Travel)



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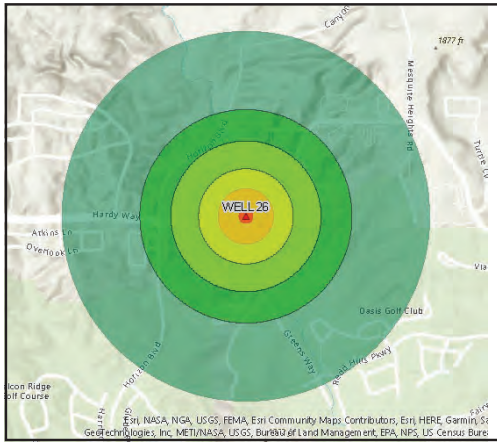


Source Water Protection Area

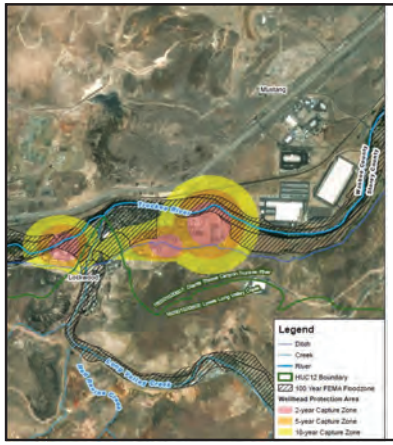
Fixed Radius

- 100 feet

Time of Travel – Calculated Fixed Radius

- 250 Day
- 2 Year
- 5 Year
- 10 Year
- 30 Year

31

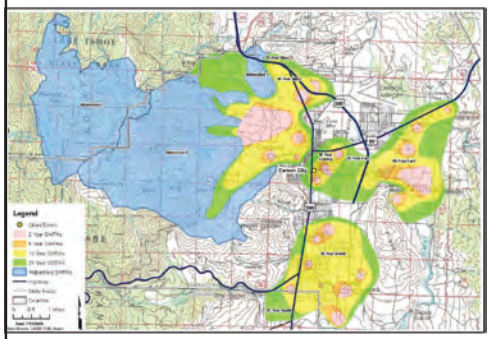


Source Water Protection Area

Time of Travel – Uniform Flow

- 2-Year
- 5-Year
- 10-Year

32



Source Water Protection Area

Watershed &
Time of Travel – Uniform Flow

- **2-Year**
- **5-Year**
- **10-Year**
- **25-Year**

33

Kick off management strategies if we have time.

34

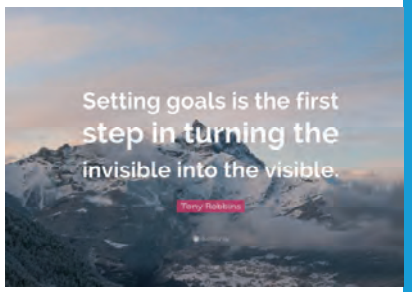
Community Source Water Protection Plan Vision

The WHAT
The PURPOSE

35

Community Source Water Protection Plan Goals

The AIM
The RESULT



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Community Source Water Protection Plan Management Strategies

The HOW
The WHO

37

Strategy:
"HOW" & "WHO"

Infrastructure Maintenance

Planning For Future Water Sources

Emerging Contaminants?

Education & Outreach

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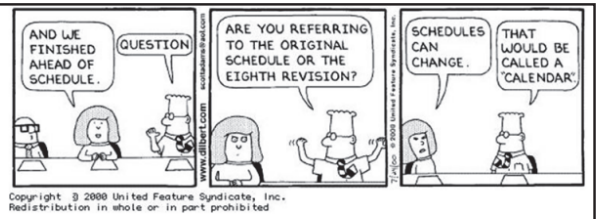
Draft Schedule



Early April 2024 – Potential Contaminant Source Inventory, Capture Zones & Source Water Protection Areas

Late April 2024 - Strategies, Action Plan

May 2024 – Draft Plan for Review

June 2024 – Present to Board for Approval & Final Document

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Agenda

Source Water Protection (SWP) Program

Source Water Protection Program

Community Source Water Protection (CSWP) Plan, Area 8, Clark County, Team Meeting #2

Date: March 12, 2024
Time: 9:00 – 11:00 AM
Where: Virtual on Teams

1. **Welcome & Introductions**
   - CSWP Plan Outline Recap
2. **Finalize CSWP Plan Vision**

   You can't depend on your eyes when your imagination is out of focus.

   -Mark Twain
3. **Revisit and Finalize CSWP Plan Goals**

   Setting Goals is the first step in turning the invisible into the visible.

   -Tony Robbins
4. **Review Updated Information and Mapping**
   - Drinking Water Source Inventory
   - Potential Contaminant Source Inventory and Mapping
   - Groundwater Flow Direction
5. **Bonus: Team Brainstorm – Management Strategies**
   - Management strategies to protect YOUR sources of drinking water are locally driven. Get CREATIVE!
   - What strategies can easily be put into action to implement YOUR Plan Vision and Goals?

Schedule and Next Steps

Cal-Nev-Ari Pictures

Draft Meeting Notes

Utility Services, Inc. Spirit Mountain Utility Co., & RCI

Tuesday, April 3, 2024
9:00-11:00AM (PST)
Virtual Teams Meeting (Two persons joining via phone)

Attending

NAME	CONTACT INFORMATION		AFFILIATION
Ray Matusky	725-268-1385	ray@cal-nev-ari.net	General Manager, Spirit Mountain Utility Co.
Mary Matusky	608-469-9638	calnevaribooks@gmail.com	Account Manager, Spirit Mountain Utility Co.
Marisa Black-Pennington	702-556-8069	marisa@utilityservenv.com	Manager, Utility Services inc.
Alison Cramer	775-883-1600	alison@rci-nv.com	Resource Concepts, Inc. (RCI)
Jill Sutherland	775-883-1600	jill@rci-nv.com	Resource Concepts, Inc. (RCI)
Alaina Russky	775-883-1600	alaina@rci-nv.com	Resource Concepts, Inc. (RCI)

Purpose & Overview

The purpose of this meeting was to finalize the potential contaminant source inventory (PCS) for the Community Source Water Protection (CSWP) Plan, Clark County, Nevada, Planning Area 8.

Discussion

1. Welcome

Two members of the Local Planning Team and RCI utilized Google Earth to discuss the potential contaminant source inventory in Cal-Nev-Ari.

2. Potential Contaminant Source Inventory

Representatives of Spirit Mountain Utilities and Cal-Nev-Ari discussed their potential contaminant source concerns, and the Group agreed on PCS points, including:

- Add the Potential new truck stop to the west of I-80 and north of Well 2 as a PCS point.
    - Connection to the Spirit Mountain Utility water system is stalling development, as fire flow requirements are proving difficult to meet.
    - Should the development move forward, Cal-Nev-Ari might inquire about a used oil program through the truck stop.
- Remove the Northern bureau of Corrective Actions Underground Storage Tank point, as it is likely in the wrong location.
- Add points on the Taxiway and runway.
    - Two points in the north and two points in the south.
    - Plane storage occurs in residential hangars.
    - Owner of Universal Green Technologies is responsible for cleanup if there is a spill on the runway or taxiway.
    - Biggest concern would be a crash landing or post take-off accident.
- Add points on I-80 between Well 1 and Well 2.
- Add points on the leach fields.
    - RV Park and Commercial sewage disposal system.

- Most residents have a septic system with a leach field.
- Remove the construction permit.
- Add point on the inactive Fire Station.
- Future industry could be expanded along the eastern border in the interstate.
- Cal-Nev-Ari Fireworks was a point included from the desktop survey, although it's no longer in service.
  - RCI will follow up on its origins.
- Abandoned mine lands (AMLs) exist to the east and the west.
  - Juniper mine is 10 miles southeast of Cal-Nev-Ari.
  - Heart mine was on the California side, to the west of the divide.
    - Juniper nor Heart mines are near term water quality threats to Cal-Nev-Ari.
  - RCI will double check on other AMLs near Cal-Nev-Ari.

Next Steps / To Do List

Next Virtual Team Meetings:
May 9, 2024, from 9:00-11:00AM (PST)

Resource Concepts, Inc.

- Follow-up on the origin of Cal-Nev-Ari Fireworks.
- Double check on AMLs near Cal-Nev-Ari.
- Prepare PCS inventory for review with the Team.
- Calculate time-of-travel capture zones and present PCSs within each to the Team.

DRAFT Agenda

Source Water Protection (SWP) Program

Source Water Protection Program

Community Source Water Protection (CSWP) Plan, Area 8, Clark County, Team Meeting #3

Date: May 9, 2024
Time: 9:00 – 11:00 AM
Where: Virtual on Teams

1. **Overview**
   - Brief recap of the planning process
   - Proposed CSWP Plan Outline
2. **Discuss Time-of-Travel Capture Zones**
   - Drinking Water Source Inventory
   - Groundwater Flow Direction
3. **Finalize Source Water Protection Areas**
   - Potential Contaminant Sources within Capture Zones
4. **Management Strategies**
   - What strategies and actions work to implement YOUR Plan Vision and Goals

Schedule and Next Steps

Cal-Nev-Ari Pictures

Draft Meeting Notes

Utility Services, Inc. Spirit Mountain Utility Co., NWRA, & RCI

Thursday, May 9, 2024
9:00-11:00AM (PST)
Virtual Teams Meeting (Two persons joining via phone)

Attending

NAME	CONTACT INFORMATION		AFFILIATION
Ray Matusky	725-268-1385	ray@cal-nev-ari.net	General Manager, Spirit Mountain Utility Co.
Mary Matusky	608-469-9638	calnevaribooks@gmail.com	Account Manager, Spirit Mountain Utility Co.
Marisa Black-Pennington	702-556-8069	marisa@utilityservenv.com	Manager, Utility Services inc.
Joe Leedy		jleedy@cleanwaterteam.com	Principal Planner, Water Quality, CCWRD
Ethan Mason	775-687-9311	e.mason@ndep.nv.gov	Coordinator, NDEP Integrated Source Water Protection Program (ISWPP)
Christopher Berkey	775-296-5673	Christopher.berkey@nrwa.org	Nevada Source Water Protection Specialist, National Rural Water Association (NRWA)
Neal Do		nealdomd@gmail.com	Acting President, Spirit Mountain Utility Co. Universal Green Technology, Inc.
Alison Cramer	775-883-1600	alison@rci-nv.com	Resource Concepts, Inc. (RCI)
Jill Sutherland	775-883-1600	jill@rci-nv.com	Resource Concepts, Inc. (RCI)
Erin Smith	775-883-1600	erin@rci-nv.com	Resource Concepts, Inc. (RCI)

Purpose & Overview

The purpose of this meeting was to finalize Source Water Protection Areas (SWPAs) for the Community Source Water Protection (CSWP) Plan, Clark County, Nevada, Planning Area 8. This was done by reviewing capture zone modeling as well as Potential Contaminant Sources (PCSs) and land jurisdiction.

Discussion

1. Welcome

Spirit Mountain Utility Company introduced a new member, Neal Do, to the Local Planning Team. Neal is the Acting President at Spirit Mountain Utility Company for Universal Green Technology, Inc (UGT). The Team reviewed the basic components of a Community Source Water Protection Plan (CSWP Plan) and the potential Plan outline (subject to change):

- Planning Area 8 CSWP Plan
  - Introduction
  - Source water protection area delineation
  - Plan implementation
  - References
- Attachment A – Source Water Protection Area Maps
- Attachment B – Meeting Notes
- Attachment C – Capture Zone and Potential Contaminant Source Report
- Attachment D – Education Plan

RCI requested the Team to send pictures for the CSWP Plan!

2. Revisit the CSWP Plan Vision and Goals

The Team reviewed and agreed upon the CSWP Plan Vision and four CSWP Plan Goals.

3. Review Time-of-Travel Capture Zones

The Team reviewed the time-of-travel capture zone modeling approach, where the uniform flow equation was used to model the 2-, 5-, and 10-year time-of-travel capture zones. Modeling parameters and regional groundwater flow direction were based off a 2013 Hydrologic Reconnaissance Report of the Piute Valley (Southern Nevada Water Authority, 2013).

4. Review Potential Contaminant Source Inventory within Capture Zones

Maps of the Cal-Nev-Ari wells and capture zones were reviewed by the Team, which included the Potential Contaminant Sources (PCSs) that exist within the mapped capture zones. The PCS inventory was developed in a meeting between RCI and Spirit Mountain Utilities on April 3, 2024.

- In theory, if a contaminant within a modeled capture zone were to reach the water table, it could take either 2, 5, or 10 years to reach the drinking water well.

5. Discuss and Finalize Source Water Protection Areas

Source Water Protection Areas are community-driven management area boundaries that help inform local water purveyors, leaders, and planners in managing potential risks to public drinking water sources.

The PCS inventory within the modeled capture zones helped the Team discussions around Source Water Protection Areas (SWPAs). Property boundaries or land jurisdiction considerations were also considered.

The Team decided to delineate the 10-year capture zone as their SWPAs which includes all of Cal-Nev-Ari. 1,000-foot buffers around each well and one future water source were also included to ensure localized source water protection around each current and potential future drinking water source.

6. Management Strategies

The Team discussed and agreed on various management strategies to safeguard public drinking water sources within SWPAs, including:

- Public Education and Outreach,
- Planning and Review,
- Secure Locations for Future Water Sources,
- Infrastructure and Wellhead Security, and
- Emerging Contaminants.

Specific possible actions to include under each management strategy were discussed by the Team and updated on the meeting PowerPoint (attached).

*Other Thoughts from the Team

Team Concerns Include:

- Mobile home park and septic near Well 1,
- Waste oil containment options,
- Security and electricity by Well 3,
- Potential funding sources for infrastructure,

- Illegal dumping in open space or BLM land,
    - Laughlin Landfill is over 25 miles away.
- Pending business developments in the area, and
- RV Park residents may not qualify to take materials to the Laughlin Landfill if they are not residents of Clark County.
    - Add coordination with Laughlin Landfill to Action Plan to see about temporary admittance for part-time residents of Cal-Nev-Ari RV Park.

The Clark County Clean Water Team provided several suggestions, outlined below, regarding public education and outreach and potential low-cost community-based solutions to protect source water quality. Upon website completion, Cal-Nev-Ari will consider coordinating with the Clean Water Team on educational materials for the website and community.

Team Solutions/Considerations/Resources Include:

- Community Composting | US EPA
- Seek funding for HHW collection and recycling events (possibly partner with Searchlight
- Best Battery-Powered Home Security Cameras of 2024 (safehome.org) – Battery powered security camera
- Use volunteer fire department for community education and outreach events.
- Stormwater (stormwatervegas.com) – Great interactive websit
- Welcome to Clark County, NV (clarkcountynv.gov) – Flyers and resources for outreach
- Signage, fencing, cameras around well heads.
- Educate private pilots and OHV recreationalists about proper mechanical maintenance and disposal of waste.
- Welcome to Clark County, NV (clarkcountynv.gov) – Best management practices for all kinds of mechanical and residential activities. CC Water quality welcomes use and distribution of all their materials.
- What does it mean to be surrounded by a National Monument – any opportunities?
- Learning more about sustainable septic systems.
- Business-Environmental-Program-Rack-Card.pdf (unrbep.org).
- “UGT is an entity that develops natural and environmentally friendly solutions for water, soil and green energy so will be directly involved in the future development of innovative solutions for the Cal Nev Ari in the future. At this time, we are going through a lot of restructuring and haven’t sunken our teeth into the real meat of our work yet. But no doubt, when all pieces are in place, we will work to try to implement eco-friendly systems right there in Cal Nev Ari for the long term.” – Neal Do
- “The board does not oppose the numerous attempts to upgrade and address certain environmental issues that may need addressing. At this time, it is a funding issue until the company finds its financial footing to be able to sustainably support these efforts in the long term. Thanks for letting me participate. A wealth of info. Thanks everyone.” – Neal Do
- UGT supports the SWP program and sustainable solutions for Cal-Nev-Ari and Spirit Mountain Utilities.
- Coordination to share common resources with other PWSs and Communities in Planning Area 8.

Next Steps

Anticipated Schedule, subject to change:

- June 2024 – Draft plan for Team to review
- July 2024 – Present to Board for approval and final document

Next Virtual Team Meeting: **June 25, 2024, from 9:00-11:00AM (PST)**

RCI:

- Send Team a copy of this meeting's PowerPoint and the "chat".
- Send OneDrive link for Team to upload pictures for the CSWP Plan.
- Draft CSWP Plan Sections for Review/

NRWA:

- Send Sprit Mountain education/outreach and circuit rider info.
- Put Cal-Nev-Ari staff in touch with contact to help navigate State Revolving Fund resources.

Nevada Integrated SourceWater Protection Program

NDEP

Bureau of Safe Drinking Water:
Ethan Mason
e.mason@ndep.nv.gov
775-687-9311

RCI Resource Concepts Inc
Jill Sutherland, PE - Jill@RCI-NV.com
Alison Cramer - Alison@RCI-NV.com
Erin Smith – Erin@RCI-NV.com
340 N. Minnesota Street
Carson City, Nevada
775-883-1600
Contractor for the Nevada Integrated Source Water Protection Program

1

Community Source Water Protection Plan Outline (subject to change) – Publicly Available Documents and Sensitive Documents

Table of Contents

Attachment/Appendix A – Source Water Protection Area Maps

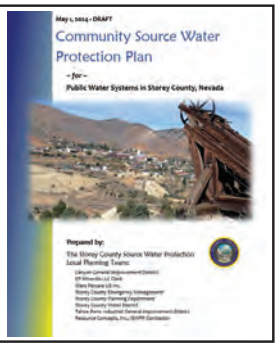
Attachment/Appendix B – Meeting Notes

* Attachment/Appendix C –
*Capture Zone & Potential Contaminant Source Inventory Report

Attachment/Appendix D – Education Materials

*Sensitive Information – *Ask your Public Water System for Review*

2



3

Community Source Water Protection Plan Vision

The WHAT
The PURPOSE

4

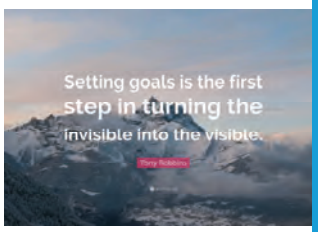
Community Source Water Protection Plan Vision:

Protect source water to ensure the long-term sustainability of our drinking water supplies.

5

Community Source Water Protection Plan Goals

The AIM
The RESULT



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Community Source Water Protection Plan Vision:

Protect source water to ensure the long-term sustainability of our drinking water supplies.

Community Source Water Protection Plan Goals:

1. Develop forward thinking, proactive approaches to protect source water quality, with ongoing community training and education.	2. Use source water protection in community planning and development.

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Community Source Water Protection Plan Vision:

Protect source water to ensure the long-term sustainability of our drinking water supplies.

Community Source Water Protection Plan Goals:

1. Develop forward thinking, proactive approaches to protect source water quality, with ongoing community training and education.	2. Use source water protection in community planning and development.
3. Ensure drinking water sources are protected by improving and maintaining infrastructure.	*4. Continual evaluation of alternative ways to secure water sources.*

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Planning Area 8:
Paiute Wash

Water System	Source
Palm Gardens Water Co-Op	Groundwater
NDOT Searchlight Welcome Center	Groundwater
Searchlight Water Company	Groundwater
Spirit Mountain Utility Company	Groundwater

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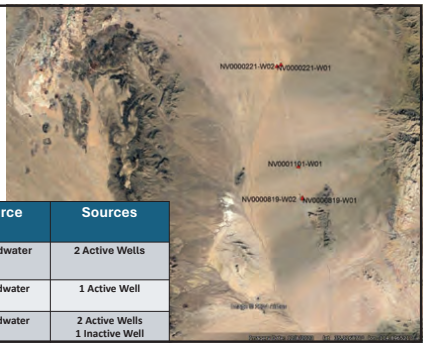
Planning Area 8:
Paiute Wash



Water System	Source	Sources
Palm Gardens Water Co-Op	Groundwater	2 Active Wells
NDOT Searchlight Welcome Center	Groundwater	1 Active Well
Spirit Mountain Utility Company	Groundwater	2 Active Wells 1 Inactive Well

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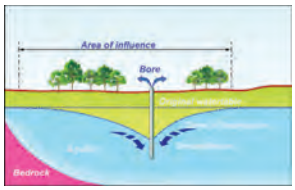
What is a Capture Zone???

Capture Zone

- Region from which water is drawn from a well



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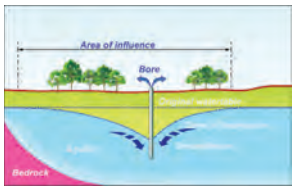
What is a Capture Zone???

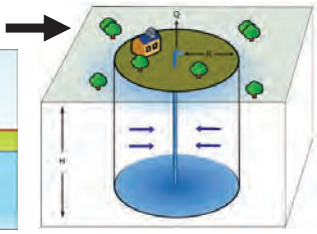
Capture Zone

- Region from which water is drawn from a well



Capture Zone

- Uniform Flow Equation (Time of Travel)
  - 2-, 5-, 10-Year Time of Travel



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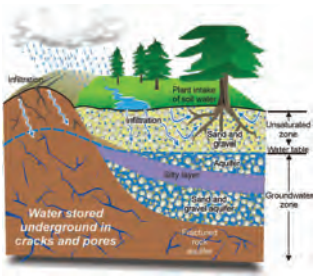
Where is your water stored?



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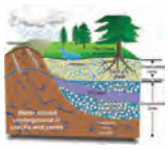
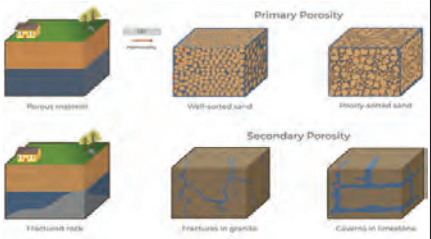
Where is your water stored?

How does the water move through your aquifer?



Uniform Flow
Uniform Aquifer Properties



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Uniform Flow = Uniform Aquifer Properties

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Uniform Flow = Uniform Aquifer Properties

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Community Source Water Protection Plan Management Strategies...

ACTION PLAN

The HOW
The WHO

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Source Water Protection Areas

Time-of-Travel

- **2-Year**
- **5-Year**
- **10-Year**

- ❖ Public Education and Outreach
- ❖ Planning and Review
- ❖ Secure Locations for Future Water Sources
- ❖ Infrastructure and Wellhead Security
- ❖ Emerging Contaminants

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Action Plan ❖ Public Education and Outreach

- Funding/Education for used oil collections and haul-away
- SWP Presentations at events and town hall – septic care and maintenance, backflow devices & leak detections – events like off-road races
- Website development – links to SWP information from Clean Water Team – no legal issues – encouraged to share information
- Proper waste disposal and BMPs to protect water quality
- SWP signage around wellheads, on fencing etc.
- Fire hydrant education

Area 8 And Broader Clark County:

- Coordinate with the Clean Water Team on Education and Outreach materials
- Firefighter coordination, emergency responders, searchlight board presentation, NDOT, spill response

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Action Plan ❖ Planning and Review

- Consider source water protection in the local development review process

Area 8 And Broader Clark County:

- Support SWP communication between Cal-Nev-Ari and local agencies in Clark County regarding prospective developments
- Support updates to the 208 Plan
- Work with Clark County Water Reclamation District to explore wastewater treatment options – different group than CWT but can get linked in – possible option – injection
- Emergency Planning and Response – coordinate with the group on SWP/make presentation

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Action Plan ❖ Secure Locations for Future Water Sources

Area 8 And Broader Clark County:

- Collaboration with Piute Valley Public Water Systems on hydrogeological information
- Use existing studies for in Piute Wash
- Consider land use and zoning when reviewing proposed future well locations
- share common geography and geology so want to share ideas – would be interested in a meeting with the Area 8 group

21

Action Plan ❖ Infrastructure and Wellhead Security

Cal-Nev-Ari Specific:

- Security Cameras around Wellheads and fencing
- Look into funding for electricity development
- GIS Mapping assistance
- SWP signage
- Explore funding opportunities for infrastructure improvements as it pertains to SWP

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Action Plan ❖ Emerging Contaminants

Cal-Nev-Ari Specific:

- Coordinate with NDEP on the availability of, and eligibility for, funding to address emerging contaminants
- GIS Mapping Assistance
- Promote community-wide education about emerging contaminants

Area 8 and Broader Clark County:

- Coordinate with Piute Valley Public Water Systems on current information and technologies –

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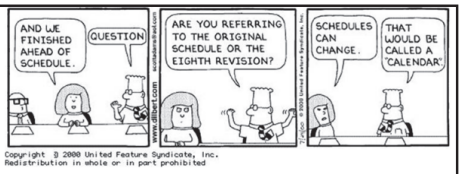
Draft Schedule



June 2024 – Draft Plan for Review

July 2024 – Present to Board for Approval & Final Document

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Draft Meeting Notes

Clark County, Planning Area 8 Source Water Protection
LVVWD, NDEP, RCI

Date: Thursday, July 24, 2024
Time: 11:00-12:00 (Pacific)
Where: Virtual Teams Meeting

Attending

NAME	CONTACT INFORMATION		AFFILIATION
	Ph #	Email	
Jack M. Childress	702-862-3782	Jack.childress@lvvwd.com	LVVWD Water Resources - Hydrologist
Jeff Johnson	702-862-3748	Jeff.johnson@lvvwd.com	LVVWD Water Resources – Special Projects Manager
James P. Prieur	702-862-7437	James.prieur@lvvwd.com	LVVWD Water Resources – Hydrology Supervisor, P.G., C.E.M.
Kathy Flanagan	702-539-3401	Kathy.flanagan@lvvwd.com	LVVWD Public Affairs - Liaison for Searchlight TAB
Ethan Mason	775-687-9311	e.mason@ndep.nv.gov	Coordinator, NDEP Integrated Source Water Protection Program (ISWPP)
Alison Cramer	775-883-1600	alison@rci-nv.com	Resource Concepts, Inc. (RCI)

Purpose & Overview

This meeting provided an opportunity for the Las Vegas Valley Water District (LVVWD), The Nevada Division of Environmental Protection (LVVWD), and Resource Concepts, Inc. (RCI) to discuss and collaborate on the draft community source water protection plans for the Piute Valley, Clark County, Nevada.

Discussion

1. 2024 Source Water Protection Plan for Searchlight Public Water System (Searchlight Plan)

NDEP reviewed comments on the Draft Searchlight Plan, and the LVVWD agreed to:

- Change the title to, 'Community Source Water….'.
- Add:
  - Contact information and/or website information to the Factsheet.
  - Public Meeting Appendix.
  - Revision history page.

Nevada Integrated SourceWater Protection Program

        - NDEP confirmed that major updates may need to be considered for an NDEP endorsement, whereas minor updates generally do not.
- Reference Emerging Contaminants and strategies to manage them in the Searchlight Area.
    - LVVWD confirmed that their strategies for ECS generally include:
        - Sampling for presence,
        - Estimating concentrations, and
        - Looking at vulnerabilities:
            - What is the potential risk to a water source?
    - NDEP confirmed that reference to ECs in CSWP Plans can be general:
        - General strategies to prevent contamination at the source,
        - Broad actions to secure funding for small, disadvantaged systems, and
        - Mapping potential sources of contamination.
    - NDEP agreed to send the ECs of concern list to LVVWD.
- Consider regional outreach and education for source water protection in the Piute Valley.
    - Each rural water system operated by the LVVWD is considered an individual system with their own budgets that could benefit from ISWPP education and outreach.
    - General water system education and updates regularly take place at the Searchlight TAB, including updates on water usage and infrastructure projects.
- Collaborate on a presentation to the Searchlight TAB about the Searchlight Plan as well as the CSWP Plan for all the public water systems in the Piute Valley.
    - Highlight similarities and where the two plans overlap,
    - Discuss differences in water quality concerns, and
    - Elaborate on future source water protection collaboration in the Piute Valley.
- NDEP confirmed that the Searchlight Plan source water protection areas (SWPAs) meet NDEP criteria for endorsement.

The LVVWD agreed to review the comments, update the document, and send out for a final review prior to a Searchlight TAB presentation.

2. 2024 Draft CSWP Plan for Public Water Systems in Piute Valley, Clark County, Nevada.

The LVVWD provided an overview of comments and NDEP and RCI agreed to:

- Provide LVVWD with the ISWPP PowerPoint materials used in CSWP Plan Team Meetings.
- Change to Searchlight Water System.
- Consider including a ‘Factsheet’, similar to the Searchlight Plan.
- Consider revisiting the colors on the Spirit Mountain Utilities SWPA Map.
    - Revise colors for wells that were not modeled to make the SWPA delineation more clear.
- Provide LVVWD with a copy of the Technical Appendix C.

The LVVWD tentatively agreed to provide comments on the Draft CSWP Plan to NDEP and RCI by the first week of August 2024. Should a schedule conflict arise, NDEP agreed that outreach to the Area 8 Planning Team for an extension is agreeable. Comments will include:

- General technical comments on the hydrogeological modeling, and
- Incorporation of Searchlight Water System into the CSWP Plan.

NDEP and LVVWD agreed to tentatively meet in-person to discuss the update to the Wellhead Protection Plan for Blue Diamond Water System.

Next Steps

Next Virtual Team Meeting: TBD

Resource Concepts, Inc.:

- Send LVVWD a link to the Draft CSWP Plan Technical Appendix.
- Provide LVVWD with source water protection presentation and educational materials.
- Incorporate LVVWD Draft Plan edits and send to Planning Team for review.

NDEP:

- Provide ECs of concern list to LVVWD.
- Schedule a meeting to discuss Blue Diamond WHPP Update.

LVVWD

- Revise the Draft Searchlight Plan and send to NDEP for final review prior to Board presentation.
- Provide Draft CSWP Plan comments to NDEP and RCI by first week of August 2024.

DRAFT Agenda

Source Water Protection (SWP) Program

Source Water Protection Program

Community Source Water Protection (CSWP) Plan, Area 8, Clark County

Date: August 6, 2024
Time: 9:00 – 10:00 AM
Where: Virtual on Teams

1. **Discuss Final Comments**
2. **Review Comments from LVVWD**
3. **Discuss Final Draft Schedule**
4. **Board Meeting Schedule**

Next Steps….

Draft Meeting Notes

Piute Valley – Clark County Planning Area 8

Tuesday, August 6, 2024
9:00-10:00AM (PST)
Virtual Teams Meeting (One person joining via phone)

Attending

NAME	CONTACT INFORMATION		AFFILIATION
Ray Matusky	725-268-1385	ray@cal-nev-ari.net	General Manager, Spirit Mountain Utility Co., General Manager
Marisa Black-Pennington	702-556-8069	marisa@utilityservenv.com	Manager, Utility Services inc.
Jeffrey Johnson	702-862-3748	Jeff.johnson@lvvwd.com	LVVWD, Sr. Hydrologist, Project Lead for SWP and Rural Water Efforts
Elise Nguyen		enguyen@cleanwaterteam.com	CCWRD
Christopher Berkey	775-296-5673	Christopher.berkey@nrwa.org	Nevada Source Water Protection Specialist, National Rural Water Association (NRWA)
Alison Cramer	775-883-1600	alison@rci-nv.com	Resource Concepts, Inc. (RCI)
Jill Sutherland	775-883-1600	jill@rci-nv.com	Resource Concepts, Inc. (RCI)
Erin Smith	775-883-1600	erin@rci-nv.com	Resource Concepts, Inc. (RCI)

Purpose & Overview

The purpose of this meeting was to discuss: comments on draft documents, integration of the CSWP Plans for the Searchlight Public Water System and the other water systems in Piute Valley, and schedule for RCI to provide final draft document for approval.

Discussion

1. Discuss Final Comments

The meeting began with quick introductions from all the participants about their roles in source water protection.

RCI has revised the CSWP Plan to address comments. The group reviewed information provided by LVVWD, including CSWP Plan for the Searchlight Public Water System Fact Sheet (Factsheet) and source water protection area (SWPA) map. Adding both documents to the draft CSWP Plan will provide a cohesive and complementary approach to source water protection in Piute Valley. Discussion highlights included:

- Searchlight has two back up wells and one primary well.
- One well is high in arsenic; there is an existing system to remove arsenic.
- Capture zones/SWPAs are intended to consider the highway, historic mining operations, and the adjacent town.
- There are no septic systems in Searchlight and centralized wastewater treatment is located on the south side of town, far from the Searchlight wells.
- LVVWD actively works with the Searchlight Town Advisory Board (TAB).

2. Review Comments from LVVWD

The group reviewed comments and discussions from the LVVWD on the draft Piute Valley CSWP Plan, and agreed to:

- Add the Searchlight Factsheet as an appendix to the draft CSWP Plan to promote future source water protection collaboration in the Piute Valley.
- Add the Searchlight SWPA Map to Appendix A.
- LVVWD anticipates introducing source water protection for the Searchlight Public Water System to the TAB prior to a group presentation.
- The group will coordinate a future TAB presentation about how CSWP Plans for Searchlight and Piute Valley are complementary.

Comments from the group have been appreciated and, overall, there are few other changes to the CSWP Plan draft.

3. Discuss Final Draft Schedule

RCI will work to have the final draft of the Piute Valley CSWP Plan to the group by the week of August 26th.

4. Board Meeting Schedule

UGT will meet the last week of August, however, the Board would ideally like two weeks to review materials. A mid-September Board meeting for approval was suggested. RCI will follow-up with UGT and Spirit Mountain Utilities.

LVVWD will coordinate with NDEP on scheduling future presentations to the Searchlight TAB.

Next Steps

Next Virtual Team Meeting: August 28, 2024, from 9 – 10 am (PST)

Resource Concepts, Inc.:

- Incorporate comments and prepare Piute Valley CSWP Plan final draft
- Send email to CCWRD to ask for any additional comments.
- Update group on timelines for approval of the final draft of the CSWP Plan.
- Coordinate with NDEP final draft language for CSWP Plan endorsement.

Team:

- Provide final comments to RCI.
- Coordinate with RCI regarding meeting schedules.

Piute Valley, Clark County NV, Planning Area 8

Public Water System Approval

UNIVERSAL GREEN TECHNOLOGY

11751 MONARCH STREET
GARDEN GROVE, CA 92841

RESOLUTION

WHEREAS, on January 22nd, 2024, Spirit Mountain Utilities Co. representing the public water system and drinking water source serving the town of Cal Nev Ari has approved the participation in Nevada's Integrated Source Water Protection Program; and

WHEREAS, in cooperation with Nevada's Integrated Source Water Protection Program and through coordinated efforts from local representatives of Spirit Mountain Utilities Co., RCI, NDOT, Universal Green Technology, Utilities Services, Clark County Water Quality, the Rural Water Association and the Nevada Environmental Protection Agency, a Community Source Water Protection Program was developed to safeguard safe drinking water in Nevada's southern Piute Valley in which the town of Cal Nev Ari is located.

WHEREAS, the CSWP Program provides a framework for the long-term protection and conservation of public water supplies in the town of Cal Nev Ari, NV and

WHEREAS, approval of the CSWP Program is a prerequisite for state endorsement and grants to implement action projects recommended in the CSWP Program and

WHEREAS, the Board of Directors of Universal Green Technology and the Spirit Mountain Utilities Co. finds that it is in the best interest of the town of Cal Nev Ari to approve the CSWP Plan to help guide activities to protect and conserve the town's water resources.

NOW, THEREFORE, IT IS HEREBY RESOLVED by the Board of Directors of Universal Green Technology that the "Community Source Water Protection Plan" for the Southern Piute Valley, Clark County, Nevada be approved as an official plan of the town of Cal Nev Ari.

This RESOLUTION is unanimously approved by the Board of Directors on November 15th, 2024.

Mr. Moon Thai – Chairman

Nevada Division of Environmental Protection

Endorsement

NEVADA DIVISION OF
ENVIRONMENTAL
PROTECTION

STATE OF NEVADA
Department of Conservation & Natural Resources
Joe Lombardo, *Governor*
James A. Settelmeyer, *Director*
Jennifer L. Carr, *Administrator*

January 21, 2025

Universal Green Technology, Inc. Board of Directors
Mr. Moon Thai – Chairman
11751 Monarch St.,
Garden Grove, CA 92841

RE: NDEP Endorsement of the "Community Source Water Protection Plan for Public Water Systems in the Piute Valley, Clark County, Nevada, Planning Area 8"

Dear Mr. Moon Thai,

The Nevada Division of Environmental Protection (NDEP) is pleased to endorse and approve the "Community Source Water Protection Plan for Public Water Systems in the Piute Valley, Clark County, Nevada, Planning Area 8" Plan approved by the Universal Green Technology Board of Directors on November 15, 2024. This new Plan was created through the collaboration of the water systems, their staff and additional stakeholders over the past year.

The Plan meets established criteria for the State of Nevada's Integrated Source Water Protection Program (ISWPP) and endorsement of a Community Source Water Protection Plan. The local planning team took considerable time to develop and adopt a Plan that meets their community's source water priorities. The approval of this Plan offers participants the opportunity to request technical and financial assistance through NDEP's ISWPP.

NDEP congratulates the community's work in protecting drinking water sources and would like to recognize all the team participants and partnering organizations (copied) who gave their time to ensure the plans success. We appreciate the participation and perspectives brought by each of the team members throughout this community planning process. It was our sincere pleasure to work with each of them and NDEP looks forward to continued collaboration to implement the Plan.

For further assistance, please email the Bureau of Safe Drinking Water, Source Water Protection Program, ndepsourcewater@ndep.nv.gov, or call us at 775-687- 9521.

Sincerely,

Ethan Mason
NDEP ISWPP Coordinator

901 S. Stewart Street, Suite 4001 • Carson City, Nevada 89701 • p: 775.687.4670 • f: 775.687.5856 • ndep.nv.gov

Printed on recycled paper

CC:

Clark County Water Quality
District EPA Region 9 SWP Coordinator
Las Vegas Valley Water District
Nevada Division of Environmental Protection, Bureau of Safe Drinking Water
Resource Concepts, Inc., ISWPP Contractor
Rural Water Association
Spirit Mountain Utility Company
Universal Green Technology
Utility Services, Inc.

NEVADA DIVISION OF
ENVIRONMENTAL
PROTECTION

STATE OF NEVADA
Department of Conservation & Natural Resources
Joe Lombardo, *Governor*
James A. Settelmeyer, *Director*
Jennifer L. Carr, *Administrator*

January 21, 2025

Las Vegas Valley Water District
Zane Marshall, Director – Water Resources
100 City Parkway Suite 700
Las Vegas, NV 89106

RE: NDEP Endorsement of the "Source Water Protection Plan for the Searchlight Public Water System, Searchlight, Nevada"

Dear Mr. Marshall,

The Nevada Division of Environmental Protection (NDEP) is pleased to endorse and approve the "Source Water Protection Plan for the Searchlight Public Water System, Searchlight, Nevada" Plan adopted by the Searchlight Town Advisory Board on December 11, 2024. This new Plan was created through the collaboration between the Las Vegas Valley Water District (LVVWD) Water Resources staff, NDEP staff, local officials and additional stakeholders over the past year.

The Plan meets established criteria for the State of Nevada's Integrated Source Water Protection Program (ISWPP) and endorsement of a Community Source Water Protection Plan. The local planning team took considerable time to develop and adopt a Plan that meets their community's source water priorities. The approval of this Plan offers participants the opportunity to request technical and financial assistance through NDEP's ISWPP.

NDEP applauds the community's work in protecting drinking water sources and would like to recognize all the team participants and partnering organizations (copied) who gave their time to ensure the plans success. Special thanks to the Las Vegas Valley Water District Water resources staff for pursuing an update to the Searchlight Wellhead Protection Plan. These talented team members were instrumental in the development of a realistic and community specific planning approach. It was our sincere pleasure to work with each of them and NDEP looks forward to continued collaboration to implement the Plan.

For further assistance, please email the Bureau of Safe Drinking Water, Source Water Protection Program, ndepsourcewater@ndep.nv.gov, or call us at 775-687- 9521.

Sincerely,

Ethan Mason
NDEP ISWPP Coordinator

901 S. Stewart Street, Suite 4001 • Carson City, Nevada 89701 • p: 775.687.4670 • f: 775.687.5856 • ndep.nv.gov

CC:

Las Vegas Valley Water District, Water Resources, Hydrology Supervisor, James Prieur
Las Vegas Valley Water District, Water Resources, Special Projects Manager, Jeffrey Johnson
Las Vegas Valley Water District, Water Resources, Hydrologist, Jack Childress
Nevada Rural Water Association, USDA Source Water Protection Specialist
NDEP Bureau of Safe Drinking Water, ISWPP Coordinator,
NDEP Bureau of Safe Drinking Water, BSDW Engineering Branch Supervisor
NDEP Bureau of Safe Drinking Water, BSDW Bureau Chief
Resource Concepts Inc., RCI ISWPP Contractor
Searchlight Town Advisory Board, Chairman
District EPA Region 9 SWP Coordinator

Appendix C*

Capture Zone and
Potential Contaminant Source Inventory Report

CSWPP for the Public Water Systems in the
Piute Valley, Clark County, Nevada, Planning Area 8

*Contains Sensitive Information**

Contact your local public water system for review.

Appendix D

Community Source Water Protection Plan
Factsheets for Piute Valley, Nevada

CSWPP for the Public Water Systems in the
Piute Valley, Clark County, Nevada, Planning Area 8

Community Source Water Protection Plan Factsheet for Public Water Systems in Piute Valley, Clark County, Nevada

Source water refers to surface or groundwater before it is supplied to communities as drinking water. In Nevada's southern Piute Valley, groundwater is source water. Two community public water systems provide drinking water to Cal-Nev-Ari and Palm Gardens, while one transient non-community water system supplies the Nevada Department Of Transportation (NDOT) Searchlight Welcome Center.

In cooperation with Nevada's Integrated Source Water Protection Program (ISWPP), a Community Source Water Protection Plan (CSWP Plan) was developed to safeguard drinking water quality in Piute Valley. The CSWP Plan was created through a coordinated effort by public water system representatives, local partners, and stakeholders to protect drinking water sources from activities which may adversely affect water quality. The purpose of the CSWP Plan is to ensure the long-term sustainability of drinking water supplies in Piute Valley.

The public water systems and drinking water sources included in Nevada's southern Piute Valley are:

- Spirit Mountain Utilities in Cal-Nev-Ari, which has two active wells, one inactive well, and one future well location.
- The NDOT Searchlight Welcome Center, which has one active well.
- Palm Gardens Water CO-OP, which has two active wells.

All groundwater quality from these systems complies with the Safe Drinking Water Act regulations.

Key elements of the CSWP Plan include:

- Forming a local planning team consisting of public water system representatives from Spirit Mountain Utilities and NDOT, including Utility Services, Inc. and Universal Green Technology, Clark County Water Quality, and the Rural Water Association.
- Delineating non-regulatory source water protection areas around drinking water sources, where community collaboration to protect drinking water quality can be prioritized.
- Identifying, mapping, and compiling a potential contaminant source inventory of local activities that could have the potential to impair drinking water sources.
- Establishing management strategies which support proactive, community driven actions to implement source water protection and reduce the potential for future contamination of drinking water in Piute Valley.
- Developing a Public Education Plan to engage public water system representatives, County and State agencies, and residents in learning about source water protection, sharing knowledge, and protecting water quality at the local level.

Source Water Protection Areas

Source Water Protection Areas (SWPAs) are a tool for communities to strategically safeguard their sources of drinking water. A combination of water system characteristics, local hydrogeology, potential contaminant sources, and land use were key factors for SWPAs in the southern Piute Valley.

The SWPAs for Spirit Mountain Utilities include four 1,000-ft fixed radii (SMU Zone 1) and one 10-Year time of travel capture zone (SMU Zone 2) surrounding the current and potential future wells. Zone 1 includes existing and proposed activities where prompt spill response, proper disposal of household waste and hazardous materials, as well as infrastructure maintenance and improvements take priority for protecting water quality, and Zone 2 considers long-term planning for the broader community of Cal-Nev-Ari.

Parcel boundaries were delineated as SWPAs for the NDOT Searchlight Welcome Center (SWC Zone 1) and Palm Gardens (PG Zone 2) to integrate land use planning with source water protection efforts and prioritize spill response and onsite sewage disposal system maintenance near drinking water sources.

Potential Contaminant Sources

Potential sources of contamination are current and prospective human activities which could release contaminants into drinking water supplies. The potential contaminant source (PCS) inventory was compiled using existing documents from the Bureau of Safe Drinking Water, electronic databases to identify activities of concern, land use, and local water system concerns. Common PCSs within southern Piute Valley SWPAs include gas stations and underground storage tanks, sewage disposal systems and leach fields, and transportation corridors.

Management Strategies and Action Plans

Management Strategy development led to an outline of locally driven, voluntary actions that each community may choose to implement to reduce future risks to groundwater quality in southern Piute Valley. Examples include:

Management Strategy: Planning and Review

Action: Support source water protection communication between Cal-Nev-Ari and local agencies in Clark County regarding planning and development. For example, consider a presentation of source water protection areas to the Clark County Planning Commission.

Action: Consider coordinating with the Clark County Office of Emergency Management on disaster response in rural areas.

Management Strategy: Infrastructure and Wellhead Security

Action: Explore opportunities for improving security around wellheads, for example: cameras, signage, and fencing.

Management Strategy: Secure Locations for Future Water Sources

Action: Consider land use and zoning when reviewing proposed future well locations.

Community Engagement

The Piute Valley Source Water Protection Partners recognize that success relies on the community's willingness to support source water protection. Education and outreach partners include Clark County Water Quality, the University of Nevada, Las Vegas, the Rural Water Association, and the Nevada ISWPP. The purpose of the Education Plan is to promote area-wide engagement around groundwater quality protection, septic care and maintenance, proper disposal of household hazardous waste, and source water protection coordination with county-wide partners. Examples of Key audiences, Topics, and Application Methods include:

Key Audience	Importance to Source Water Protection	Application Methods and Tactics
Homeowners with individual sewage disposal systems	Distribute information about septic system operation and maintenance, and information on how unmaintained systems can become a conduit for contaminating groundwater.	Fact Sheets, Brochures, Handouts, Flyers, Water Bill Inserts, Presentations, and On-Site Education
Residents / Small Business Owners Connected to a Public Water System	Could benefit from increased knowledge of topics like public water system operations, emerging contaminants, and proper disposal methods for household hazardous waste and prescription drugs, backflow devices and leak prevention, and used oil collection and disposal.	Fact Sheets, Brochures, Handouts, Flyers, Water Bill Inserts, Presentations, On-Site Education, and Source Water Site Signage
Community Leaders	Public water system boards, Board of County Commissioners, and the County Planning Commission, make decisions that have the potential to impact source water quality. Increasing fundamental knowledge about Source Water Protection Areas helps to inform the decision-making process to cultivate ongoing support.	Presentations and Public Water System Annual Consumer Confidence Report

For More Information about Your Local Plan or Nevada's ISWPP Contact:

Neal Do: nealdomd@gmail.com
NDEP: **775-687-9521** ndepsourcewater@ndep.nv.gov

LVVWD Searchlight Public Water System, Community Source Water Protection Plan

The Las Vegas Valley Water District (LVVWD) operates and maintains the Searchlight Public Water System (Searchlight System), which is supplied by three production wells. The quality of groundwater served by the Searchlight System complies with all Safe Drinking Water Act regulations, and annual Water Quality Reports are available at LVVWD.com.

To continue to safeguard the Searchlight System water supply, a Community Source Water Protection Plan (CSWPP) was developed in cooperation with local and state agencies and is available at LVVWD.com. It is consistent with the Nevada Division of Environmental Protection (NDEP), Bureau of Safe Drinking Water and U.S. Environmental Protection Agency measures outlined for a CSWPP and updates and replaces the LVVWD 2004 Well Head Protection Plan for the Searchlight System.

CSWPPs are established to protect water sources used by public water systems from contaminants that may have adverse effects on the health of persons consuming the water. The purpose of the Searchlight System CSWPP is to inform the community of their drinking water sources and provide guidance in protecting their drinking water supply by making informed land-use planning decisions in concert with LVVWD and Clark County.

The four key elements of the Searchlight CSWPP are:

1. Assembling a local planning team consisting of LVVWD, the Searchlight Town Advisory Board (TAB), NDEP, Clark County, Bureau of Land Management, Clark County Water Reclamation District, and Southern Nevada Health District.

2. Delineating protection areas for the three production wells, S1, S2 and S3 that supply water to the LVVWD Searchlight Public Water System, as well as a potential future production well S4A (Figure 1).

3. Identifying and cataloging contaminant sources within the identified protection areas for the water-supply wells and developing management strategies and action plans to meet established local planning goals to avoid groundwater contamination in the Searchlight area.

4. Distributing information regarding the Searchlight System through the LVVWD website, regular updates to the Searchlight TAB, LVVWD bill inserts, and other activities.

Searchlight System Source Water Protection Areas

Source water protection areas (SWPAs) are defined as the land area that contributes water to the drinking water supply where pollution from human activities or natural sources pose the greatest threat. For the Searchlight System, SWPAs were delineated using numerical flow modeling in combination with fixed-radius areas. The SWPAs include two, five and ten-year groundwater capture zones modeled for S1, S2 and S3. An additional fixed-radius circle of 1,500 ft was applied to S1, and 90-degree angle, 4,000-ft fixed-radius areas were applied to S2, S3 and S4A. The fixed areas ensure the SWPA is large enough to account for natural hydrogeologic variations that influence groundwater flow.

LVVWD Searchlight Public Water System, Community Source Water Protection Plan

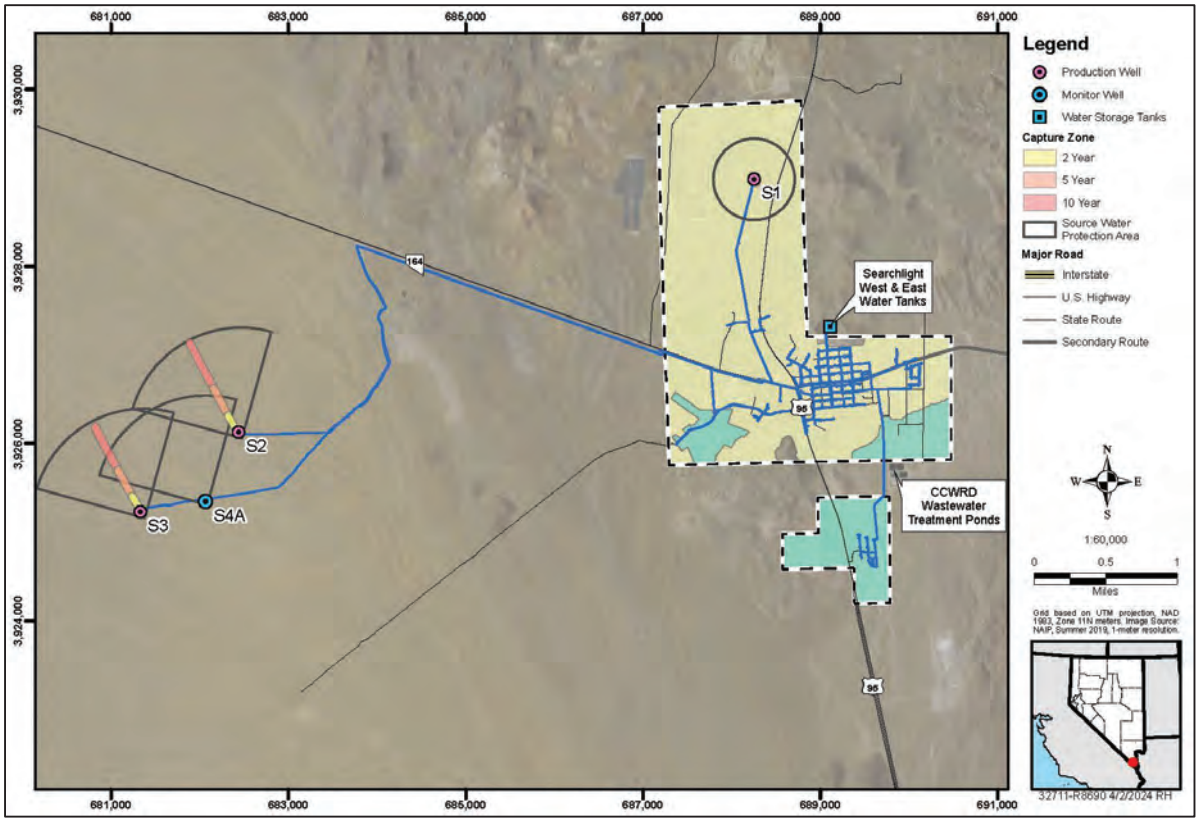

Figure 1. Modeled and Fixed-Radius SWPAs for Wells S1, S2, S3 and S4A

Potential Contaminants to Groundwater

Man-made contaminants have the potential to reach the groundwater system from: 1) activities at land surface, such as releases or spills from stored or discarded industrial waste; 2) sources below the land surface but above the water table, such as septic systems or leaking underground petroleum storage systems; and 3) structures beneath the water table, such as contamination introduced into a well. Potential sources for contamination within and adjacent to the Searchlight System were identified using NDEP online spatial data, site visits to the LVVWD production wells, and historical data from the 2004 Well Head Protection Plan (WHPP).

None of the potential contamination sources identified using the NDEP spatial database are within the SWPAs for the Searchlight System wells. Site visits to the wells identified abandoned mill tailings, a mill site, and abandoned mine shafts within the SWPA of S1. These features adjacent to S1 have the potential to act as conduits for contaminants to reach the groundwater system and management strategies were developed to address them.

LVVWD Searchlight Public Water System, Community Source Water Protection Plan

Management Strategies and Emergency Response

Several coordinated, multi-agency actions are outlined in the Searchlight CSWPP to help maintain the integrity of the Searchlight System based on the SWPAs and avoid potential contamination of groundwater. In addition, LVVWD maintains an Emergency Response Plan that provides guidance for LVVWD staff to perform an efficient and effective response/recovery to an event that could or has caused a significant impact on the delivery of potable water to the town of Searchlight. The LVVWD Emergency Response Plan is maintained by the LVVWD Director of Operations and the LVVWD Director of Environmental Health and Safety - Corporate Security.

LVVWD also maintains a Crisis Communications Plan that corresponds with the Emergency Response Plan to ensure effective communications to stakeholders, agencies, first responders and the public during emergency situations. The Crisis Communications Plan outlines the protocols and communication methods for a variety of emergency response scenarios, including a water quality or contamination issue.

In the event of contamination of the primary water supply from either wells S2 or S3, the well will be isolated from the distribution system and the remaining wells activated, immediately, to maintain water supply. Notification to affected customers, stakeholders and the public will be conducted in accordance with the Crisis Communication Plan, utilizing a mix of broadcast and print media, automated outbound phone calls, emails, and digital and social media. Additional notification may be provided through direct mail and public postings as required to ensure compliance with public notification rules established by the Environmental Protection Agency and NDEP.

Contact Information - Searchlight Water System

- **LVVWD Customer Care**
  702-870-4194

- **NDEP**
  775-687-9521 e-mail: ndepsourcewater@ndep.nv.gov

Appendix E

Public Education Plan

CSWPP for the Public Water Systems in the
Piute Valley, Clark County, Nevada, Planning Area 8

Table of Contents

Tables

Attachments

Acronyms & Abbreviations

Acronym/ Abbreviation	Definition
AWWA	American Water Works Association
BSDW	Bureau of Safe Drinking Water
CSWP Plan	Community Source Water Protection Plan
GIS	Geographic Information System
ISWPP	Integrated Source Water Protection Program
NDEP	Nevada Division of Environmental Protection
NRWA	National Rural Water Association
PWS	public water system
PWSSP	Public Water System Supervision Program
QR	quick response
SWPA	source water protection area
TBD	to be determined
Team	Local Planning Team

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1.0 Introduction

The Piute Valley Source Water Protection partners recognize that the success of the Community Source Water Protection Plan (CSWP Plan) relies on the community's willingness to support source water protection. Education and outreach are necessary for increasing public awareness and support for State, County, and community efforts taking place to safeguard the sources of public drinking water. Increasing the public's understanding can help residents make more informed choices about what they can do to protect their drinking water sources. This Public Education Plan (Education Plan) was developed to support Goal 1 of this CSWP Plan.

> ***Goal 1:*** *Develop forward thinking, proactive approaches to protect source water quality, with ongoing community training and education.*

The Action Plan (Section 4.0 of this CSWP Plan) details various education and outreach activities aimed at achieving Goal 1, specifically benefiting Piute Valley residents. The Education Plan offers resources for community-wide education and outreach, emphasizing the importance of effective leadership in organizing events that inspire community efforts to protect drinking water sources. Table 1 lists contact information for the education leaders dedicated to fostering community and county-wide support for source water protection.

Table 1. Piute Valley Education and Outreach Contacts

Organizations	Phone Number	Email Address
Clark County Resources		
Clark County Water Quality	(702) 668-8674	Waterquality@cleanwaterteam.com
Educational Resources		
Rural Water Association	(725) 296-2870	christopher.berkey@nrwa.org
University of Nevada, Las Vegas	(702) 774-1449	eakalak.khan@unlv.edu
Nevada ISWPP Technical Resources		
Nevada Division of Environmental Protection – Bureau of Safe Drinking Water	(775) 687-9311	e.mason@ndep.nv.gov
Integrated Source Water Protection Program Technical Assistance	(775) 883-1600	jill@rci-nv.com alison@rci-nv.com erin@rci-nv.com

2.0 Key Audience and Educational Focus

A key audience refers to a specific group of people defined by a combination of demographic, behavioral, geographic, and firmographic segmentation. Throughout CSWP Plan development, the public water system representatives and County stakeholders identified several key audiences for specific public education and outreach messaging. They understood that the success of CSWP Plan implementation correlates with the willingness of the community to participate. Key audiences and their participation and roles in source water protection are identified in Table 2.

Table 2. Key Audiences and their Roles in Source Water Protection

Community Goals for Source Water Protection Education	
Key Audience	**Importance to Source Water Protection in the Piute Valley**
Homeowners with individual sewage disposal systems	Local community members who have individual sewage disposal systems would benefit from information about septic system operation and maintenance, and understanding how unmaintained systems can become a conduit for contaminating groundwater.
Residents / Small Business Owners Connected to a Public Water System	Local residents and small business owners are integral to developing community support and participation around source water protection issues. This target audience is most likely to benefit from increased knowledge of topics like public water system operations, emerging contaminants, and proper disposal methods for household hazardous waste and prescription drugs, backflow devices and leak prevention, and used oil collection and disposal.
Community Leaders	Community leaders such as public water system boards, the County Board of Commissioners, and the County Planning Commission make decisions and recommendations that have the potential to impact source water quality. Increasing fundamental knowledge about Source Water Protection Areas helps to inform the decision-making process to cultivate ongoing support.

3.0 Educational Tools for Presentations

Educational tools offer a fun learning experience that promotes learner engagement, increases participation, and fosters communication. Table 3 provides a variety of educational tools to enhance community understanding of drinking water sources and promote support for source water protection. These resources can be effectively utilized alongside local educational programs, community events, and at public meetings. These and other tools are often accessible through the technical assistance contacts shown in Table 1.

Table 3. Educational Tools and Descriptions

Educational Tools (*Key Audience*)	Description
Physical Watershed Model *Suited for kids or adults.*	The watershed model is a hands-on activity showing how contaminants from industrial and residential activities can be washed into drainages. • Tool to discuss types of contaminants and means for managing these, such as proper waste disposal, septic care and maintenance, or other management strategies (i.e. source water protection areas).
Physical Groundwater Model/Awesome Aquifer Kits *Suited for kids or adults.*	Groundwater models demonstrate how contaminants can infiltrate into the ground, eventually polluting groundwater resources. • Opens discussions about groundwater terminology, physical makeup of an aquifer, role of groundwater in the hydrologic cycle, and groundwater contamination.
Source Water Protection Area Maps *Useful for homeowners, small business owners, and community leaders.*	Source Water Protection Area maps represent important management area boundaries around public drinking water sources. Maps clearly show an "impact area," which are based on groundwater properties or follow topography or parcel boundaries. • These maps can be used at public events, or virtually (online), to discuss source water protection topics. **Source Water Protection Area maps are provided in Appendix A of this CSWP Plan.**
Website / Online Resources *Resources available for community leaders or resource managers.*	American Water Works Association: • https://www.awwa.org/Resources-Tools/Resource-Topics/Source-Water-Protection Groundwater Protection Counsel: • https://www.gwpc.org/topics/source-water-protection/ Clark County Water Quality: • https://www.clarkcountynv.gov/government/departments/water_quality/index.php
Informational Pamphlets *Best for homeowners or small business owners.*	Informational pamphlets discussing a variety of source water protection topics (e.g. emerging contaminants, household hazardous waste, proper septic maintenance, private well ownership, etc.), are a great way to provide information to the community. • Pamphlets at county offices, or other public offices or events, or by public water systems for relevant topics. **Informational pamphlets are provided in Attachment D of this Education Plan.**

4.0 Education Outreach Tactics and Tips

Source water protection education leaders serve as ambassadors for this CSWP Plan within their respective communities or organizations. Outreach is fundamental for engaging the interest of a key audience. Specific tactics, discussed in Table 4, can help enhance community understanding of drinking water sources and guide them on how they can assist their water purveyors in protecting those resources.

Having a sense of the target audience's personal perspective (i.e. are they a business owner, resident, or community leader) can be helpful when trying to kick-start open communication. When implementing various tactics, consider incorporating the following steps:

1) **Plan** the desired message, be consistent, and include a call to action.
    a. *"To learn more about septic system maintenance, visit…"*
    b. *"To learn more about how to dispose of household hazardous waste check out…"*
2) **Know** how an audience should utilize the information.
    c. *Keep it simple and to the point.*
    d. *Use words and terms the audience will know and provide context for technical/scientific concepts.*
3) **Recognize** channels through which the information will be disseminated.
    e. *What does the audience need to know?*
    f. *What are your resources and budget?*
    g. *How much time do you have?*
4) **Identify** how each tactic will be evaluated for effectiveness.
    h. *How will you follow up to determine effectiveness?*

Table 4. Outreach Tactics and Content

Tactics	Application Methods and Content
Fact Sheets, Brochures, Handouts, Flyers, Water Bill Inserts	Paper materials can be distributed in the mail, community centers, builder associations, rotary club meetings, economic development authorities, etc.
Presentations and On-Site Education	Presentations about various source water protection topics, formal or informal, can be given at public meetings, to local water boards, at industrial development meetings, etc.
Employee Trainings	Training sessions can cover a wide range of topics that promote source water protection efforts such as safe materials handling, emergency spill response, and source water protection awareness.
Source Water Site Signage	Signage can be helpful in circumstances where regular day-to-day activities have the potential to impact a drinking water source. Signage can raise awareness and encourage appropriate behavior.
Public Water System Annual Consumer Confidence Report	Incorporate source water protection information into the annual consumer confidence report.

5.0 Source Water Protection Messages

An engaged audience is more likely to understand educational material and retain information. In many circumstances, it is best to begin your conversation about source water protection at a basic level and build up from there. People develop an understanding and connection to a topic when they are provided with appropriate context. The following messages were selected to include in this Education Plan, as they may be more relevant to the communities in the Piute Valley:

Where does our drinking water in the Piute Valley come from?

All residential properties in Piute Valley rely on groundwater as their source of drinking water. Groundwater is extracted from wells drilled into aquifers, comprised of rock, sand, and gravel, located deep under the Earth's surface.

Why is it important for us to protect drinking water at the source?

Both surface and groundwater can be polluted by various human activities and natural occurrences. Once a source of drinking water becomes polluted, it becomes extremely costly and difficult to clean. We have the power to support our water system operators as they implement strategic safeguards to avoid or control contamination threats and incidents that may pollute our drinking water.

What can I do to protect my drinking water?

Protecting our drinking water from contamination is a huge challenge. Safeguarding our drinking water sources begins with awareness and education. We can take everything we've learned home with us, educate our friends and families, and change our behaviors to minimize our impact on our water resources. The adage is true: *"An ounce of prevention is worth a pound of cure!" – Benjamin Franklin.*

What contaminates the water we drink?

Numerous pollutants can contaminate surface and groundwater, including household products like cleaning agents, waste oil, pet waste, fertilizers, and pesticides that are either disposed of or used improperly. Emerging contaminants, such as industrial pollutants and human by-products, have been entering waterways for generations, and recent studies show detectable amounts in some drinking water sources. Therefore we, as the local residents and industry and business leaders, play a crucial role in protecting our drinking water.

6.0 Additional Education and Outreach Tools

Many tools and educational resources exist to support outreach efforts. Table 5 lists a variety of resource categories, organizations, and supplementary materials provided as Education Plan attachments. These materials are simply a starting point for a successful outreach event or campaign; should additional assistance be needed, please contact the organizations provided in Table 1.

Table 5. Additional Education Plan Tools and Tactics

Additional Educational Tools	Description
National Rural Water Association (NRWA)	The NRWA is a *nonprofit organization providing water and wastewater technical assistance and watershed protection coordination programs statewide*. NRWA has been, and will continue to be, a partner and asset during local and regional source water protection and conservation outreach and education efforts.
Boards and Local Leader Education and Engagement	Engage board members, town councils, and other local government leaders about the importance of source water protection and conservation. Invite partners to talk about their source water protection achievements at home and encourage figureheads in the community to participate and lead by example.
Informational Meetings/Presentations	Informational meetings/presentations about source water protection and conservation to businesses and the general population can facilitate positive changes in the way people think about their drinking water sources (short-term impacts), which can lead to positive *behavioral* changes that protect drinking water sources (long-term impacts).
Educational Flyers (Attachment C)	Educational flyers, such as proper disposal of household hazardous waste and pharmaceuticals, and safe septic practices, promote source water protection and give the community an opportunity to participate in protecting drinking water quality.
Participate in American Water Works Association (AWWA) Source Water Protection Week (Examples provided in Attachment C).	Supporting national water events to engage the community, facilitate community collaboration, and expand how the community thinks about drinking water, to cultivate short- and long-term impacts.
Website links (Attachment D)	Website links are an important tool for promoting this CSWP Plan and for creating mutually beneficial relationships with local and regional organizations who support source water protection and conservation.

Additional Educational Tools	Description
Social Media Promotion	Social media posts are an opportunity to share source water protection and conservation accomplishments. It can also serve as a means to invite the community to share their ideas and personal achievements, creating an environment where the community comes together to protect their drinking water.
Source Water Protection Booth at Community Events	A sponsored booth at community events can promote source water protection education and expand communication between water system operators and their community. The watershed and groundwater models can provide an interactive element related to best management practices. Informational flyers can also be offered and/or distributed.
Testimonials	Encourage partners, members, residents, and businesses who have changed their practices to share how they reduced their impact on source water, why they care about source water, and what the results mean for source water protection and conservation. Can be in many forms, such as posters, social media posts, pamphlets at events, and in presentations.

7.0 Measuring Education and Outreach Success

Measuring the success of an education and outreach program or event is important for assessing effectiveness, impact of key messages, and for identifying areas for improvement. Evaluation also can provide accountability to stakeholders and the community.

To assess effectiveness, it is important to determine the most suitable metric for evaluating each tactic, which can either be quantitative or qualitative measurements. It is essential to consider the desired outcomes of the outreach activity, the key audience(s), and the resources available.

Quantitative Measurements – Refers to things that are measurable or countable, such as the amount of information provided. Examples of quantitatively measuring effectiveness include:

- The quantity of presentations delivered and people in attendance,
- The quantity of distributed materials, and
- The quantity of inquiries (e.g. phone calls, emails, social media posts, contest participation, testimonials, booth visits, etc.).

Qualitative Measurements – Relates to the quality or value of the information provided. Examples of qualitative evaluation for public education and outreach include:

- Presentation, email, and website surveys,
- Paying attention to audience participation and engagement,
- Administering a short quiz at the end of event presentations,
- Asking questions about presentation content at the beginning and the end to see if attitudes or knowledge of material has changed, and
- Asking participants what they can do to protect their source water at the end of presentations to measure potential community participation.

8.0 References

America Water Works Association. Source Water Protection. https://www.awwa.org/Resources-Tools/Resource-Topics/Source-Water-Protection

Awesome Aquifer. Groundwater Foundation. https://groundwater.org/awesome-aquifer/

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Attachment A

Presentation Content Example

Attachment A

Presentation Content Example

Presentations should last roughly 45 minutes. Introduce yourself and engage your audience by asking a few questions:

Have you ever wondered where the water in your tap comes from?

Depending on the answers, the discussion can evolve. A discussion regarding the hydrologic cycle, groundwater aquifers, and how water is pumped from the aquifer and treated before it gets to the tap is appropriate for the residents of the Piute Valley.

What can we do to protect our drinking water sources?

People in your audience may not know what types of everyday activities have the potential to contaminate their drinking water sources. The presenter may have to facilitate the discussion with statements, such as:

- *We rely on groundwater* – it's the water we drink and the water that grows our food!
- Man-made products, such as gasoline, oil, and road salt can move through the soil and end up in our groundwater.

Demonstration of the Watershed Model

Invite the students to come close to see the watershed model and ask if they know:

- ✓ *What is a watershed?* Discuss what is displayed on the watershed model, such as the area of land and the different water bodies.
- ✓ *What is a contaminant?* Discuss various forms such as oil and grease, factory chemicals, lawn fertilizer, etc. Hand the "contaminants" to the audience and let them sprinkle it around. Engage them and ask them what kind of contaminants are on the farm, on the lawns, on the road, etc.
- ✓ *How much rainfall does the community receive each year?* Discuss rainfall in the Piute Valley, and then rain on the watershed using a spray bottle. This is also a good place to discuss overwatering. Demonstrate what happens if someone has a leaky pipe, and what happens to fertilizers on landscape turf. Discuss the water flowing down the hills and the streets, and then discuss infiltration. Discuss replacements for landscape turf, which in turn conserves the drinking water. Pull the plug once the water settles in the "lake" and move to the groundwater model.
- ✓ Discuss the importance of individual actions to protect and conserve drinking water sources.

Demonstration of the Groundwater Model

- ✓ Put the green and the red coloring into the lake and pond and pump different wells.
- ✓ Discuss aquifers, contaminants, pumping, water movement, etc.
- ✓ Talk about infiltration and how the pollution in the watershed model can end up in the groundwater.
- ✓ Revisit the question: ***What can we do to protect our drinking water sources?***
- ✓ Invite the audience to brainstorm about how to protect water sources community wide.

Attachment B

Terms Defined

Attachment B

Terms Defined

Aquifer: a naturally occurring, underground area of water-soaked sand or gravel.

Best Management Practices: barriers, methods, measures, or practices designed to prevent or reduce water pollution.

Bureau of Safe Drinking Water (BSDW): the mission of BSDW is *to protect public health and the environment by providing oversight, guidance, and support, while fostering collaboration with safe drinking water partners*. Through the NDEP, the Source Water Protection Program is administered through the BSDW to help communities protect their drinking water.

Contamination: introduction of an undesirable chemical or biological substance not normally present in source water.

Emerging Contaminant: synthetic or naturally occurring chemicals or microorganisms that are not commonly monitored but have the potential to enter the environment and cause known or suspected adverse ecological and/or human health effects.

Ground Water: water found beneath the earth's surface. The water is pumped to the surface for drinking water.

Hydrologic Cycle: the sum of all processes in which water circulates from the land and ocean surface to the atmosphere and back in the form of precipitation.

Integrated Source Water Protection Program (ISWPP): ISWPP is a comprehensive, voluntary approach designed to help communities develop and implement a plan that protects their drinking water supplies. ISWPP is a program created and monitored through BWPC.

Nevada Division of Environmental Protection (NDEP): NDEP will protect the State's natural resources through an effective, efficient program of permitting, enforcement of regulations, monitoring the environment, pollution prevention and remediation based on state and federal laws. NDEP encourages, motivates, and supports communities' local source water protection activities; manages, shares, and integrates source water protection information; develops federal, state, and local source water protection partnerships; and integrates and implements source water protection at the state level.

Surface Water: consists of springs, streams, and rivers that become our drinking water.

Source Water: consists of bodies of water such as lakes, springs, streams, rivers, and ground water/aquifers that become our water supply.

Watershed: the area of land that drains to a common water body like a stream, river, or lake.

Water Conservation: includes all policies, strategies, and activities which support careful use and preservation of the water supply.

Attachment C

Online Resources

Attachment C

Online Resources

For more information on your drinking water, visit local and regional websites (links may change) which support source water protection and conservation education and the State of Nevada Integrated Source Water Protection Program. Go to:

Clark County

Clark County Water Quality – Pain in the Drain: https://www.cleanwaterteam.com/public-outreach/pain-in-the-drain

Clark County Stormwater Pollution: https://stormwatervegas.com/

https://www.clarkcountynv.gov/government/departments/water_quality/education_tools.php

Clark County General Education Flyers: https://www.clarkcountynv.gov/government/departments/water_quality/documents___educational_materials.php#outer-2806

Stormwater Quality Management Committee: https://www.lvstormwater.com/

Source Water Protection

Association of State Drinking Water Administrators – Source Water Protection: https://www.asdwa.org/source-water/

Nevada Integrated Source Water Protection Program: https://ndep.nv.gov/water/source-water-protection/integrated-source-water-protection

USEPA – Drinking Water Treatability Database: https://tdb.epa.gov/tdb/home/

USEPA – Spill Prevention, Control, and Countermeasure Guidance: https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations/oil-spills-prevention-and-preparedness-guidance

USEPA – Industrial Stormwater Fact Sheet Series: https://www.epa.gov/npdes/industrial-stormwater-fact-sheet-series

Emerging Contaminants

Interstate Technology Regulatory Council – Emerging Contaminants: https://cec-1.itrcweb.org/

Interstate Technology Regulatory Council – Per- and Polyfluoroalkyl Substances: https://pfas-1.itrcweb.org/

USEPA – Safer Choice Standard: https://www.epa.gov/saferchoice/products

USGS – Emerging Contaminants: https://www.usgs.gov/mission-areas/water-resources/science/emerging-contaminants

Hazardous Waste

National Groundwater Association – Groundwater Fundamentals: https://www.ngwa.org/what-is-groundwater/About-groundwater

USEPA – Hazardous Waste Generators: https://www.epa.gov/hwgenerators

Private Well Maintenance

Rural Community Assistance Corporation – Private Well Class: https://privatewellclass.org/

USEPA – Private Drinking Water Wells: https://www.epa.gov/privatewells

Septic System Maintenance

USEPA – SepticSmart Education Materials: https://www.epa.gov/septic/septicsmart-education-materials

Composting

USEPA – Community Composting: https://www.epa.gov/sustainable-management-food/community-composting

Attachment D

Educational Flyers

FLUSHABLE? **THINK TWICE**

DISPOSE OF THESE ITEMS IN THE TRASH, **NOT THE TOILET!**

Many household cleaning products labeled as “flushable” should not be flushed down the toilet. The only things you should flush down the toilet are the

THREE P’S: PEE, POO and **TOILET PAPER!**

Disposable Wipes

Cleaning Wipes

Personal Wipes

FLUSH IT OR CAN IT?

NOT SURE whether something belongs in the drain or toilet? visit PAININTHEDRAIN.COM please call us at (702) 668-8065 or email us at publicinfo@cleanwaterteam.com

Pain in the Drain

Thank you for being a partner in clean water!

PAININTHEDRAIN.COM

DON'T RUSH Rx TO FLUSH

TAKE YOUR MEDS TO METRO

DO YOU HAVE **EXPIRED** OR **UNUSED MEDICATIONS?**

STEP 1 ***Place any unwanted medicine, removed from original containers, in a plastic bag. No liquids, aerosols or needles.***

STEP 2 ***Bring the bag to a police substation listed on the back.***

STEP 3 ***Drop the contents from the bag in the disposal box.***

By safely disposing of your medicine, you are helping to prevent drug abuse and protect the environment!

MEDICINE DISPOSAL DROP-OFF BOXES ARE LOCATED AT AREA POLICE STATIONS

SEE BACK FOR A COMPLETE LIST OF LOCATIONS!

for more information, visit www.paininthedrain.com

MEDICINE DISPOSAL DROP-OFF LOCATIONS

LAS VEGAS

LVMPD Headquarters
400 S. Martin Luther King, Bldg. C
Las Vegas, NV 89106
Hours of Operation: 8:00am-5:00pm
Monday-Friday

LVMPD Bolden Area Command
1851 Stella Lake Street
Las Vegas, NV 89106
Hours of Operation: 9:00am-5:00pm
Monday-Friday

LVMPD Convention Center Area Command
750 Sierra Vista
Las Vegas, NV 89169
Hours of Operation: 9:00am-5:00pm
Monday-Friday

LVMPD Downtown Area Command
621 North 9th Street
Las Vegas, NV 89101
Hours of Operation: 9:00-5:00pm
Monday-Friday

LVMPD Enterprise Area Command
6975 West Windmill
Las Vegas, NV 89113
Hours of Operation: 9:00-5:00pm
Monday-Friday

LVMPD Northeast Area Command
3750 Cecile
Las Vegas, NV 89115
Hours of Operation: 9:00am-5:00pm
Monday-Friday

LVMPD Northwest Area Command
9850 W. Cheyenne
Las Vegas, NV 89129
Hours of Operation: 9:00am-5:00pm
Monday-Friday

LVMPD South Central Area Command
4860 Las Vegas Boulevard South
Las Vegas, NV 89119
Hours of Operation: 8:00am-5:00pm
Monday-Friday

LVMPD Southeast Area Command
3675 East Harmon Avenue
Las Vegas, NV 89121
Hours of Operation: 8:00am-5:00pm
Monday-Friday

LVMPD Spring Valley Area Command
8445 Eldora Avenue
Las Vegas, NV 89117
Hours of Operation: 8:00 am-5:00pm
Monday-Friday

NORTH LAS VEGAS

North Las Vegas Police Headquarters
1301 E. Lake Mead
North Las Vegas, NV 89030
Hours of Operation: 8:00am-5:45pm

North Las Vegas Police Northeast Area Command
3755 W. Washburn
North Las Vegas, NV 89031
Hours of Operation: 8:00am-5:00pm
Monday-Thursday Only

BOULDER CITY

Boulder City Police Department
1005 Arizona Street
Boulder City, NV 89005
Hours of Operation: 24 hours
7 days a week

MESQUITE

Mesquite Police Department
695 Mayan Circle
Mesquite, NV 89027
Hours of Operation: 7:00am-5:00pm
(Friday 3:00pm)
Monday-Friday

Mesquite Municipal Court
500 Hillside Drive
Mesquite, NV 89027
Hours of Operation: 7:00am-5:00pm
Monday-Friday

LAUGHLIN

LVMPD Laughlin Substation
101 Laughlin Civic Way
Laughlin, NV 89029
Hours of Operation: 8:00am-4:30pm
Monday-Friday

LVMPD Overton Substation
320 N. Moapa Valley Blvd.
Overton, NV 89040
Hours of Operation: 7:00am-4:00pm
Monday-Thursday Only

for more information, visit www.paininthedrain.com

Doing Your Part:
What To Keep Out Of The Drains

"The Clean Water Team"

The only things you should flush down the toilet are the three P's: Pee, Poo and toilet Paper. While that may make you giggle, sewer overflows in your home are no laughing matter. Certain items can harm your pipes and the wastewater collection system and damage expensive equipment, causing backups and overflows. Some items can't be removed from the wastewater and return to our drinking water source. You can be a valuable member of the Clean Water Team by keeping these things out of the sewer.

Disposable Diapers


Fat, Oil or Grease


Medicines

Flammable Liquids


Grain, Rice or Seeds

Disposable Wipes


Grit

PLEASE DO NOT FLUSH OR POUR THESE ITEMS INTO DRAINS!


Kleenex

Feminine Hygiene Products

Cigarette Butts


Bandages

Coffee Grounds

Automotive Fluids

If you have any question about whether or not something can be put down the drain or toilet, please call us at (702) 668-8065 or email us at publicinfo@cleanwaterteam.com.

Thank you for being a partner in clean water!

Don't Be a Pain in the Drain

www.paininthedrain.com

60 Years of Clean Water

Clark County Water Reclamation DISTRICT

www.cleanwaterteam.com

Household Hazardous Waste Recycling Guide

Help protect our valley's water supply

Visit our website:
ClarkCountyNV.gov/water-quality
Contact our Water Quality staff at 702-668-8674 or e-mail
waterquality@cleanwaterteam.com

CLARK COUNTY NEVADA

only rain in the storm drain

What is Household Hazardous Waste?

And why should I care?

Look around your home and storage areas. If you see used oil, used auto fluids, gasoline, diesel fuel, pesticides, fertilizers, drain and oven cleaners, adhesives, pool chemicals, batteries, paint thinners, solvents, paint, light bulbs, televisions, computers, and prescription/non-prescription drugs, then you are looking at chemicals and substances known as Household Hazardous Waste (HHW).

But, what makes a product hazardous and how can you tell? Most HHW is characterized by at least one of the following attributes:

- The waste is reactive; meaning it can cause explosions
- The waste is corrosive; meaning it can dissolve materials
- The waste is ignitable; meaning it has the potential to catch fire
- The waste is toxic; meaning it can be poisonous to living things

The most straightforward way to determine if a product is hazardous is to read the label. Look for the words "Poison", "Danger", Warning", or "Caution". Products that don't have any of these words on the label are the least hazardous.

Each year tons of HHW ends up in landfills. Disposal in this manner may contribute to the contamination of groundwater. Groundwater is contaminated when rainwater or other liquids seep through the layers of trash in the landfill, picking up contaminants from HHW and turning them into leachate. Most landfills are properly lined so that leachate is contained; however, some are not designed for certain hazardous materials. You may think that washing hazardous wastes down the drain or toilet to the sewer is acceptable, but it is not. These sewers are connected to the sewage treatment plants that process wastes, and HHW can negatively impact the treatment process. Dumping into the storm drains is also not acceptable because they flow untreated to Lake Mead, our valley's main source of drinking water. These drains can be found in roads and parking lots, and are designed to alleviate flooding. Any contamination from landscaping, soil, sidewalks, streets, and parking lots that is washed into a storm drain can cause significant water quality degradation of our water supply.

What can you do to help?

- Recycle or properly dispose of HHW
- Be sure the label lists the ingredients in the product
- Follow product instructions and use the product only as intended
- Only buy the amount of product you need

Recycling is important, but it can be complicated. This resource guide is to assist you in knowing what you can recycle and the locations where recyclable items can be taken within the Las Vegas Valley. The guide in no way endorses or promotes any of the companies listed. They are provided to inform the public of proper disposal and recycling options.

only rain in the storm drain

Household Hazardous Waste Recycling Guide

Help protect our valley's water supply

Automotive Products

Used motor oil and other auto fluids contain toxins.

These fluids should never be disposed of in the trash, on the ground, or in storm drains or sanitary sewers. When you transport fluids for recycling, place them in a clean plastic milk jug or similar container. Never mix products because it makes recycling very difficult.

A & A Midwest
www.aamidwest.com
metal auto parts

Auto Zone
www.autozone.com
car batteries, oil

Firestone Complete Auto Care
www.firestonecompleteautocare.com
car and marine batteries, oil

Jiffy Lube
www.jiffylube.com
oil, transmission fluid

O'Reilly Auto Parts
www.oreillyauto.com
car batteries, oil, oil filters

Republic Services Recycle Center*
Republic Services Transfer Station*
www.republicservices.com
car batteries, oil, antifreeze, gas, diesel fuel, tires

**Must have photo ID, and be either a direct residential customer (bring bill) or an indirect residential customer (live in a rental unit complex that contracts residential service). Check website for locations.*

SA Recycling
www.sarecyclinglasvegas.com
car batteries, metal auto parts

Home and Garden

Republic Services Recycle Center*
Republic Services Transfer Station*
www.republicservices.com
lighter fluid, pesticides, fertilizer, adhesives, drain/oven cleaners, and pool chemicals

**Must have photo ID, and be either a direct residential customer (bring bill) or an indirect residential customer (live in a rental unit complex that contracts residential service). Check website for locations.*

Light Bulbs

A simple household light bulb whether it is an incandescent, LED, or compact fluorescent (CFL) can be difficult to recycle. Some feature filaments and others contain mercury or mercury vapor, which is why they should be handled with care and treated as hazardous waste and not just thrown in the garbage.

Home Depot – All stores are equipped with orange CFL units to collect bulbs near the entrance/exit doors or the Returns desk.

Lowes Home Improvement – All stores have permanent recycling centers located at store entrances for convenience and ease.

Republic Services* – accepts fluorescent bulbs Wednesday-Saturday from 9:00am-1:00pm. Check website (www.republicservices.com) for locations.

**Must have photo ID, and be either a direct residential customer (bring bill) or an indirect residential customer (live in a rental unit complex that contracts residential service). Check website for locations.*

E-waste

The growing demand for consumer electronics equipment and the marketing of new features has caused rapid growth in the generation of electronic waste, or e-waste.

Under the general heading of e-waste are televisions, computers, monitors, printers, cell phones, VCR/DVD players, fax machines and anything with a plug. Every year in Nevada hundreds of thousands of electronic items become obsolete and if not reused or recycled end up in the landfills. **Call to confirm if items can be accepted.**

A & A Midwest
702-649-7776
www.aamidwest.com

Best Buy
Check area listings
www.bestbuy.com

Blind Center of Nevada
702-642-6000
www.blindcenter.org
($30 donation for non-flat screen monitors and televisions)

Champion Recycling
702-648-4884
www.championrecycle.com

Republic Services Recycle Center* 702-734-5400
Republic Services Transfer Station* 702-599-5766
www.republicservices.com

**Must have photo ID, and be either a direct residential customer (bring bill) or an indirect residential customer (live in a rental unit complex that contracts residential service). Check website for locations.*

Paint

Most household paints are either water-based latex or oil-based. If you have leftover paint, find a local school, church, neighbor or friend to use it.

Oil-based paints, paint thinners, solvents, and paint removers are all hazardous because they contain solvents and chemicals that are flammable and must be disposed of properly.

Latex paint is not hazardous, but it must be solidified before it can go in the regular trash with the lid off. Latex paint can be hardened by adding cat litter to the can until it has the consistency of oatmeal and then let it dry or by pouring it into a cardboard box containing cat litter and let dry. The paint doesn't have to be perfectly solid, but it cannot be runny. Be sure to do this in a well-ventilated area or outdoors. For smaller amounts, you can paint cardboard or newspaper and then discard it in the garbage when dry. NEVER pour paint down the storm drains, sanitary sewer, or onto the ground.

Republic Services Recycle Center* 702-734-5400

Republic Services Transfer Station* 702-599-5766

www.republicservices.com

**Must have photo ID, and be either a direct residential customer (bring bill) or an indirect residential customer (live in a rental unit complex that contracts residential service). Check website for locations.*

Batteries

Some dry cell batteries contain toxic metals such as mercury, cadmium, and lead.

These metals are contained within the battery casing and pose no risk while in use. It is when batteries are discarded that the release of these toxic metals in landfills becomes a concern. Nickel hydride batteries are environmentally safer. They contain no mercury, no lead, no cadmium, and are rechargeable.

Batteries Plus

www.batteriesplus.com

button cell, nickel metal hydride, lead acid (non-auto), lithium ion, nickel cadmium

Best Buy

www.bestbuy.com

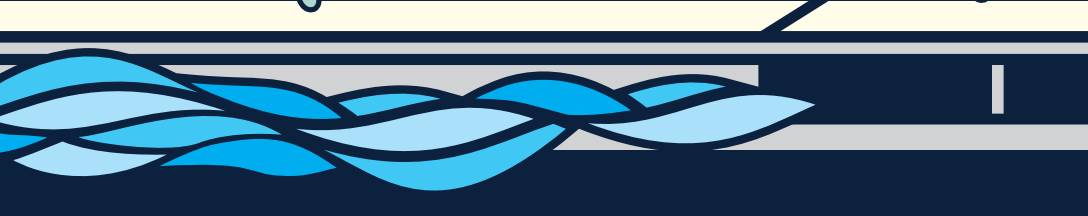
lead acid (non-auto), lithium ion, nickel cadmium

Battery Systems

702-257-6824 www.batterysystems.net

button cell, nickel metal hydride, lead acid (non-auto), lithium ion, nickel cadmium

only rain in the storm drain



Medicine Disposal

In the past, many people have flushed prescription, over-the-counter and veterinary medications down their toilet.

Someone probably told you this was a good way to keep the medication away from children and pets. However, this is not the best method of disposal as they can remain in the treated water when it is released into the water cycle. Instead, bring any unwanted medications, in original containers, to any area police substation lobby. Place the medications in a plastic bag and drop in the box. If you are unable to get to one of the drop off locations, or if you have a small amount, please go to www.paininthedrain.com/disposal/home-disposal/ to find out how to dispose of it from home.

To find a Drop Box Location go to

- www.paininthedrain.com/disposal/location/

By safely disposing of your medicine, you can help prevent drug abuse and protect the environment!

Miscellaneous

Ammunition and explosives may be taken to the Las Vegas Fire and Rescue headquarters, 500 North Casino Center Blvd. Firearms may be taken to any Las Vegas Metropolitan Police Department Substation for impound and disposal.

Fireworks may be taken to Clark County Fire Station 18, located at 575 E. Flamingo Road, the week BEFORE the 4th of July. Please call 702-455-7311 to schedule a drop off time.

Additional Resources

Clark County Office of Sustainability:

www.clarkcountynv.gov/comprehensive-planning/eco-county/Pages/KeepClarkCountyCleanResourceGuide.aspx

Helpful websites:

www.earth911.com
www.nevadarecycles.nv.gov
www.ecyclingcentral.com
www.southernnevadahealthdistrict.org

a citizen's guide to controlling

polluted runoff

Rural Clark County, Nevada

Clark County, Nevada

polluted runoff in rural Clark County

In Nevada's arid climate, water is a precious resource. In addition to having enough water for our communities, it is essential that the water be of good quality to support swimming, fishing, drinking, irrigating, and other uses. While we've made a lot of progress in cleaning up specific sources of pollutants, our everyday actions continue to affect water quality. Water washing over the land, whether from rain, car washing, or the watering of crops or lawns, picks up a variety of contaminants. These contaminants include oil and sediment from roadways, agricultural chemicals from farmland, and nutrients and toxic materials from urban and suburban areas. The runoff finds its way into our waterways, either directly or through storm drain collection systems.

The term **nonpoint source pollution** (also called polluted runoff) is used to distinguish this type of pollution from point source pollution. Point source pollution comes from specific sources, such as sewage treatment plants or industrial facilities. Scientific evidence shows that although huge strides have been made in cleaning up major point sources, our precious water resources are still threatened by the effects of polluted runoff. In fact, the United States Environmental Protection Agency has estimated that polluted runoff is now the single largest cause of the deterioration of our nation's water quality.

whatever they call it, why should I care about it?

Polluted runoff does not just affect large lakes and washes. In fact, chances are that polluted runoff is affecting your neighborhood. Water pollution in your town, and perhaps in your own backyard, can result in anything from weed-choked areas to contaminated drinking water. An additional impact of nonpoint source pollution

or polluted runoff is financial. It affects our pocketbooks! When polluted runoff enters surface waters, water treatment plants have to work longer and harder to process the water, especially drinking water. This translates into increased costs to you and your community. The bottom line is that both polluted runoff and its management are likely to increasingly affect you and your community.

only rain in the storm drain

but wait a minute! we live in the desert, don't we?

Yes, we do. That doesn't mean we don't get rain. In fact, rainfall in Nevada doesn't just come in gentle drizzles with no runoff. Rainfall in our area often comes during brief, but intense, storms with significant amounts of rainfall occurring in a short time frame. This increases the polluted runoff problem. Several months of pollutants may have accumulated on surfaces and roads by the time a storm occurs.

Desert soils also have poor water infiltration rates, meaning they don't readily absorb water, so that much of the water from a storm may move as surface runoff, collecting pollutants as it flows. The runoff moves down hill, either over the land or through a storm drain system, where water conduits deliver the stormwater to the Muddy or Virgin Rivers. The result is a huge influx of pollutants in our waterways after storms.

who causes polluted runoff?

We all do. Polluted runoff is the cumulative result of our everyday personal actions and our local land-use policies.

Here's a brief rundown of the causes and effects of the major types of pollutants carried by runoff.

pathogens

Pathogens are disease-causing microorganisms, such as bacteria and viruses that come from the fecal waste of humans and animals. Exposure to pathogens can cause a number of health problems and can affect recreational safety. Pathogens wash off the land from wild animal, farm animal, and pet wastes. They can also enter our waterways from improperly functioning septic tanks, leaky sewer lines and boat sanitary disposal systems.

nutrients

Nutrients are chemicals, both natural and manmade, that stimulate plant growth, such as nitrogen and phosphorus. Under normal conditions, nutrients are beneficial and necessary. However, in high concentrations, they can become an environmental threat. Having too many nutrients in ponds and lakes can lead to massive algal blooms that can cause reduction in water clarity. As the algae die and decay, they can create odors and rob the waters of life-sustaining dissolved oxygen, which in turn can kill fish. Nutrients in polluted runoff can come from both organic and inorganic agricultural fertilizers, septic systems, home lawn-care products, atmospheric deposition (car exhaust), car washing, and landscape debris and animal wastes.

only rain in the storm drain

sediment

Sand, soil and gravel eroded by runoff ends up in the storm drain system and in our washes and lakes. This sediment can alter stream flow and decrease the availability of healthy aquatic habitat. Sediment affects water clarity, may clog fish gills, and smothers spawning fish. Some major sources of sediment include poorly protected construction sites, bare soil at newly built sites, overly steep slopes resulting from poor construction methods, areas recently burned by wildfire, fallow agricultural fields, roadways and suburban gardens.

toxic contaminants

Toxic contaminants are chemicals that can harm the health of aquatic life and/or human beings. These chemicals result from a wide variety of human practices and products. Many of these chemicals are very resistant to breakdown and tend to be passed through the food chain and concentrated in large predators. Toxic chemicals include such things as hydrocarbons, metals (lead, mercury, cadmium), pesticides (DDT), and organic compounds such as polychlorinated biphenyls (PCBs). Oil, grease and gasoline (hydrocarbons) from roadways; industrial practices; and chemicals used in homes, gardens and yards, and on farm crops are major sources of toxic contaminants.

debris

Trash is without a doubt the simplest type of pollution to understand. It interferes with enjoyment of our water resources and, in the case of plastic and styrofoam, can be a health threat to aquatic organisms and other animals found in wetland habitats. Typically this debris starts as either street litter that is carried by runoff into our waterways.

thermal

Removal of streamside vegetation, land clearing for development, paved surfaces, shallow water impoundments, concrete canals and other artificial structures can result in heated runoff and elevated temperatures of surface water. This can be detrimental to aquatic life by negatively impacting aquatic health and reproductive cycles.

OK, but what's the purpose of this manual?

The purpose of this manual is to educate residents in Rural Clark County on polluted runoff in our community. Once everyone knows about polluted runoff, we'll be better able to manage its presence in our environment. This manual is organized into two sections, Home and Garden, and Within the Community. In the first sections, Home and Garden, you'll learn about pollution management within your four walls and outside in your yard or garden. The second section, Within the Community, will help you learn about other causes of water pollution that we see every day: trash, oil stains in parking lots, and pet waste, just to name a few.

With a small bit of effort on everyone's part, we'll be one step closer to cleaning up Southern Nevada's waters.

home & garden

herbicides and pesticides

Picture-perfect, pest-free gardens and lush, green, weed-free landscapes are common goals for many homeowners. In reality, achieving this vision can be expensive, impractical and environmentally unsound. Fertilizers, herbicides and insecticides cost money. If they are improperly or unnecessarily applied, they also contribute to polluted runoff. A more practical approach focuses on maintaining weeds and garden insects at non-damaging levels and encouraging healthy plant populations native to Nevada.

follow these tips...

- **Accept that a certain level of weeds and insects are part of the natural balance.**
- **Read fertilizer, insecticide, and herbicide labels and apply them only as directed. Remember, more is not better!**
- **When possible, purchase only the amount of insecticide or herbicide you need for the job.**
- **Store fertilizers, herbicides and insecticides in their original containers in an area that maintains the suggested temperature ranges.**
- **Store fertilizers, herbicides and insecticides away from water, kids, and pets.**
- **Test your soil before applying fertilizers. Over-fertilization is a common problem, and excess nutrients can leach into groundwater or contaminate washes.**
- **Consider using organic fertilizers, such as bone meal, blood meal, organic mixes, and compost.**
- **Avoid using fertilizers or pesticides within 75 feet of waterways or wetlands.**
- **Avoid using fertilizers or pesticides near cisterns and wellheads.**
- **Do not apply insecticides, herbicides, or fertilizers before or during rain to avoid runoff.**
- **Keep fertilizers and pesticides off sidewalks and driveways, where they may be washed into storm drains.**

only rain in the storm drain

- **Use slow-release fertilizers on areas where the potential for water contamination is high, such as sandy soils, steep slopes, and compacted soils. In such areas, low-phosphate or phosphate-free fertilizers are good choices. If your favorite garden supply store does not carry such items, request that they do. These products may also be ordered through the internet.**
- **Select the proper season to apply fertilizers. Incorrect timing may encourage weeds to grow or may stress grasses.**
- **Calibrate your applicator to the appropriate rate before applying insecticides, herbicides or fertilizers. As equipment ages, annual adjustments may be needed.**
- **If you elect to use a professional lawn care service, select a company that employs trained technicians and follows practices designed to minimize the use of fertilizers and pesticides.**

household hazardous waste and chemicals

Many common household products such as paint, paint thinners, drain and oven cleaners, as well as many cleansers, contain toxic chemicals. When improperly used or discarded, these products are a threat to public health and the environment.

follow these tips...

- **Buy only what you need for the immediate job. A three-pack of drain cleaner at a discount warehouse store may cost less per can, but do you really need three bottles of drain cleaner in your home? Can you use up the product in a reasonable amount of time?**
- **Follow label directions for use. More is not better!**
- **Read labels and select nontoxic substitutes or less toxic alternatives whenever possible.**
- **Select phosphate-free, biodegradable detergents and cleaners to help reduce the amount of nutrients discharged to surface waters and groundwater.**

- Choose water-based products whenever possible, as these are typically less toxic and biodegrade more rapidly than petroleum- or solvent-based products.
- Store any leftover products in their original containers in a location that maintains the suggested storage temperatures.
- Share unused products with friends and neighbors. Keep them in their original labeled containers.
- Never mix chemicals together.
- Don't burn or bury leftover chemicals or containers.
- Do not pour toxic chemicals down any drain or dispose of them in the toilet. Both septic systems and treatment plants rely on bacterial processes to break down human wastes. Toxic chemicals can kill these beneficial bacteria, disrupting waste processing and increasing treatment costs.
- Never dispose of toxic chemicals in storm drains. Storm drains deliver these chemicals directly to washes and rivers, with no prior treatment. It's like dumping the chemicals directly into your local river!
- Never pour unwanted toxic chemicals on the ground.
- Most toxic substances include disposal instructions on the label. Always read and follow the directions. For more information, access the internet and search for the product name or manufacturer. Contact the manufacturer for disposal information.

Properly dispose of these chemicals by taking them to a hazardous waste collection center. Call **Republic Services at (800) 752-8719** for information regarding household hazardous waste collection in your area.

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landscape and garden

The choices you make in your landscape or garden can either help prevent nonpoint source pollution or contribute to it.

here's what you can do about landscapes and gardens...

- Don't water the pavement! It won't grow!
- When designing your landscape, reduce grass areas and use plants that have low requirements for water, fertilizers, and pesticides. For more information on the incentive program for water efficient landscapes, please visit www.snwa.com.
- Minimize impervious (hard) surfaces by installing wood decking, bricks or interlocking stones instead of impermeable cement. This will decrease runoff.
- Create a landscape buffer between lawns and impervious surfaces. This helps minimize runoff and creates a buffer to compensate for wind drift during watering.
- Check your sprinklers several times during the season to make sure they are functioning properly and the direction of spray has not shifted.
- Change the time on automated sprinkler systems as the weather cools or warms. Turn off the system if your landscape received enough water from rainfall that day. Don't water in the middle of a rain storm!
- Use landscaping techniques such as grassy swales (low areas in the lawn) or porous walkways to increase infiltration and decrease runoff from your property.
- Reduce stormwater runoff from your site by redirecting rain gutters onto vegetated or mulched areas, rather than bare soil or pavement. Your plants will benefit from the extra water and you'll avoid polluted runoff.
- Disperse runoff by grading all impervious surfaces, including driveways and walkways, so that they drain onto vegetated areas. If driveways are already in place, infiltration trenches may be installed to capture runoff from driveways and allow it to infiltrate into the ground.

- Leave lawn clippings on your lawn so that nutrients in the clippings are recycled. This will reduce the frequency and amount of fertilizers you need to apply and will reduce yard waste that ends up in the landfill.
- When plants decompose, nutrients are released and oxygen is consumed. When excess yard debris winds up in our water, it has a detrimental effect on water quality. Sweeping up leaves and yard trimmings from impervious surfaces and properly disposing of them or composting them will prevent nutrients from being delivered to washes and rivers via the storm drain system. Compost is a valuable soil conditioner that gradually releases nutrients to your lawn and garden. Compost also helps retain moisture in the soil, helping you conserve water.
- Restore bare patches in your lawn as soon as possible. Spread mulch on bare ground to avoid erosion.
- Litter, leaves, sediment and other debris can clog storm drain systems and result in flooding. To prevent this, keep street gutters and storm drains free of these materials. Although major municipalities are responsible for maintaining storm drain inlets, there are too many to maintain frequently. You can help by frequently checking the street gutters surrounding your property and keeping them free of debris.
- If you live adjacent to washes, wetlands, or other water bodies, allow thick vegetation to establish on the banks. This buffer acts to slow runoff and remove some pollutants before they enter the wash.

only rain in the storm drain

septic systems

Improperly installed or maintained septic systems can contaminate groundwater and surface water with nutrients and pathogens. By following the recommendations below, you can help ensure that your system continues to function properly.

here's what you can do about septic systems...

- Know where your septic tank and drain field or leach field are located. Do not park on, drive over, or build on top of your septic tank or leach field. Heavy, impermeable surfaces placed over the drain field may damage your tank or leach field and will interfere with evaporation and air flow necessary for effluent treatment.
- Avoid using household drains to dump chemicals. These substances can destroy the bacteria in your septic tank.
- Do not use septic system additives. There is no scientific evidence that biological or chemical additives aid or speed up decomposition in septic tanks. Some additives may even harm the septic system or contaminate groundwater.
- Don't use toilets as trash cans! Excess solids may clog your drain field and necessitate more frequent pumping.
- Inspect your septic system annually and pump it out regularly.
- Avoid or reduce the use of your garbage disposal. Garbage disposals contribute unnecessary solids to your septic system. This will require you to pump your septic tank more frequently.
- Plant any new trees at least 25 feet away from your septic tank and leach field. Tree roots can crack pipes or obstruct the flow of wastewater through drain lines.
- Avoid or reduce the use of phosphate-containing detergents, which contribute to phosphorus pollution.
- Conserve water and stagger water use to moderate the water inflow to the septic system. This will reduce the chance of hydraulic overloading and septic system failure.

agriculture and livestock management

The United States has over 330 million acres of agricultural land that produce an abundant supply of low-cost, nutritious food and other products. American agriculture is noted worldwide for its high productivity, quality, and efficiency in delivering goods to the consumer. However, when improperly managed, agricultural activities can affect water quality.

what to do about agriculture management…

- Exercise proper pesticide application practices. See the "Herbicides and Pesticides" section of this manual for further details.
- Store and manage facility wastewater and runoff with appropriate waste management systems.
- Improve your water use efficiency. Measure actual crop needs and apply only the amount of water required.
- Implement a management plan which includes drainage systems that keep rainwater separated from contaminated water.
- Establish a Wellhead Protection Area around your local well. Avoid spilling or disposing of animal waste, fuels, pesticides, fertilizers, paints, or any similar materials within the Wellhead Protection Area.
- Site your well outside areas of potential contamination. Wells should not be located in corrals, pastures, feedlots, or near underground fuel storage tanks. Wells should also be at least 150 feet from a septic tank and its leach field.
- Maintain vegetation along stream banks and around other water bodies.

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what to do about livestock management…

- Reduce the impacts of grazing on water quality – adjust grazing intensity, keep livestock out of sensitive areas, provide alternative sources of water and shade, and promote revegetation of ranges, pastures, and riparian zones.
- Reduce the potential for channel degradation by adhering to soil and water conservation principles, upgrading existing channel capacity when increased runoff volumes are anticipated, and fencing critical riparian areas.
- Confined livestock areas such as feedlots, livestock and poultry barns and outdoor animal pens sometimes require runoff collection. This runoff may be stored and applied later to agricultural land as a fertilizer or soil conditioner.
- Locate your barns, corrals, paddocks, and pasture fences appropriately to keep home, yard, and garden chemicals out of your water supply.
- Fence off or otherwise control access to stream banks, irrigation ditches, ponds, and wetlands to protect them from overgrazing and trampling.
- Locate salt licks, feeding areas, and watering troughs, where animals congregate, away from slopes and water bodies.
- Keep waste and fill materials like manure and garbage out of all water bodies.

within the community

automobiles

For most of us, automobiles are a necessary part of our daily lives. Thoughtful use can reduce polluted runoff as well as air pollution.

here's what you can do about automobiles...

- **Plan errands to minimize the number of trips. Driving less reduces the amount of pollution your automobile releases into the environment.**
- **Regularly inspect and maintain your vehicle to help keep automotive waste, toxic metals, and petroleum byproducts from contaminating runoff.**
- **Clean up spilled brake fluid, oil, grease, antifreeze and other toxic chemicals, rather than hosing them into the street where they may enter the storm drain system and eventually reach local washes and lakes.**
- **Never pour used oil or other chemicals down storm drains, on the soil, or in the trash.**
- **Recycle used oil, antifreeze and batteries by taking them to recycling centers or auto parts stores. Recycling just 2 gallons of used oil can generate enough electricity to run the average household for almost 24 hours.**
- **Wash your car at a certified car wash. Detergents contain nutrients that can run off impervious surfaces. Certified carwashes are required to collect and dispose of wash water properly.**
- **If you must wash your car at home, park on a lawn area, gravel driveway or other permeable surface so the soapy water can soak into the ground.**
- **Use a spray nozzle or hose equipped with a shutoff valve to minimize water use. Don't let the hose run throughout the whole car washing process.**
- **Many schools, clubs and organizations use car washes as fundraisers. Try to plan ahead and divert the wastewater to a sanitary sewer, grassy area or catch basin instead of a storm drain. If possible, work with a local carwash to host the fundraiser. Many will donate a portion of their profits in exchange for the sweat equity of your volunteers.**

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pet waste

Pet waste contains nutrients and pathogens that can contaminate surface waters. If ingested, many pathogens found in animal wastes can harm humans. Organisms such as Cryptosporidium, Giardia lamblia, Salmonella, and E. coli can cause symptoms ranging from skin sores, to diarrhea and gas, to chest pain. Symptoms are more severe in the very young, the elderly and those individuals who are immunosuppressed. Some strains of E. coli can cause serious illnesses and fatalities. Cryptosporidium is also of particular concern because it is highly resistant to disinfection with chlorine.

Animal wastes can also contain parasites such as roundworms, pin worms and other parasitic nematodes. Infection by a few worms is usually not a problem, but severe infections may cause fever, bronchitis, asthma, or vision problems. Many people feel that the waste from their pet doesn't make much of a contribution to polluted runoff. When you combine all the waste from all the pets in the community, however, the impact becomes significant. The easiest way to avoid health and aesthetic problems is to clean up pet waste and dispose of it properly.

here's what you can do about pet wastes...

- **When taking your pet for walks, remember to bring several plastic bags to clean up after him or her. Scoop the poop! ... And then place it in the trash.**
- **Many parks and other recreational areas in Clark County have dog poop stations that provide small plastic bags and garbage cans. These units allow you to clean up after your pet and then toss it in the trash, so you won't have to carry the filled bags for the remainder of the walk.**

- Flush dog poop down the toilet. The water from toilets goes to a septic system or sewage treatment plant that removes pollutants before it reaches washes and Lake Mead. Avoid adding kitty litter to the toilet, however. Cat poop and used litter should be scooped out and put in a securely closed bag in the trash.
- Avoid letting your pet do their business within 200 feet of a water body.
- Never dump pet waste directly in or near a ditch, catch basin, storm drain, or water body.
- For dogs, cats, and other meat eaters, dispose of the waste in the garbage or down the toilet. Wastes from meat eaters should not be placed in compost piles. The parasites, bacteria and/or viruses present in their feces are not readily destroyed during the composting process and can be passed on to humans.

recreational activities

We all enjoy the many recreational opportunities found in Clark County. To ensure our natural resources will continue to be enjoyable, follow these suggestions:

- When possible, carpool.
- Dispose of all waste properly. Pack it in and pack it out. Learn more at Leave No Trace, www.LNT.org.
- Deposit human waste in sanitary facilities or in 6- to 8-inch deep "catholes," 200 feet or more away from a water body.
- Pick up after your pets and don't let them do their business within 200 feet of a water body.
- When camping, try to keep your campsite at least 200 feet away from the edge of a stream or lake.
- Build fires only in designated areas and only during permitted times.

only rain in the storm drain

What to do while boating to prevent pollution:

In Clark County, Lake Mead and the Colorado River system offers many outstanding recreational opportunities. These water bodies also provide drinking water to our communities. It is important to protect the scenic beauty and water quality of our lakes, rivers, wetlands and other water bodies so we can continue to use and enjoy them.

- Avoid producing large wakes within 500 feet of the shore. This will help reduce shoreline erosion and sediment pollution of nearby washes.
- Rinse your boat with a brush and water and avoid the use of soap whenever possible. If you must use soap, select a phosphate-free variety.
- Inspect and remove all aquatic vegetation from your boat when removing it from the water to avoid transferring undesirable weeds from one water body to another.
- Use tarps to catch any boat scrapings, especially toxic paint and antifouling chips or dust.
- Use sanders and other maintenance equipment that is equipped with vacuum attachments when working near the water.
- Don't use toxic polishes or stain removers.
- Only discharge boat sewage into pump-out stations. It is against federal law to discharge sewage into navigable U.S. waters.
- Do not dump any trash overboard. Bring all trash back to shore for dumping or recycling.
- Avoid gas tank overflows during refueling.
- Never pump oil- or fuel-contaminated water overboard.
- Properly dispose of drain oil.
- Keep engines well maintained and free of leaking fuel or lubricants.
- Keep oil- and fuel-absorbing pads on hand for accidental spills. Properly dispose of these pads.

so… what now?

After reading through this manual, you should now have a better understanding of polluted runoff in our community. Think about this manual and what you've learned next time you take your dog for a walk, wash your car, or plan a boating trip to Lake Mead. Management of polluted runoff is not difficult; it simply takes a little bit of knowledge and a few small changes to our routines.

remember…

it's your water…
protect it!

For more information on polluted runoff in Clark County, visit www.clarkcountynv.gov – keyword: water quality, or call the Clark County Water Quality Team at (702) 668-8674.

Content for this manual adapted with permission from:
NEMO, Nevada – University of Nevada Cooperative Extension
http://www.unce.unr.edu/NEMO/

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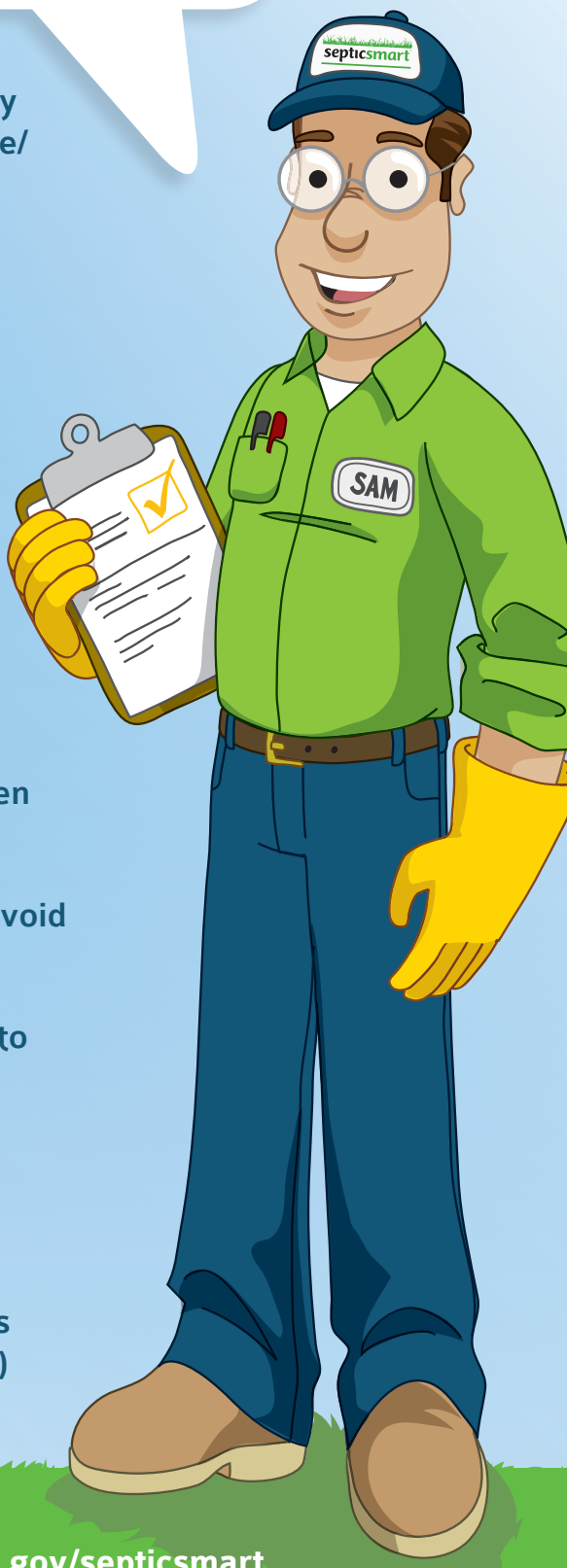
Nonpoint Source Pollution Management Branch.

Top 10 Ways to Be a Good Septic Owner

- Have your system inspected every three years by a qualified professional or according to your state/ local health department's recommendations
- Have your septic tank pumped, when necessary, generally every three to five years
- Avoid pouring harsh products (e.g., oils, grease, chemicals, paint, medications) down the drain
- Discard non-degradable products in the trash (e.g., floss, disposable wipes, cat litter) instead of flushing them
- Keep cars and heavy vehicles parked away from the drainfield and tank
- Follow the system manufacturer's directions when using septic tank cleaners and additives
- Repair leaks and use water efficient fixtures to avoid overloading the system
- Maintain plants and vegetation near the system to ensure roots do not block drains
- Use soaps and detergents that are low-suds, biodegradable, and low- or phosphate-free
- Prevent system freezing during cold weather by inspecting and insulating vulnerable system parts (e.g., the inspection pipe and soil treatment area)



septicsmart
U.S. Environmental Protection Agency

For more SepticSmart tips, visit **www.epa.gov/septicsmart**

EPA EPA-832-F-16-010 | July 2016

Keep it Flowing!

A Guide to Caring for Your Septic System

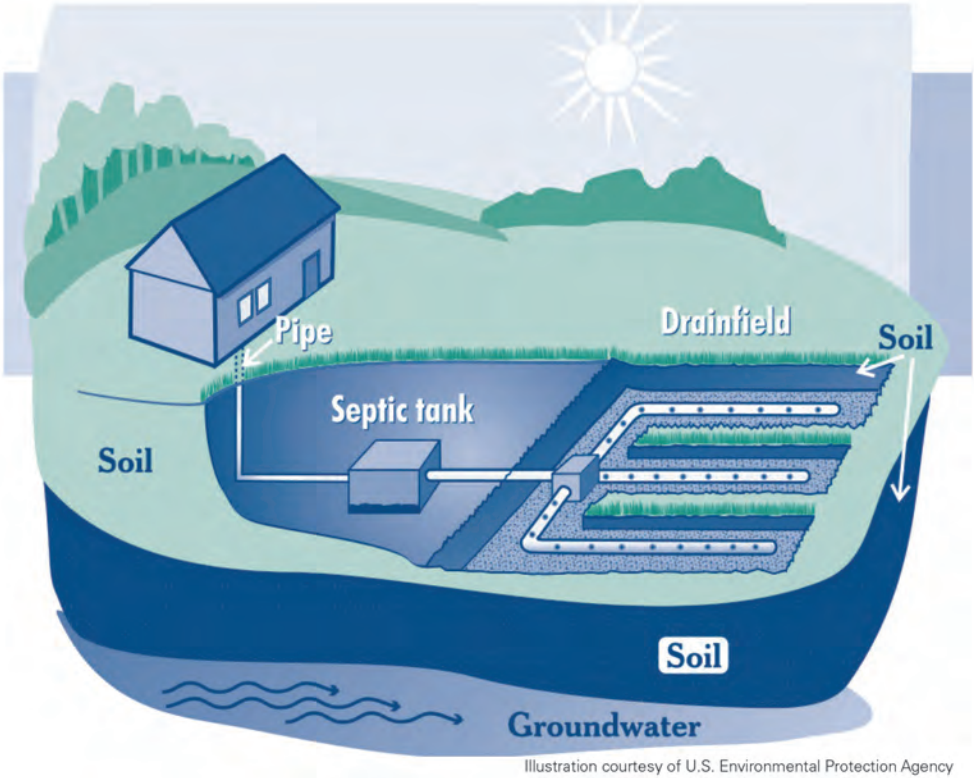


Illustration courtesy of U.S. Environmental Protection Agency

LOCALLY MADE
PRECAST PROUD
QUALITY ASSURED

Your Precast Concrete Septic Tank

Congratulations on your new precast concrete septic tank! A high-quality precast concrete tank is an important part of your septic system. With proper care, it will provide you with many years of reliable service.

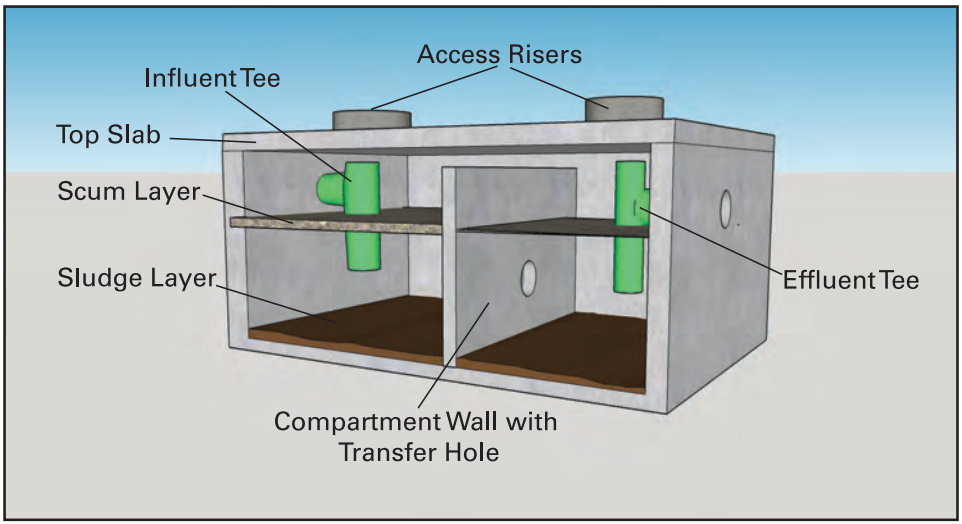
Septic systems come in many styles and may include a variety of components that require additional service, but the same basic care guidelines apply to nearly all septic systems.

Check with your installer or local Health Department if you have questions. Or, see the list of resources at the end of this booklet.

Top 4 Things You Can Do to Protect Your System

1. Regularly inspect your system and pump your tank as necessary.
2. Use water efficiently.
3. Don't dispose of household hazardous wastes in sinks or toilets.
4. Take care of your drain field.

–Environmental Protection Agency



A Long-Lasting Septic System

With proper care and routine maintenance, your septic system will last a long time. It is important to follow these simple guidelines to ensure years of trouble-free service.

- It is extremely important to keep man-made materials from entering your septic system. So never flush plastic wrappers, diapers, tampons, coffee grounds, cigarette butts, cooking fats, paint or food items.
- Using a garbage disposal will cause your tank to fill more rapidly. Many states require larger tanks if garbage disposals are used.
- Determine how often you need to have your tank pumped based on its size, number of people living in the house and usage patterns. Your installer may be able to help you determine a schedule for inspections and pumping.
- Divert roof drains and water from the driveway away from the septic system.
- Draw a diagram marking the location of your septic tank and disposal field and keep it in a handy place.
- Never park on or drive through the disposal field. Do not park or drive over the tank, unless it is traffic-rated. Cars, trucks, excavating equipment and other heavy equipment will damage the system. Lawn mowers and lawn tractors are acceptable.

What's in the Tank?

Your precast concrete septic tank is a high-quality, watertight container that holds wastewater long enough to allow solids to settle out (sludge) and oil and grease to float to the surface (scum).

Compartments in the tank prevent the sludge and scum from leaving the tank and traveling into the drain field.

Frequently Asked Questions

Why should I maintain my septic system?

When septic systems are properly designed, constructed and maintained, they effectively reduce or eliminate most human health or environmental threats posed by pollutants in household wastewater. However, they require regular maintenance or they can fail. Septic systems need to be monitored to ensure that they work properly throughout their service lives.

How often does my system need to be pumped?

Your installer should be able to help you determine how often your system needs to be inspected and pumped.

How do I know if I have a blocked pipe, a full septic tank or a clogged disposal field?

Signs of a failing system include slow draining or flushing of toilets; sewage backup into the house; sewage odors near the tank; and sewage in the lawn. Problems can be difficult to diagnose, so it is best to call a professional if you experience any of these situations.

Should I use a septic system additive to help keep the tank clean?

Products are available that claim to break down sludge in septic tanks so that they never need to be pumped. While there is some disagreement on the effectiveness of additives, the typical septic tank will contain all the microbes it needs for effective treatment. The best way to ensure your system works properly is through periodic pumping and regular inspections.

Can too much water damage the system?

The best way to ensure the long-term health of your system is to avoid flooding it with water. Leaking faucets and older toilets that use lots of water make your system less efficient. Washing multiple loads of clothes on the same day will also tax many septic systems. In general it's a good idea to monitor the use of water in your home and try to avoid using too much water at the same time.

How Does it Work?

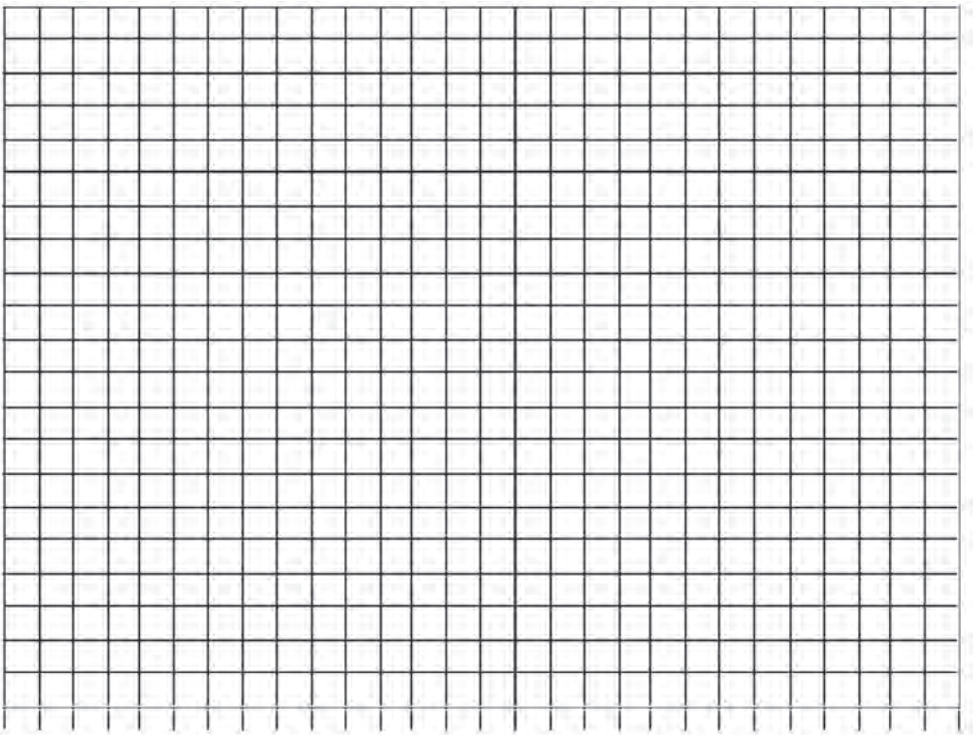
Everything that goes down the drain and toilet ends up in the septic tank. There it is greeted by billions of microscopic bacteria that break down the waste as it is filtered and separated through a variety of chambers (see diagram). The filtered waste leaves the tank and, in most cases, passes through a disposal field – a series of underground perforated pipes – where it is again filtered by the soil before it reaches the water table.

Septic System Maintenance Record

Date	Description

Diagram of Septic System Location

So you remember the exact location of your septic tank and disposal field in relation to your house, make a diagram showing the house, the tank and drain field.



For More Information

Environmental Protection Agency
epa.gov/septic

National Small Flows Clearinghouse
nesc.wvu.edu

National Precast Concrete Association
precast.org/precast-product/septic-tanks/

National Onsite Wastewater Recycling Association
nowra.org

Find a Local Professional
septiclocator.com

National Association of Wastewater Transporters
nawt.org

What Does an Inspection Include?

- Locating the system
- Uncovering access holes
- Flushing the toilets
- Checking for signs of backup
- Measuring scum and sludge layers
- Identifying any leaks
- Inspecting mechanical components
- Pumping the tank (if necessary)

YOUR LOCAL SERVICE PROVIDER IS: