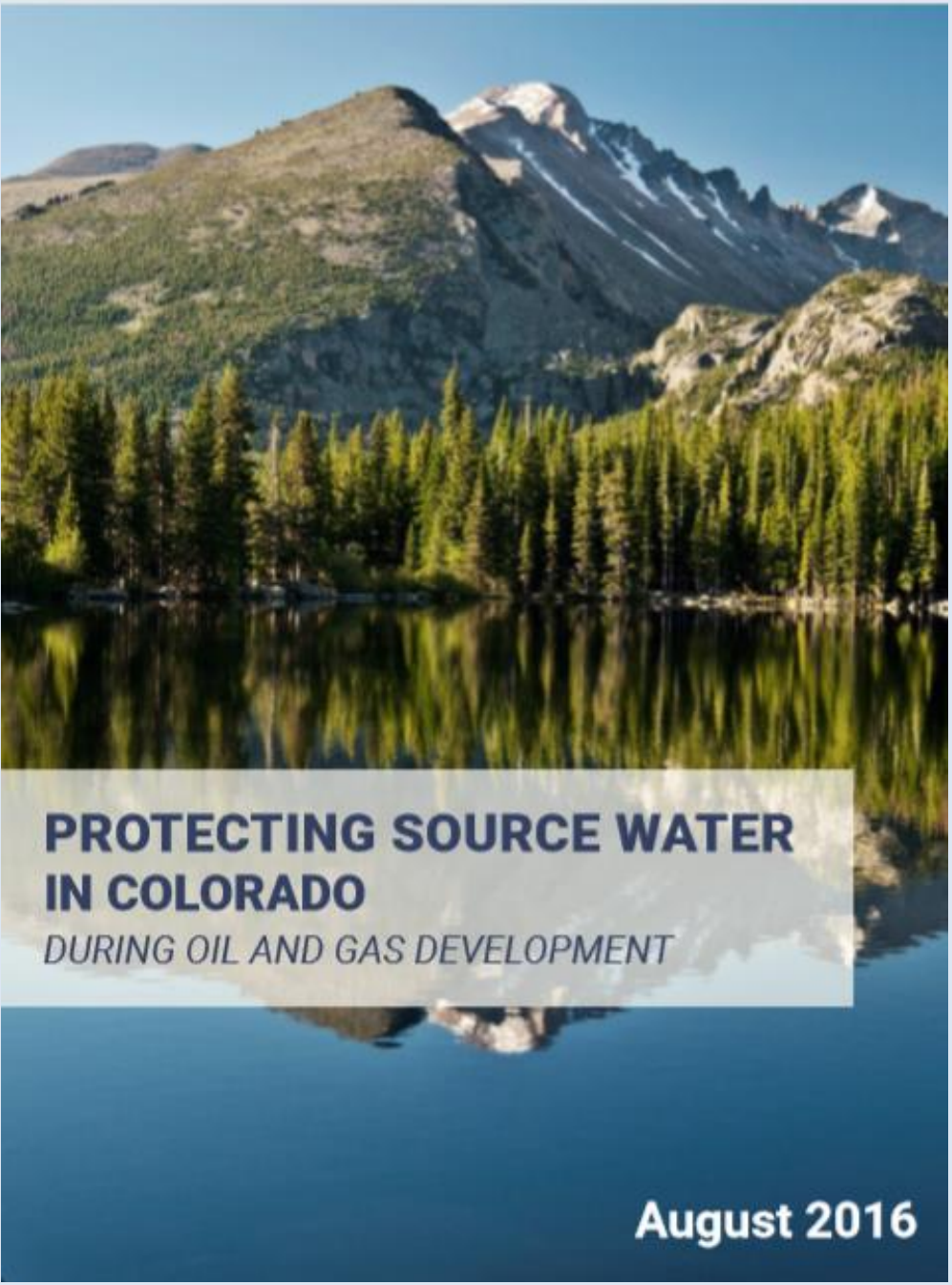
Like Oil and Water

Protecting Source Water During Oil and Gas Development

CBA Est. in 1897 Colorado Bar Association

DENVER BAR ASSOCIATION



Rural Water Association

AirWaterGas

Intermountain Oil and Gas BMP Project

Western Resource Advocates

OUTLINE OF PRESENTATION

1. Introduction
2. How oil and gas development can impact water quality
3. Senate Bill 19-181 changes mission of COGCC
4. New water quality protections in Mission Change rulemaking
   A. New rights for water providers
   B. Changes to siting requirements
   C. Increased protections for water systems
5. Colorado Rural Water Association and the state SWAP program

Threats to water quality from oil and gas development

- Spills
- Releases from leaking equipment, waste pits
- Methane migration

SPILLS and RELEASES

From 2013-2016, there was an average of 1.8 spills per day, with an average size of 171 gallons of oil & 1265 gallons of produced water per spill


Leaking Waste Pits

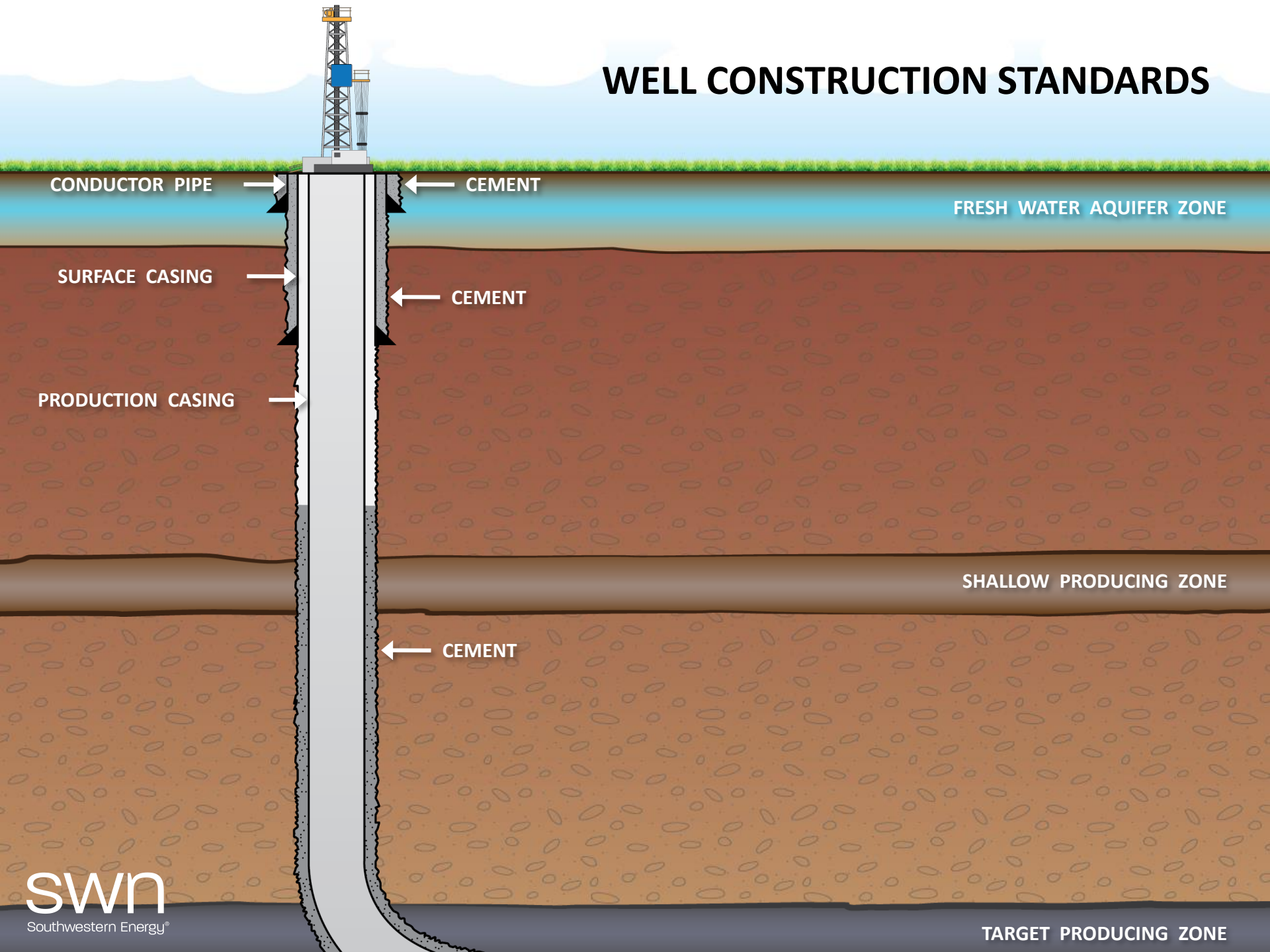
Hydraulic Fracturing

METHANE IN WELL WATER

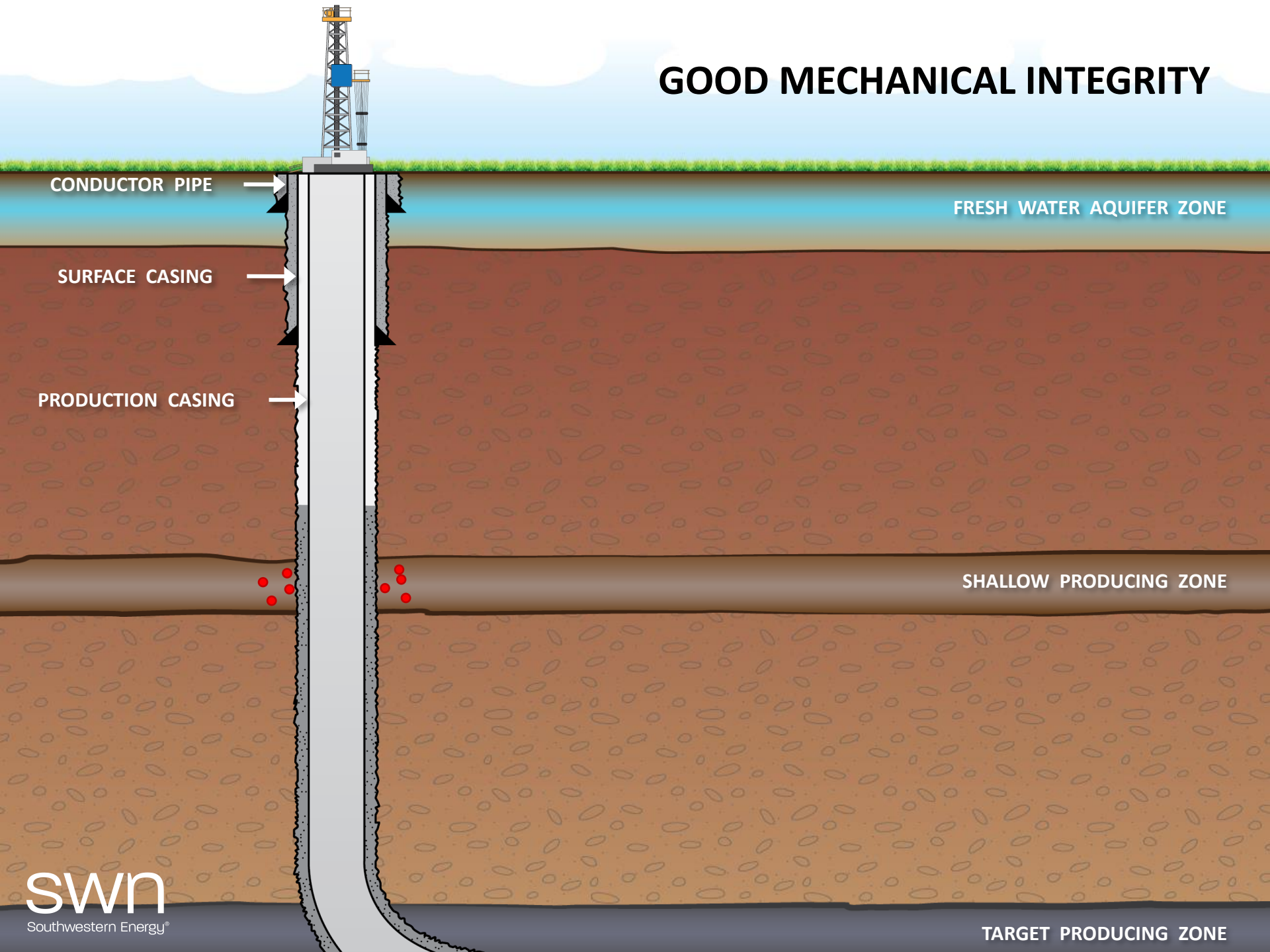
Owen A. Sherwood, Jessica D. Rogers, Greg Lackey, Troy L. Burke, Stephen G. Osborn, and Joseph N. Ryan. 2016. “Groundwater Methane in Relation to Oil and Gas Development and Shallow Coal Seams in the Denver-Julesburg Basin of Colorado.” Proc Natl Acad Sci USA. published ahead of print July 11, 2016, doi:10.1073/pnas.1523267113. Full text available: http://www.pnas.org/content/early/2016/07/05/1523267113.full

Osborn SG, Vengosh A, Warner NR, Jackson RB. Methane contamination of drinking water accompanying gas-well drilling and hydraulic fracturing. Proc Natl Acad Sci USA. 2011;108:8172–8176. Available at: http://www.nicholas.duke.edu/cgc/pnas2011.pdf

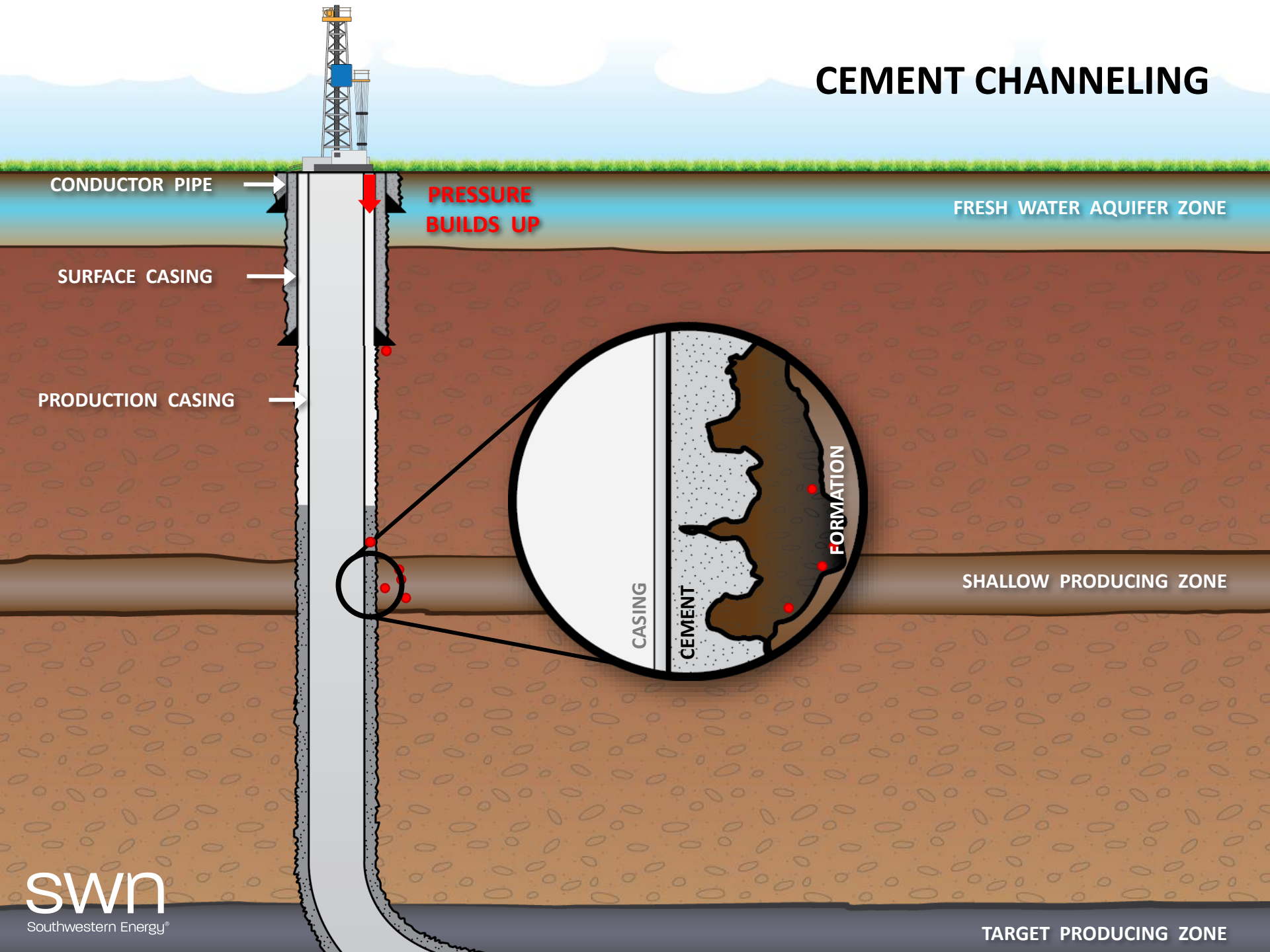
WELL CONSTRUCTION STANDARDS



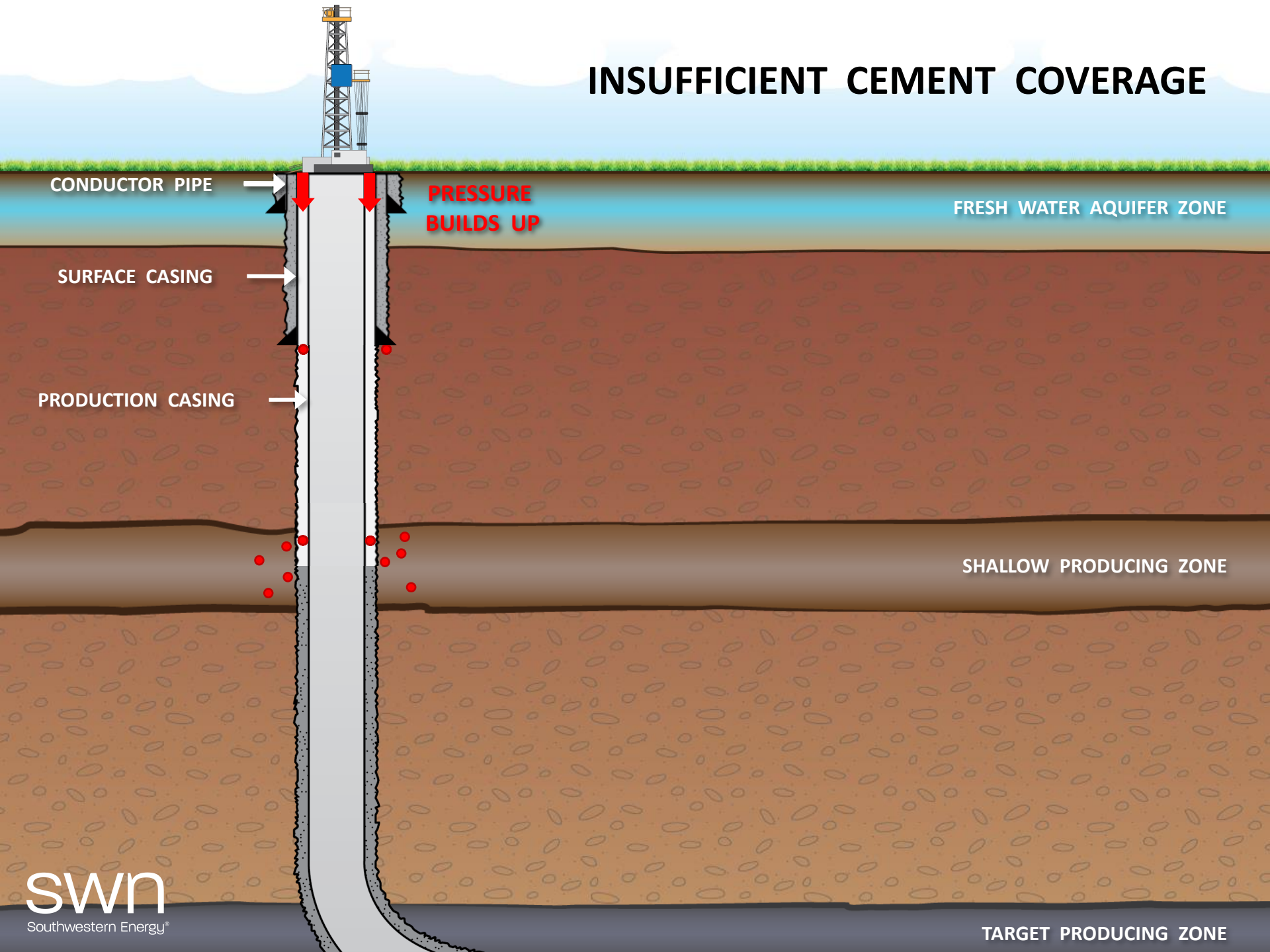
swn
Southwestern Energy®


GOOD MECHANICAL INTEGRITY
CONDUCTOR PIPE
SURFACE CASING
PRODUCTION CASING
FRESH WATER AQUIFER ZONE
SHALLOW PRODUCING ZONE
TARGET PRODUCING ZONE
swn
Southwestern Energy®

CEMENT CHANNELING



swn
Southwestern Energy®


INSUFFICIENT CEMENT COVERAGE
CONDUCTOR PIPE
SURFACE CASING
PRODUCTION CASING
PRESSURE BUILDS UP
FRESH WATER AQUIFER ZONE
SHALLOW PRODUCING ZONE
TARGET PRODUCING ZONE
swn
Southwestern Energy®

Entities involved in source water protection from oil & gas development

- Water Providers
- Local Governments
- State Agencies:
  - Oil and Gas Conservation Commission
  - Water Quality Control Commission
- Federal Agencies: BLM, US Forest Service

Mitigation Hierarchy

1. **AVOID** – *the incompatible land uses by separating uses*

2. **MINIMIZE** – *use design to reduce conflicts*

3. **MITIGATE** – *address unavoidable impacts through best management practices or other requirements*

ADDRESSING POTENTIAL RISKS TO SOURCE WATER FROM OIL AND GAS DEVELOPMENT

1. **Location: The Most Important Protection of Source Water**

2. **Mitigation: Reducing potential impacts to Groundwater Quality**
   a. Requiring Proper Casing and Well Construction Are the Most Important Measures to Protect Groundwater
   b. Testing the Casing and Well
   c. COGCC Offset Well Plugging Policy Addresses Nearby Abandoned Wells that Could Lead to Groundwater Contamination
   d. Use of Pits to Store Water and Other Fluids
   f. Groundwater Protections Through Orders
   g. Baseline Monitoring of Groundwater Quality

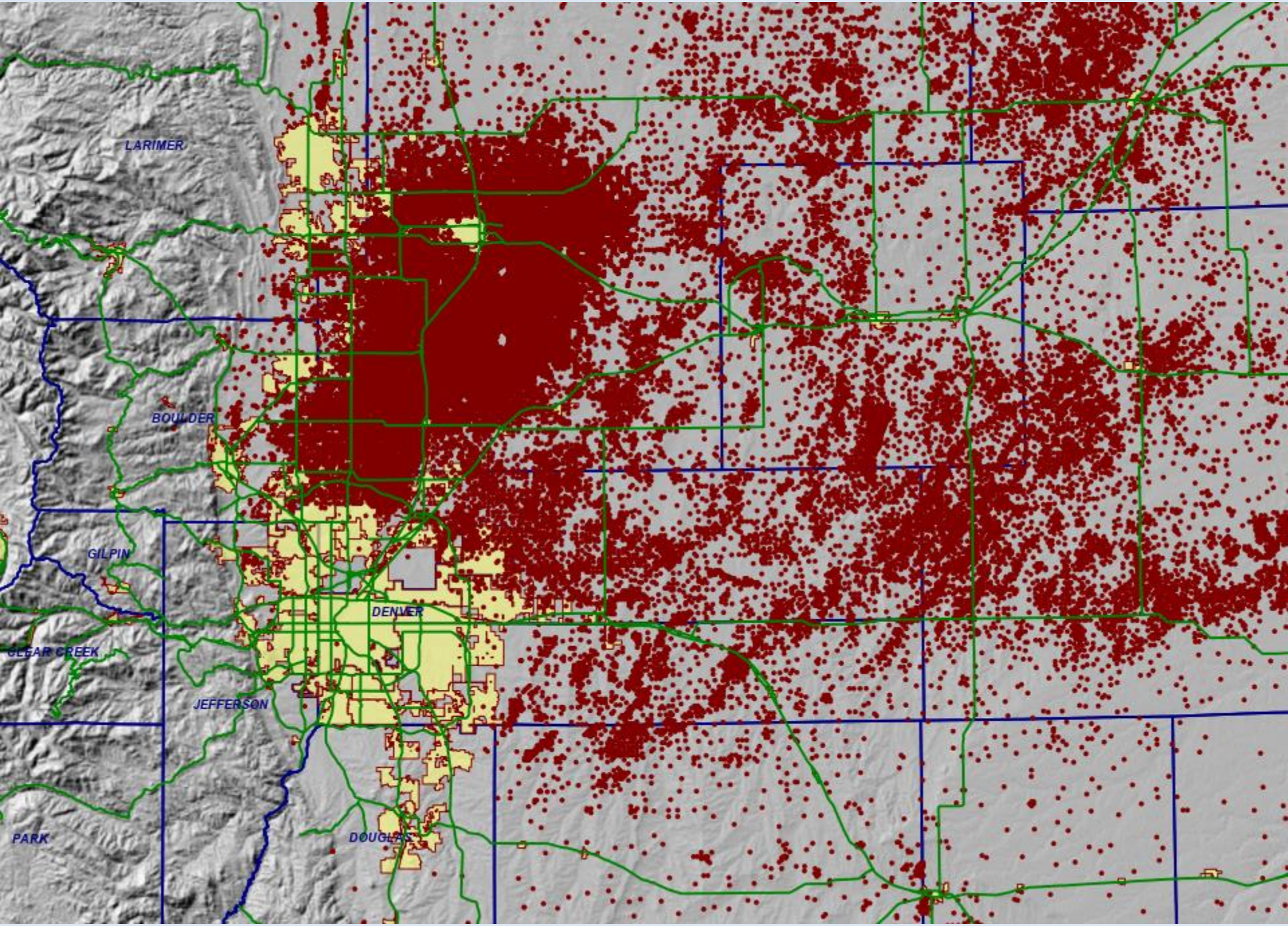
REGULATORY AND NON-REGULATORY APPROACHES TO PROTECTING SOURCE WATER

available to water providers and local governments

- Designating source water protection areas
- Watershed protection ordinances
- Working through state permitting process
- Private party contracts
  - Oil and gas leases
  - Surface use agreements
- Memorandums of Understanding
- Collaborative planning approaches

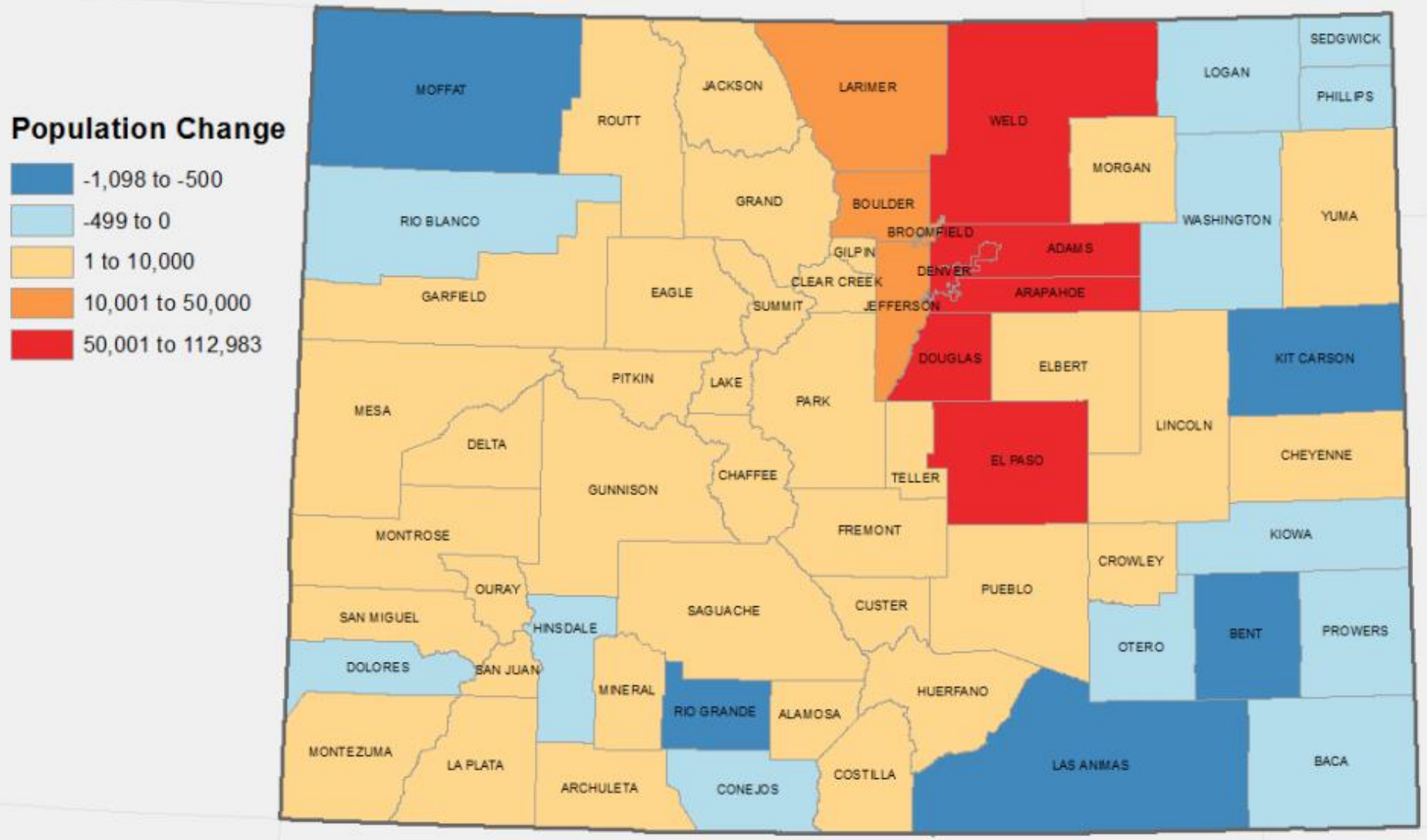
SB 181

BACKGROUND

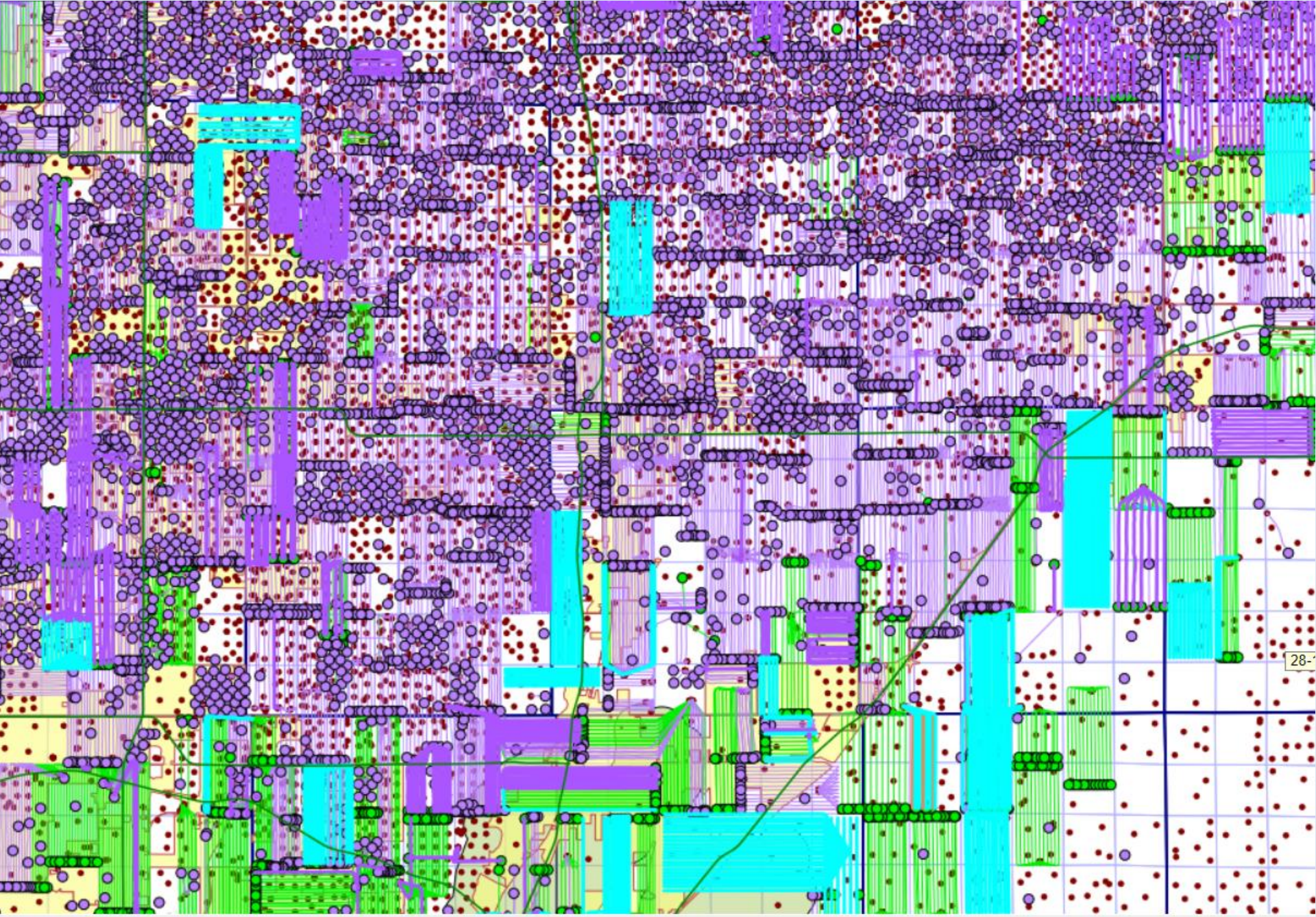

LARIMER
BOULDER
GILPIN
DENVER
CLEAR CREEK
JEFFERSON
PARK
DOUGLAS

Colorado: Total Population Change

2010 - 2018



Colorado State Demography Office, 05/02/2019



Proposal “create(s) an unnecessary long-term risk for a spill or release to potentially impact the public water supply.” --Colorado Department of Public Health and Environment (2017)


Firestone tragedy
April 17, 2017

COGCC v. Martinez, found that the COGCC's mandate was to

(1) ***foster*** the development of oil and gas resources, and

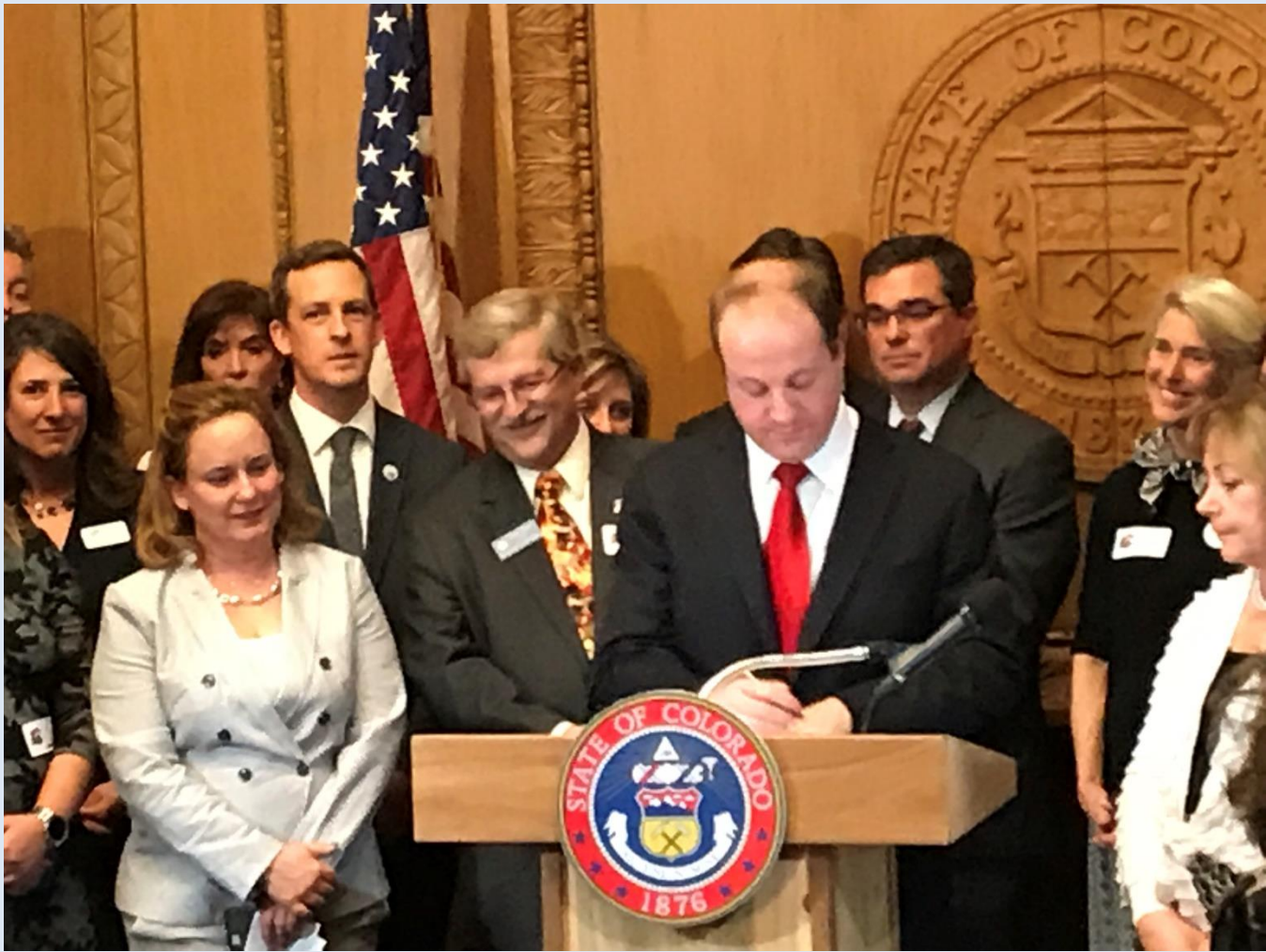
(2) protect public health, safety, and welfare, **but only after taking into consideration cost-effectiveness and technical feasibility.**

APRIL 2019

Senate Bill 19-181

Protecting Public Welfare in Conduct of Oil and Gas Operations

Senate Bill 181 was signed into law on April 16, 2019



Senate Bill 19-181

Protecting Public Welfare in Conduct of Oil and Gas Operations

1. REFORMS THE COGCC MISSION TO PROTECT PUBLIC HEALTH AND ENVIRONMENT

2. GIVE LOCAL GOVERNMENTS CLEAR REGULATORY AUTHORITY OVER OIL AND GAS AND ENDS STATE PREEMPTION.

Senate Bill 181 impacts on COGCC

- ✓ Requires the COGCC to regulate the industry to protect public health, safety, welfare and the environment
- ✓ Changes make-up of COGCC Commission
- ✓ July 1, 2020 - new professional COGCC Commission

COGCC Mission Change Rulemaking

More protective rules are applied

COGCC Rules:

422. LOCAL GOVERNMENT WELFARE PROTECTION STANDARDS

Operators will comply with all Relevant Local Government requirements, including regulations that may be more protective or stricter than the Commission's Rules.

New Rights for Public Water Providers

Public Water Suppliers who participated in COGCC Rulemaking

- Arapahoe County Water and Wastewater Authority (ACWWA)
- Aurora Water
- City of Brighton
- City of Commerce City
- East Cherry Creek Valley Water and Sanitation District (ECCV)
- Greatrock North Water and Sanitation District
- South Adams County Water and Sanitation District
- South Beebe Draw Metropolitan District
- South Metro Water Supply Authority
- Town of Castle Rock
- Town of Lochbuie
- United Water and Sanitation District

What is a “Public Water System”?

PUBLIC WATER SYSTEM (“PWS”) means a system to provide to the public water for human consumption through pipes or other constructed conveyances, if such systems have at least **15 service connections or regularly serve an average of at least 25 individuals daily at least 60 days out of the year or the entity that administers such a system.** The definition of PWS includes:

a. Any collection, treatment, storage, and distribution facilities under control of the PWS operator of such system and used primarily in connection with such system; and

b. Any collection or pretreatment storage facilities not under such control, which are used primarily in connection with such system.

The definition of PWS does not include any “special irrigation district,” as defined in the Colorado Water Quality Control Commission’s (“WQCC”) Colorado Primary Drinking Water Regulations, 5 C.C.R. § 1002-11:11.3(77) (“WQCC’s Primary Drinking Water Regulations”).

Changes to process

INCREASED PLANNING

- More than 20 planning documents for new surface permit called "Oil and Gas Development Plan" (OGDP)
- Alternative Location Analysis is required in many cases

NOTICE AND COMMENT

- Increased notice to 2,000 feet
- Longer comment period of at least 30 days
- Required consultation with local governments and public water suppliers

HEARINGS ON APPLICATIONS

- Currently, all location decisions are made administratively.
- Now there will be a hearing on new oil and gas locations with an opportunity to comment

Timeline

30 days prior to submitting application

- A Relevant and Proximate Local Government will be given at least 30 days' notice prior to the submission of an OGDP (Rule 302.e).
- The Relevant Local Government may request pre-application consultation (Rule 301.f).

Application Deemed Complete

- COGCC will send electronic notification to Relevant and Proximate Local Governments (Rule 303.d) and Operators will mail notice to both as well (Rule 303.e).
- The Operator must also offer "Formal Consultation" to both Relevant and Proximate Local Governments (Rule 302.g).
- a water provider (called a "Public Water System" or "PWS") will receive notice of a proposed oil and gas location application within ½ mile of a water well or within five miles downstream of a surface intake (Rule 303.e).

30-45 days for Public Comment

- Depending on the location, the public and local governments have 30 or 45 days to comment (Rule 303.d).
- (If a PWS is dissatisfied with the application and proposed protections, I would encourage my clients to meet with COGCC staff at this point.)

Timeline Continued

COGCC Director Recommends Decision

- The COGCC Director then recommends a decision and the notice of the recommended decision is sent to Relevant and Proximate Local Governments (Rule 306.c).
- At this point, the local governments have the ability to request to be a party to the hearing on the OGDP and must file at least 30 days before hearing (Rule 507).

Hearing a Minimum 60 Days Later

- Only the Relevant Local Government is granted automatic standing, others must demonstrated that they are an "Affected Person." (Rule 507). These hearings will likely be before a hearing officer.
- The hearing officer will put forward a written "recommended order" (Rule 520.b).

Exception must be field within 20 days of written recommended order

- If the local government does not agree with the recommended order, it must file an "exception" pursuant to (Rule 520.c).
- Responses are due within 14 days of exceptions. (Rule 520.c).
- An "exception hearing" goes before the full commission for de novo review.

Decision Rendered Within 30 days After Hearing

- The final agency decision by the COGCC is entered within 30 days and then may be challenged by judicial review. (Rule 501.d; 521.b).

Changes to Siting Requirements

Changes to siting

ALTERNATIVE LOCATION ANALYSIS (Rule 304)

(a) where the location is within 2,000 feet of building units,

(b) if a location is within 2,640 feet of a Public Water System supply well that is completed in a Type III Aquifer or is a groundwater under the direct influence of surface water well as defined in Rule 411.b.(1)

(c) Within 2,000 feet of a municipal or county boundary

(d) in floodplains,

(e) high priority habitat,

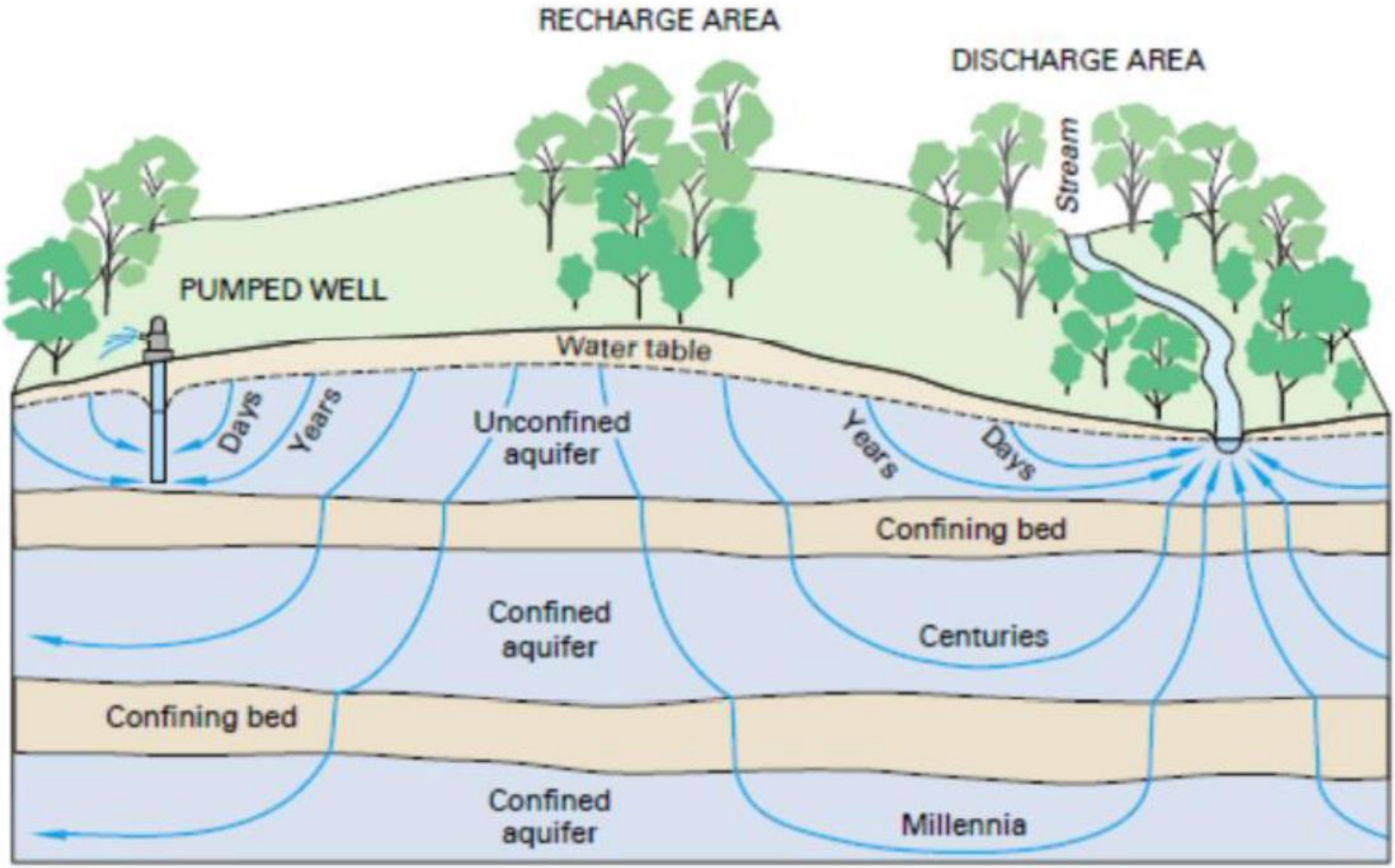
(f) where there is a surface owner protection bond.

Changes to siting

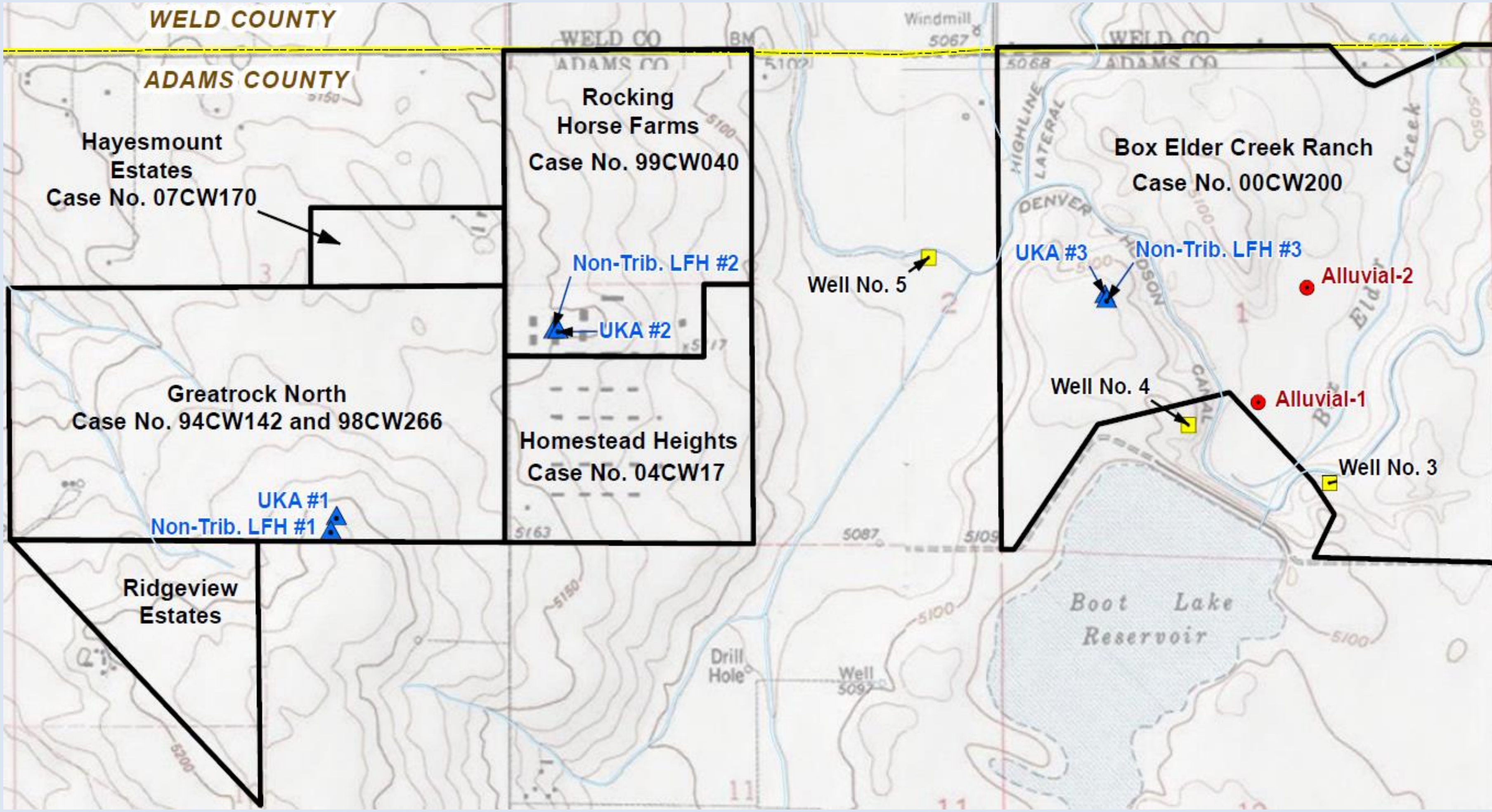
Setbacks

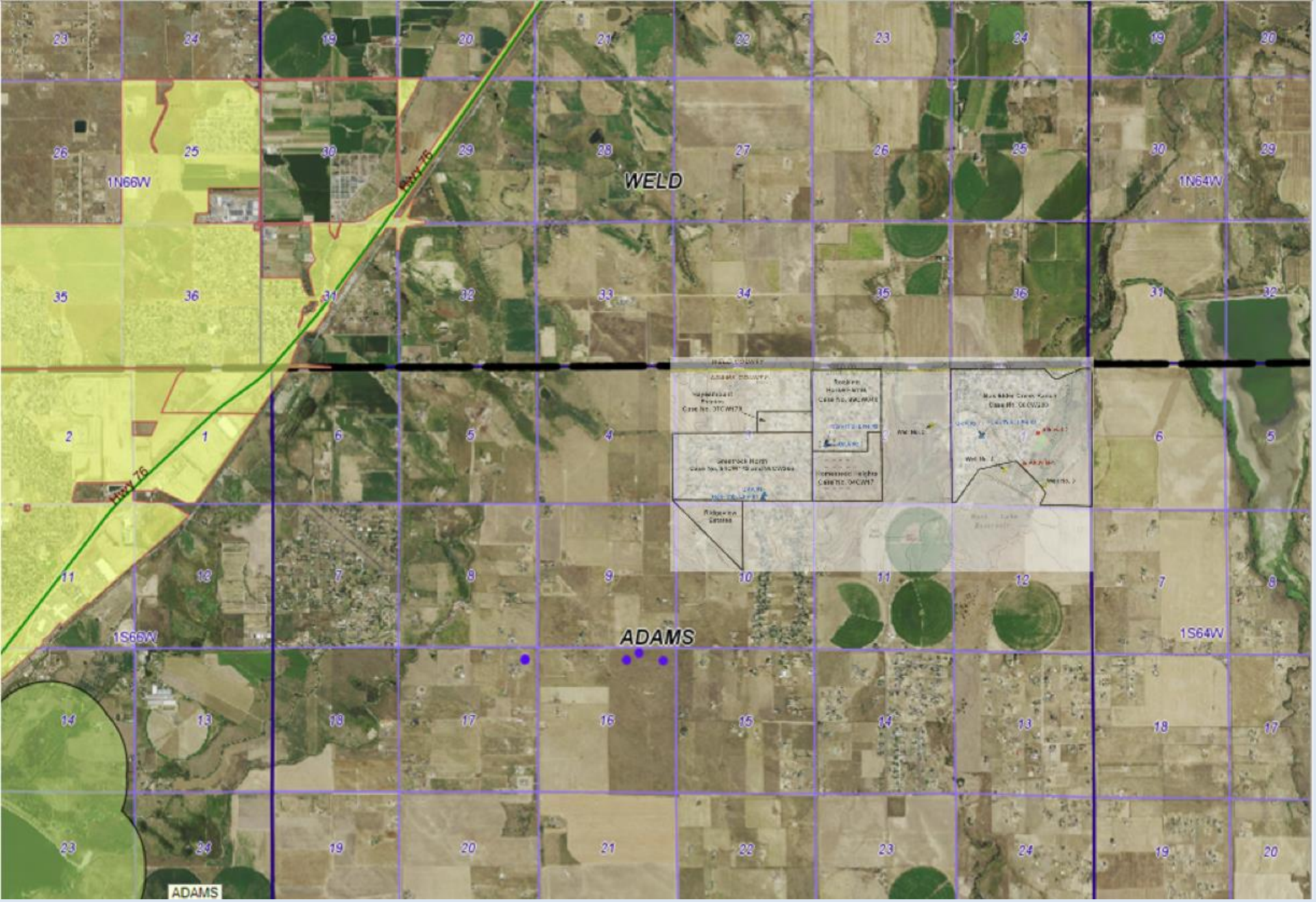
- **2,000-foot setback from school facilities** – current and future school property
- **500-foot setback from homes**
  - Waivable by impacted residents
- **500-2,000 foot setback from homes**
  - Less than 2,000 feet allowed through COGCC hearing if operator can demonstrate “substantially equivalent protections”

- **1,000-foot setback from public source water intakes and wells**



1,000-foot setback from Public Water Supply alluvial wells and surface water intakes


WELD COUNTY
ADAMS COUNTY
Hayesmount Estates Case No. 07CW170
Rocking Horse Farms Case No. 99CW040
Non-Trib. LFH #2
UKA #2
Greatrock North Case No. 94CW142 and 98CW266
Homestead Heights Case No. 04CW17
UKA #1
Non-Trib. LFH #1
Ridgeview Estates
Well No. 5
Box Elder Creek Ranch Case No. 00CW200
UKA #3
Non-Trib. LFH #3
Alluvial-2
Alluvial-1
Well No. 4
Well No. 3
Boot Lake Reservoir
WELD CO
ADAMS CO
Windmill
Drill Hole
Well
HIGHLINE LATERAL
DENVER HUDSON CANAL
Box Elder Creek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1N64W
1S66W
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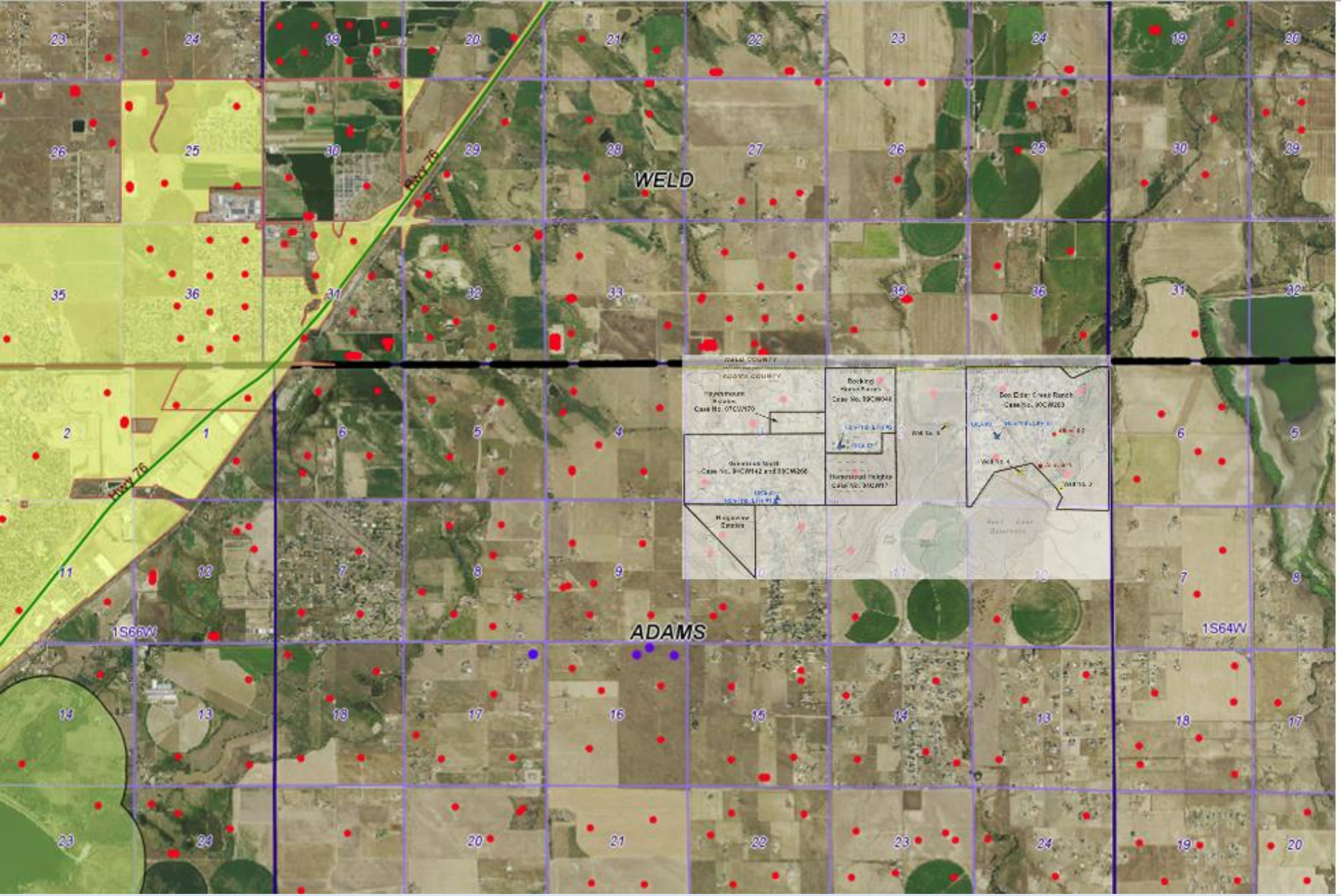
Hwy 76
Hwy 76
ADAMS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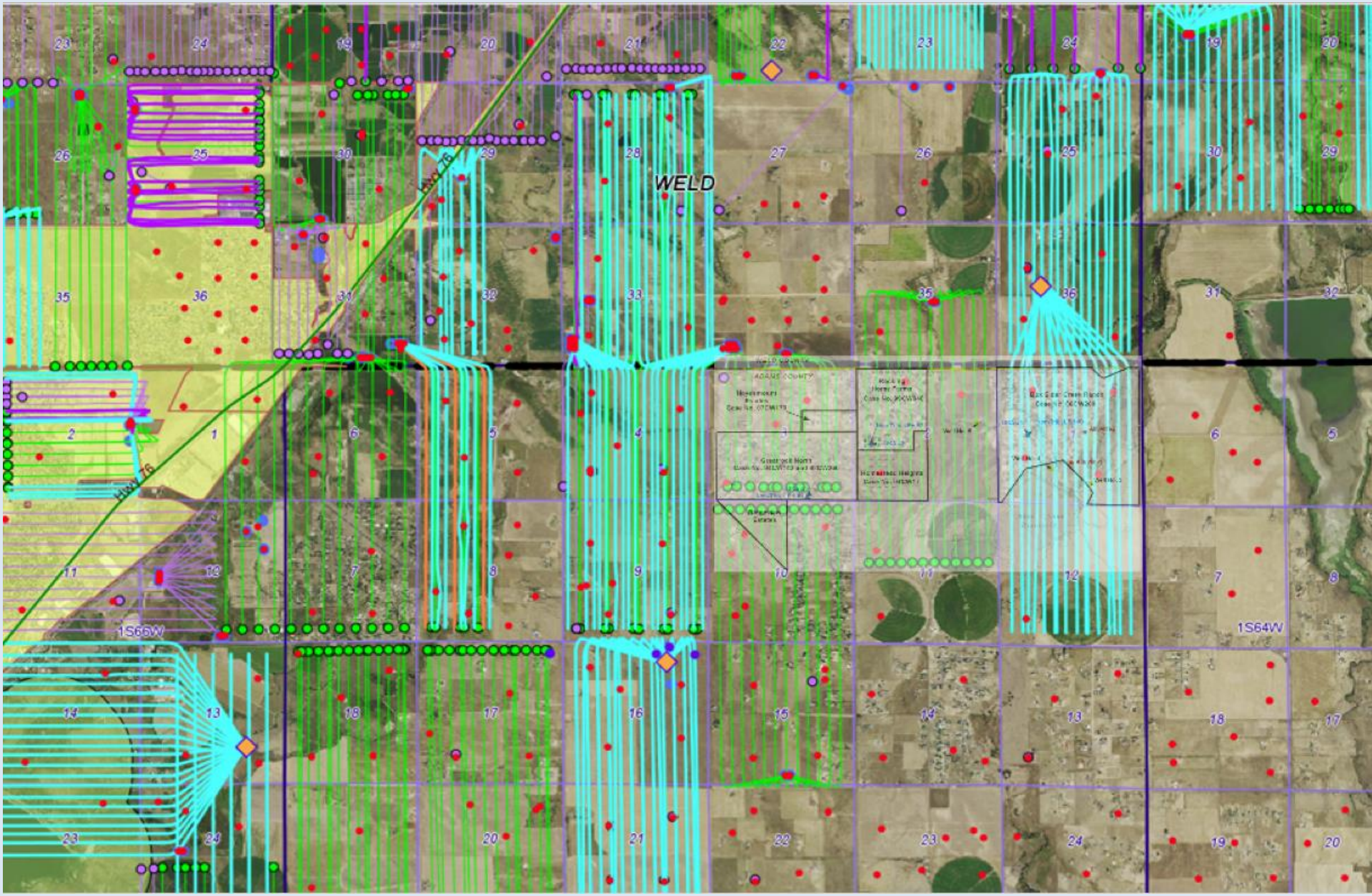
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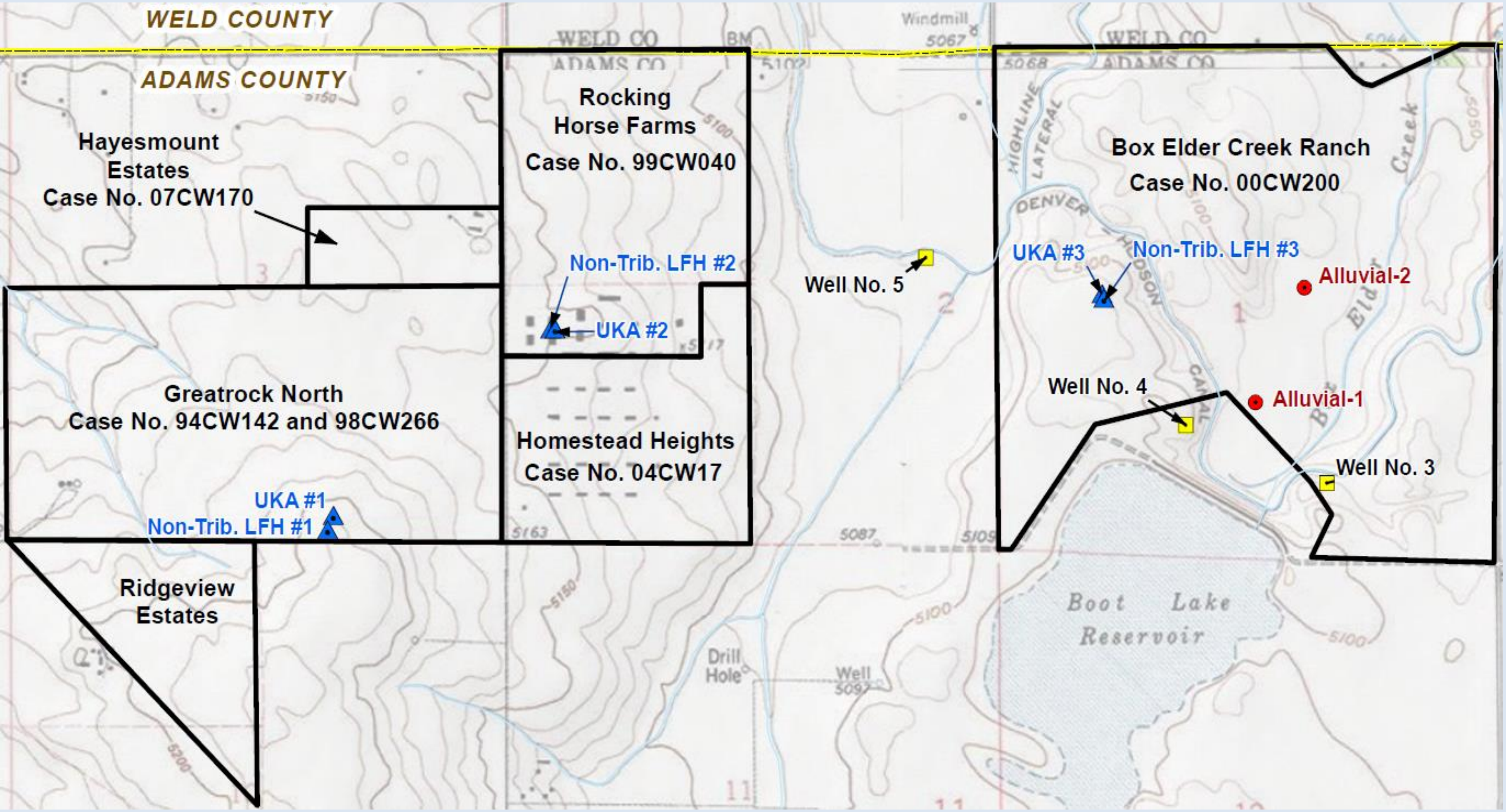

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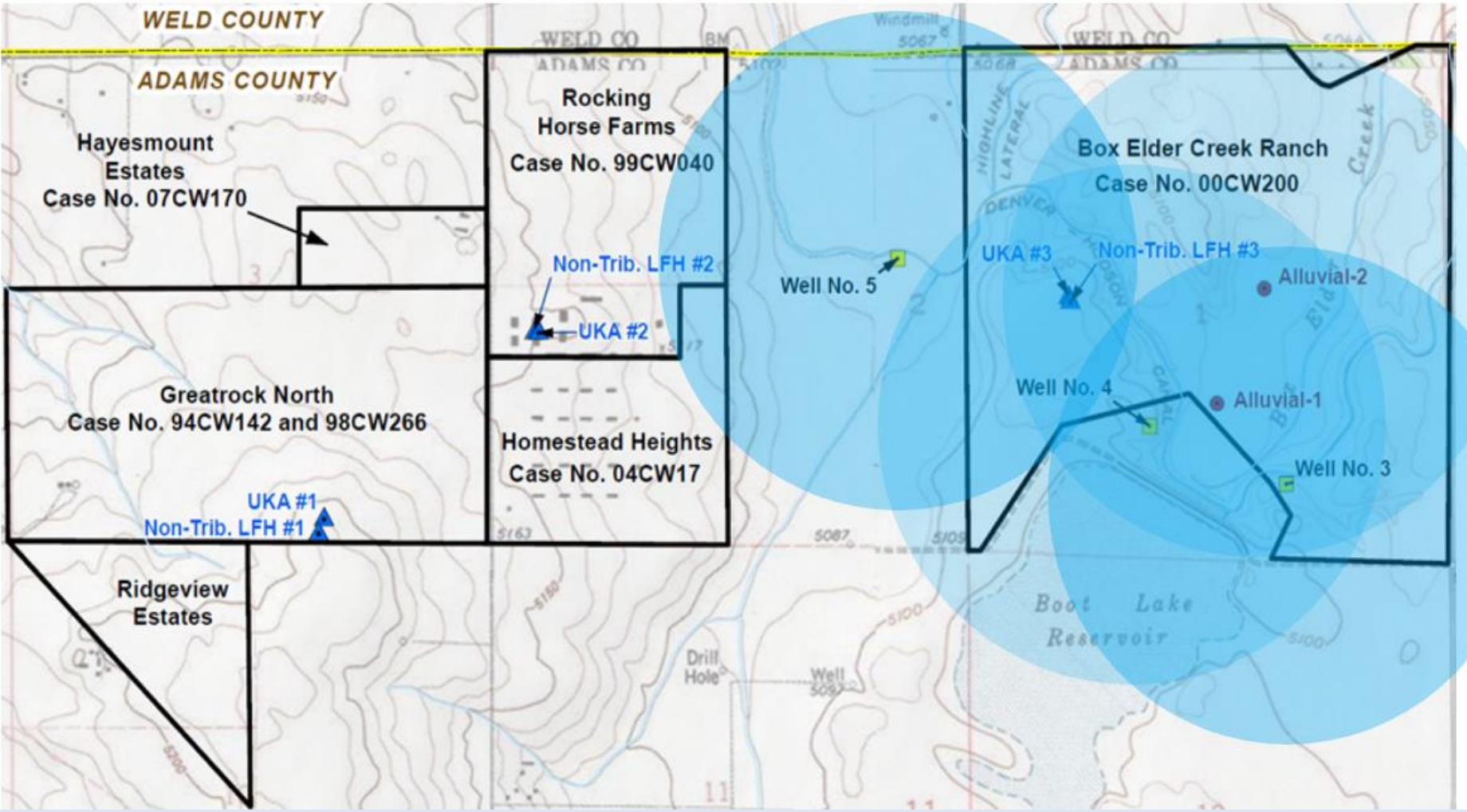
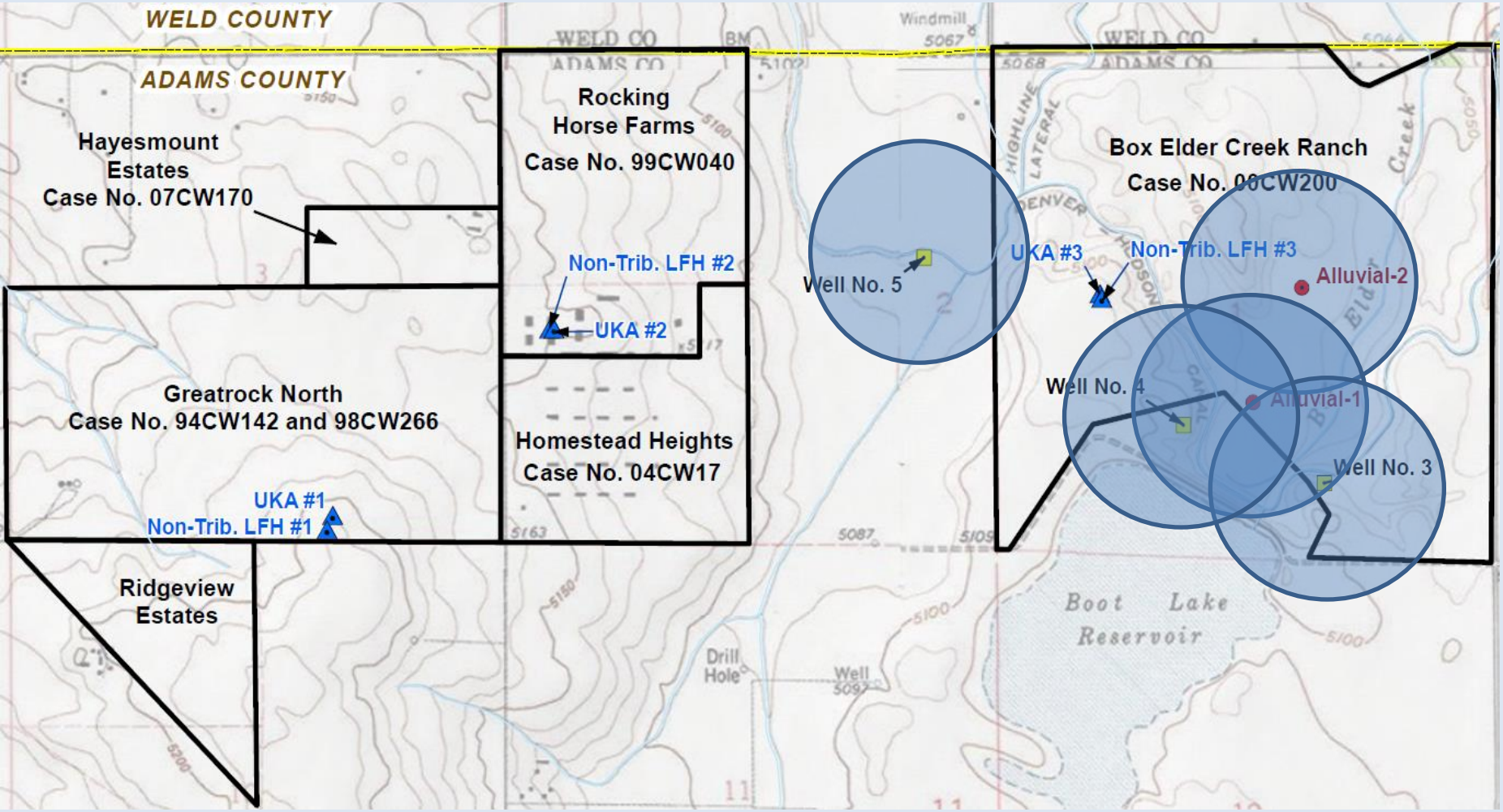


½ mile notice and alternative location analysis requirement



1,000 foot setback requirement

Increased Protections

Changes to protections

WATER QUALITY PROTECTION – Rule 411

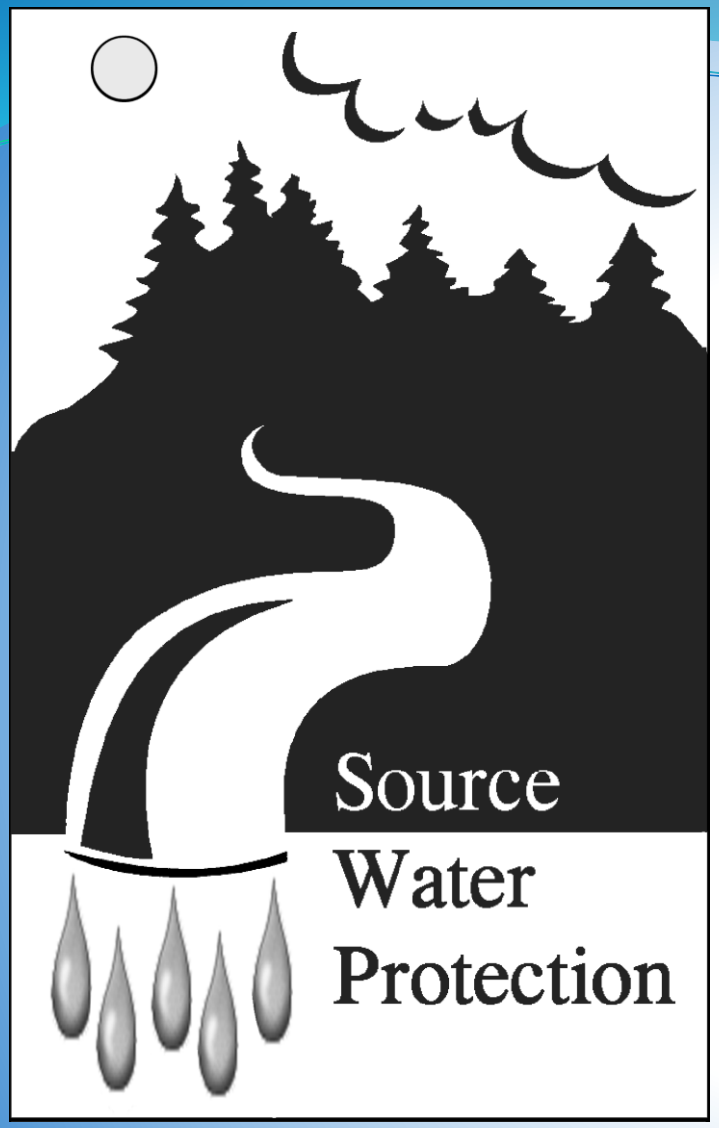
- Increased setbacks from 300 feet to 1,000 feet from surface water
- Created setbacks from alluvial ground water wells (both GUDI and Type III water wells
- Public water system can require groundwater monitoring within 2,640 feet of shallow public water supply wells
- Reportable spills within 2,640 feet of a public water supply well must be reported to public water system

Changes to protections

Rule 437

- Prohibited 22 dangerous chemicals in hydraulic fracturing fluid

  Rogers J.D., Burke T.L., Osborn S.G., Ryan J.N. A framework for identifying organic compounds of concern in hydraulic fracturing fluids based on their mobility and persistence in groundwater. Environ. Sci. Technol. Lett., 2 (2015), pp. 158–164



Source Water Assessment and Protection:

Like Oil and Water Colorado/Denver Bar Association

April 8, 2021

Paul Hempel
Source Water Protection Specialist

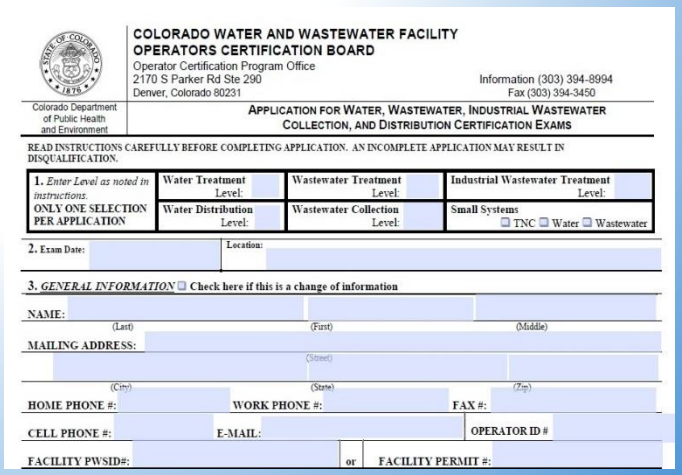
Colorado Rural Water Association

CRWA's Mission:

"Provide professional training, technical assistance and political representation to rural and small communities as they endeavor to maintain industry standards, meet regulatory deadlines and attain multi-level certifications of their water and wastewater systems operators.

CRWA:

38 Years of Water & Wastewater Operator Training and Certification and Public Water System Assistance



COLORADO WATER AND WASTEWATER FACILITY
OPERATORS CERTIFICATION BOARD

Operator Certification Program Office
2170 S Parker Rd Ste 290
Denver, Colorado 80231

Information (303) 394-8994
Fax (303) 394-3450

Colorado Department of Public Health and Environment

APPLICATION FOR WATER, WASTEWATER, INDUSTRIAL WASTEWATER COLLECTION, AND DISTRIBUTION CERTIFICATION EXAMS

READ INSTRUCTIONS CAREFULLY BEFORE COMPLETING APPLICATION. AN INCOMPLETE APPLICATION MAY RESULT IN DISQUALIFICATION.

1. *Enter Level as noted in instructions.* ONLY ONE SELECTION PER APPLICATION	Water Treatment Level:	Wastewater Treatment Level:	Industrial Wastewater Treatment Level:
	Water Distribution Level:	Wastewater Collection Level:	Small Systems ☐ TNC ☐ Water ☐ Wastewater

2. Exam Date: Location:

3. *GENERAL INFORMATION* ☐ Check here if this is a change of information

NAME: (Last) (First) (Middle)

MAILING ADDRESS: (Street)

(City) (State) (Zip)

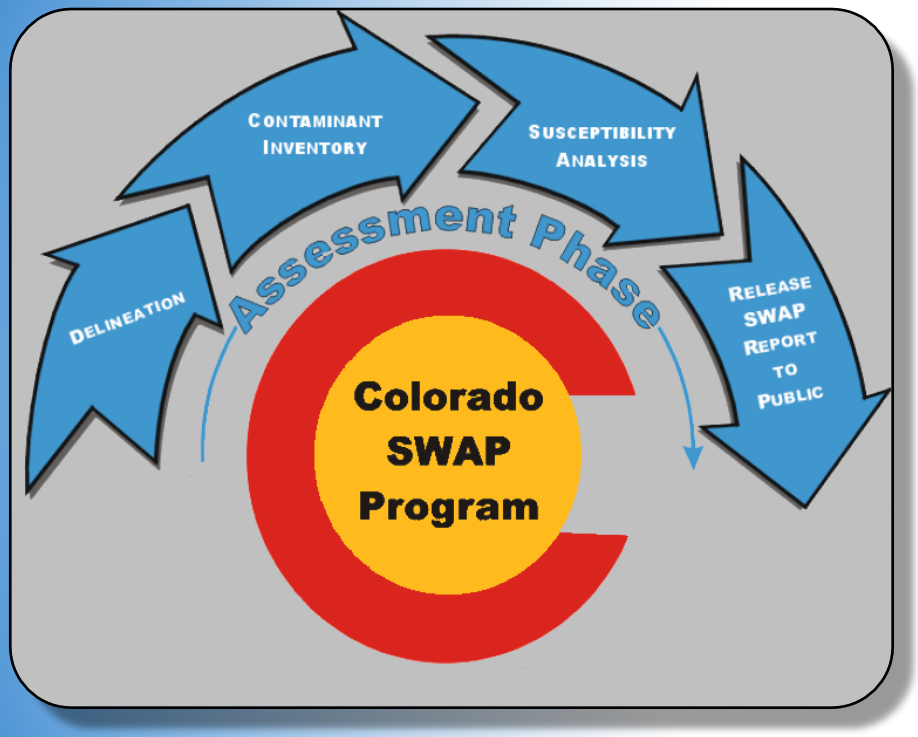
HOME PHONE #: WORK PHONE #: FAX #:

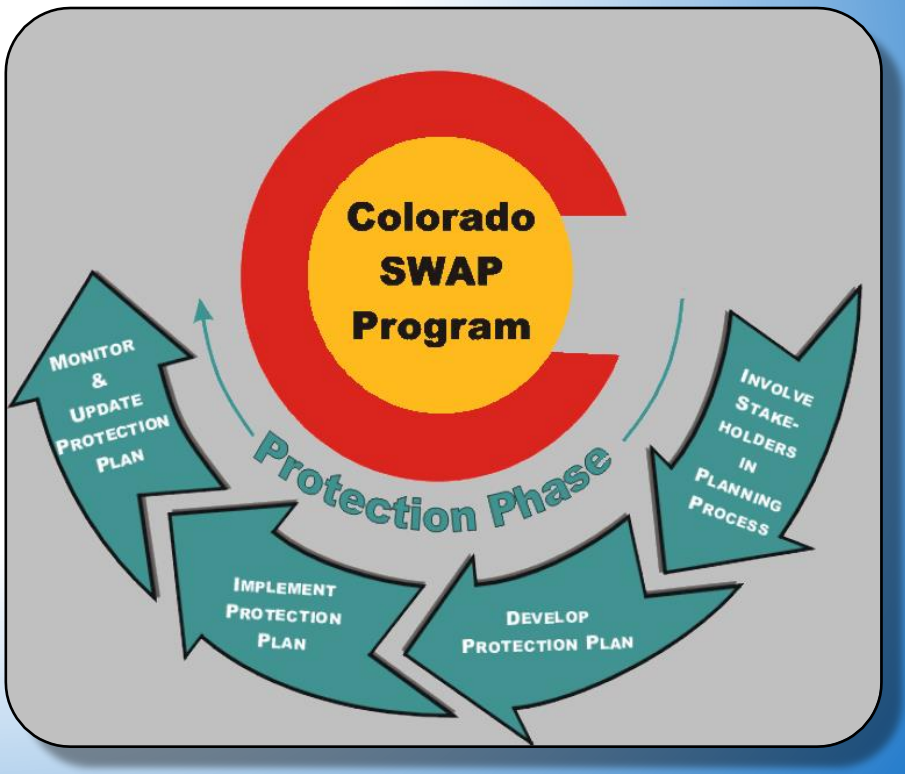
CELL PHONE #: E-MAIL: OPERATOR ID #

FACILITY PWSID#: or FACILITY PERMIT #:

Colorado's Source Water Assessment and Protection (SWAP) Program

Colorado's SWAP Program





Colorado Rural Water Association

Source Water Protection: The first barrier to providing safe drinking water

Source Water Protection

Water Treatment System

Secure Distribution System

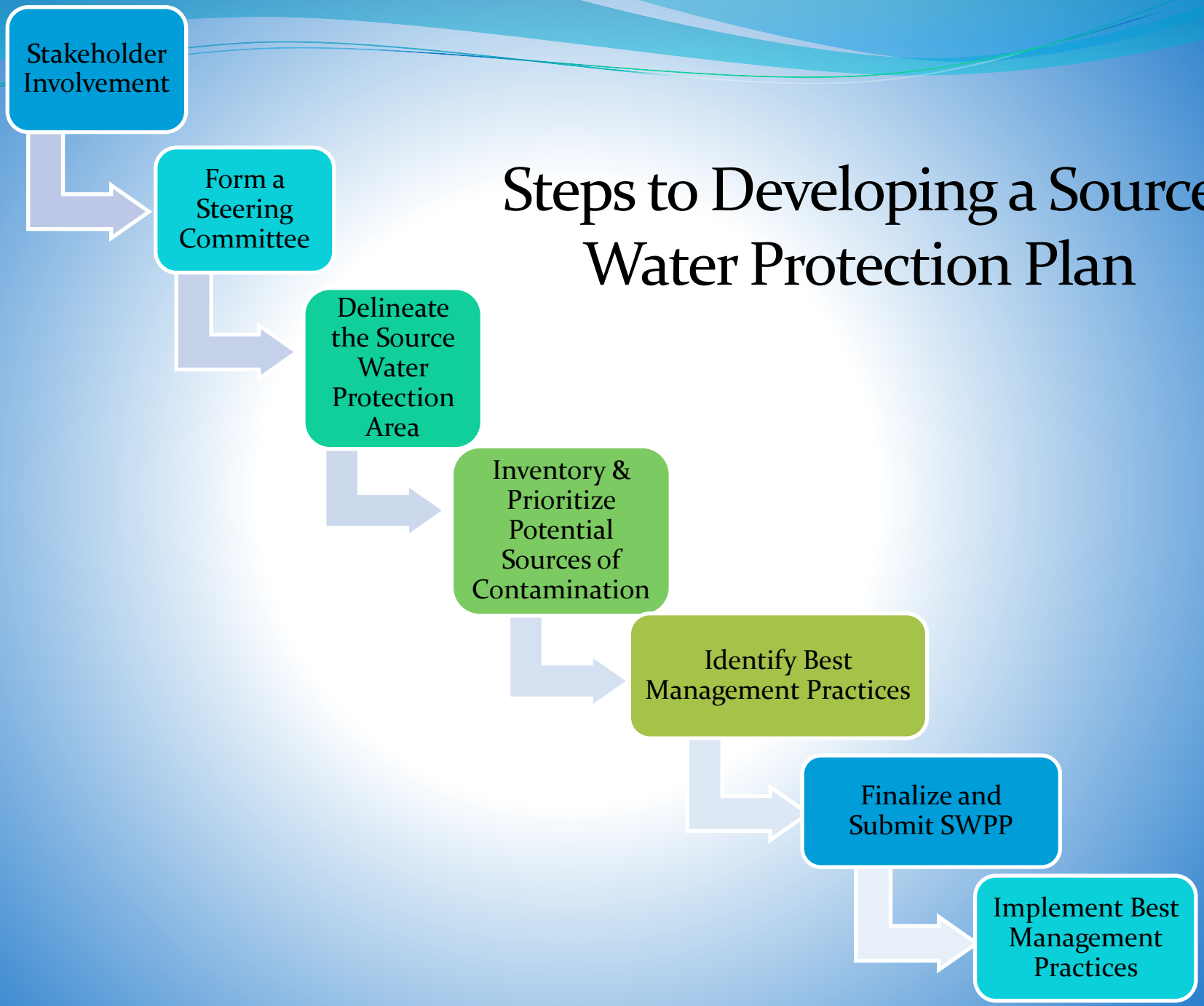
Water Quality Testing

Safe, Clean Drinking Water

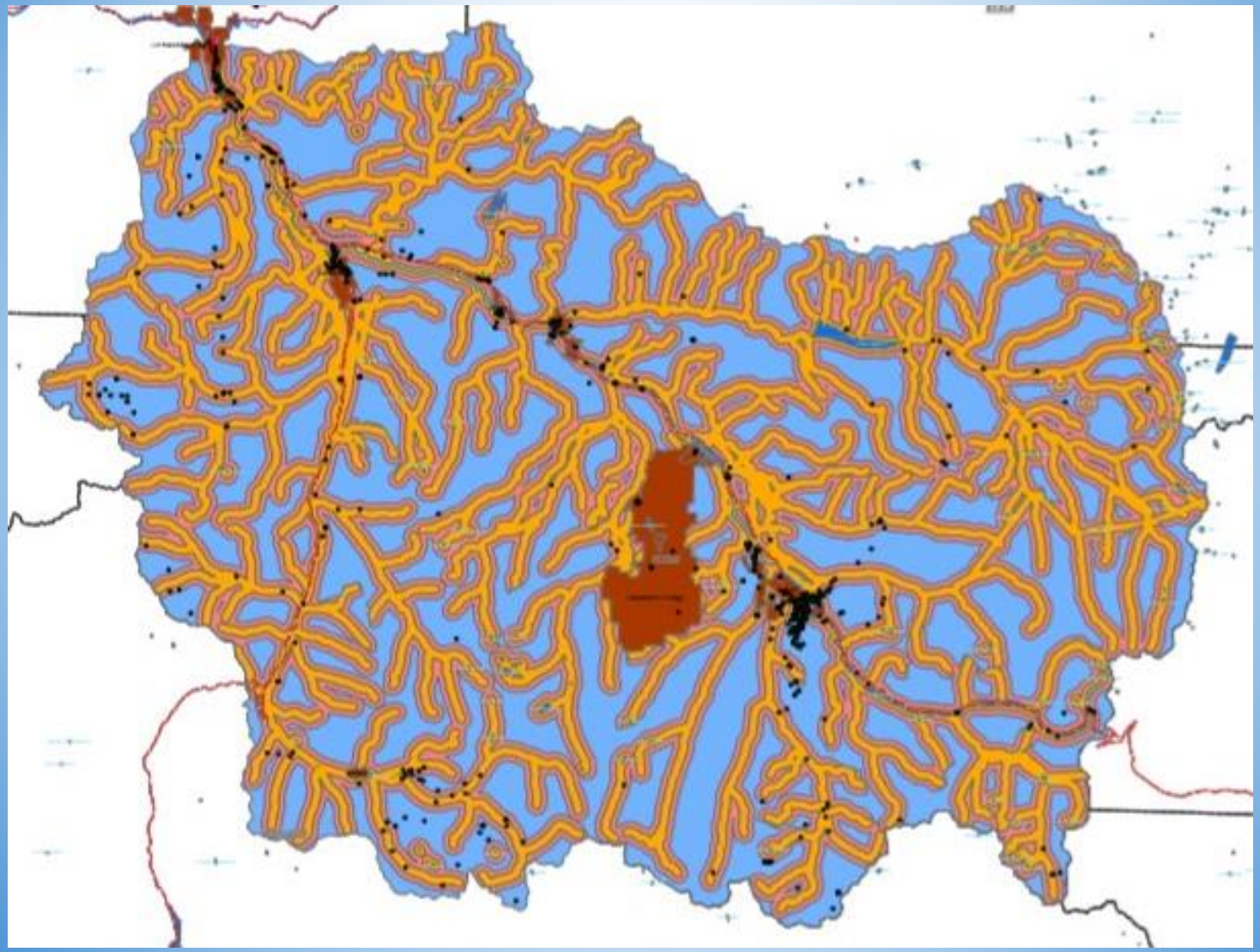
Potential Contaminant Sources

Drinking Water Supply

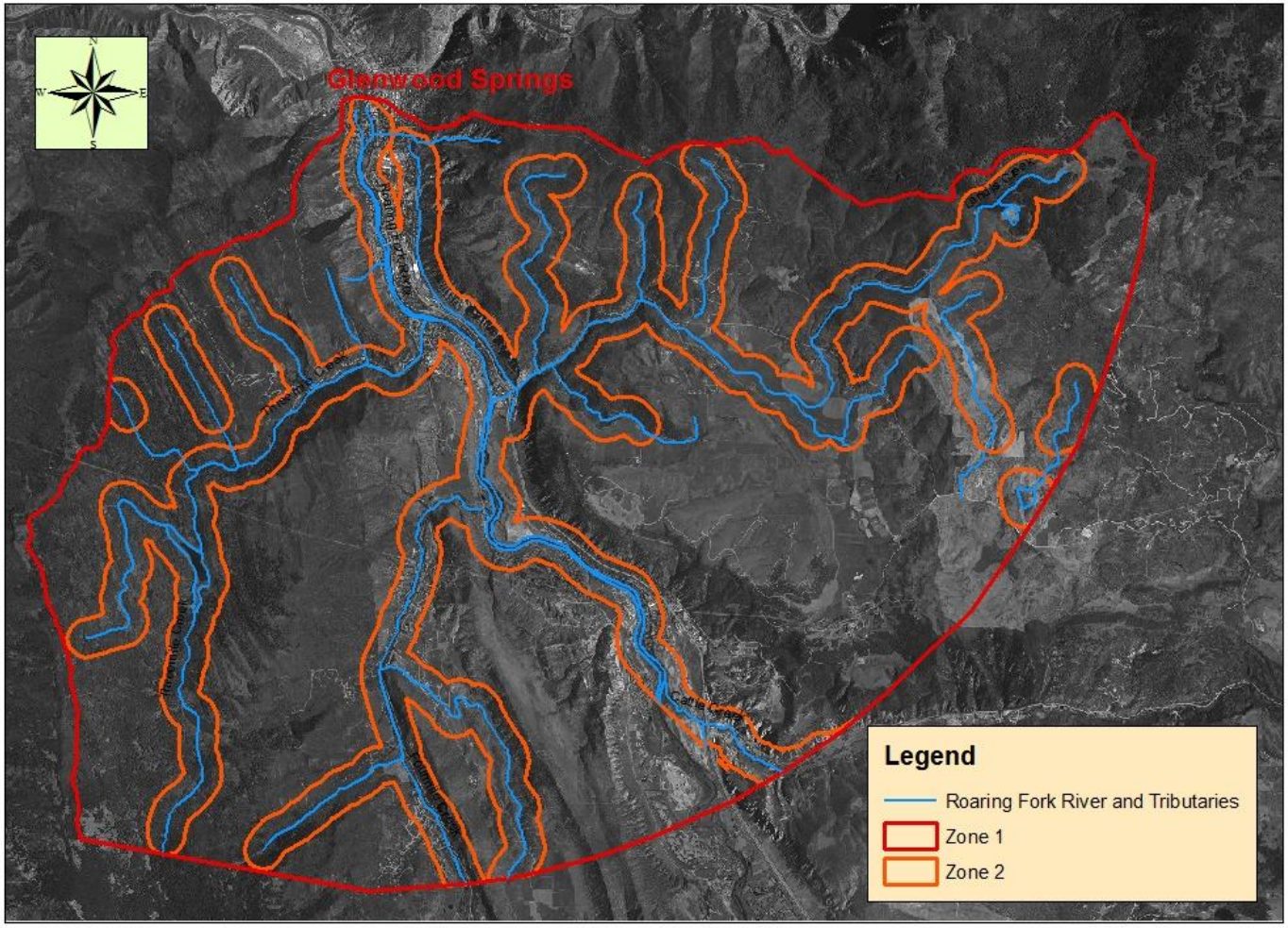
Steps to Developing a Source Water Protection Plan



CDPHE Original Assessment Delineation



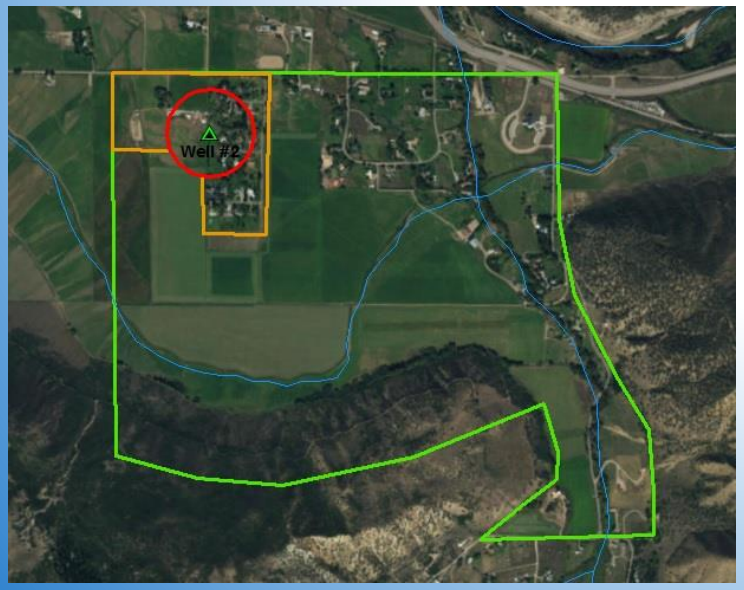
Delineated Source Water Protection Areas



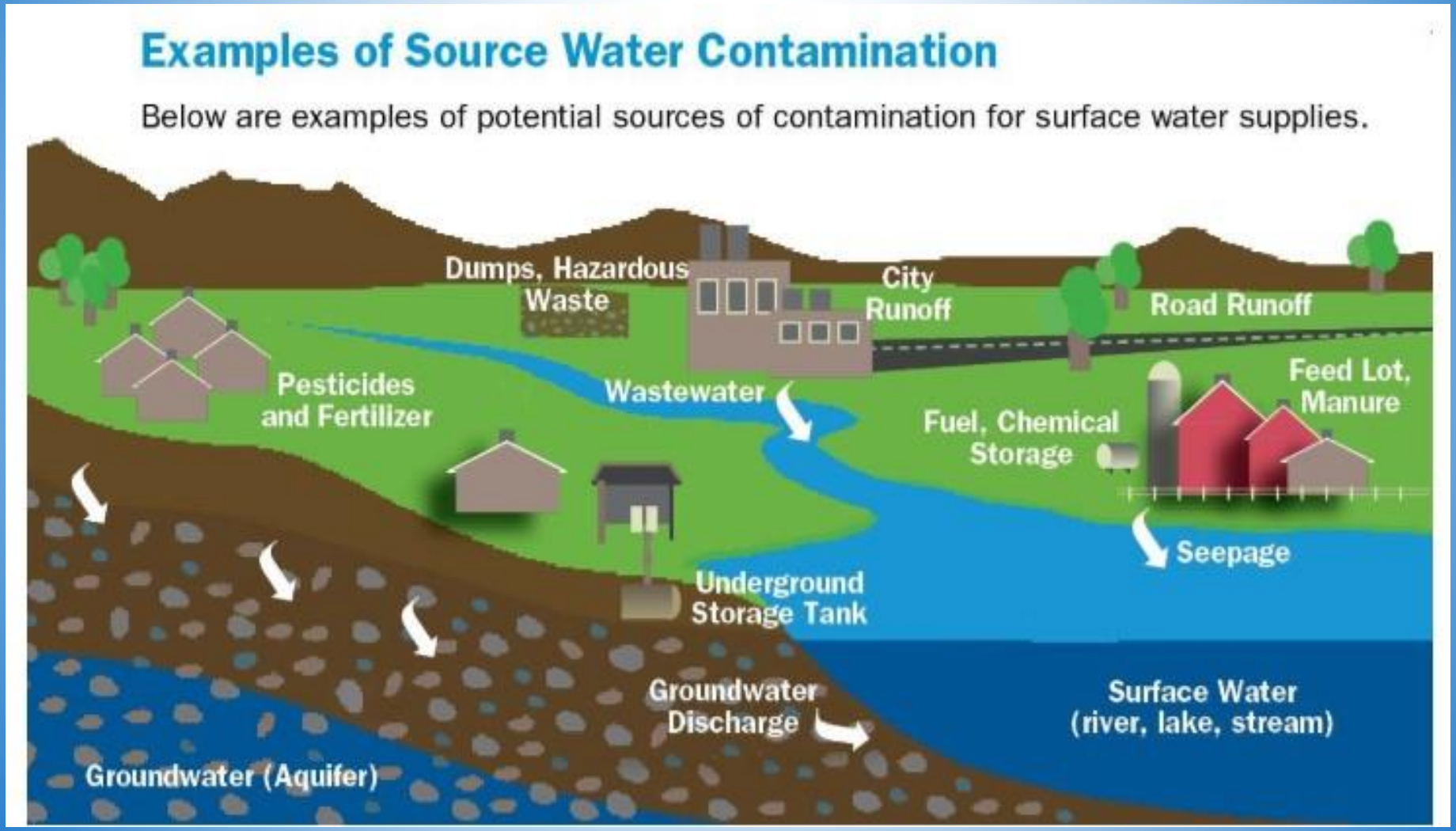

2061

CDPHE Original Assessment Delineation

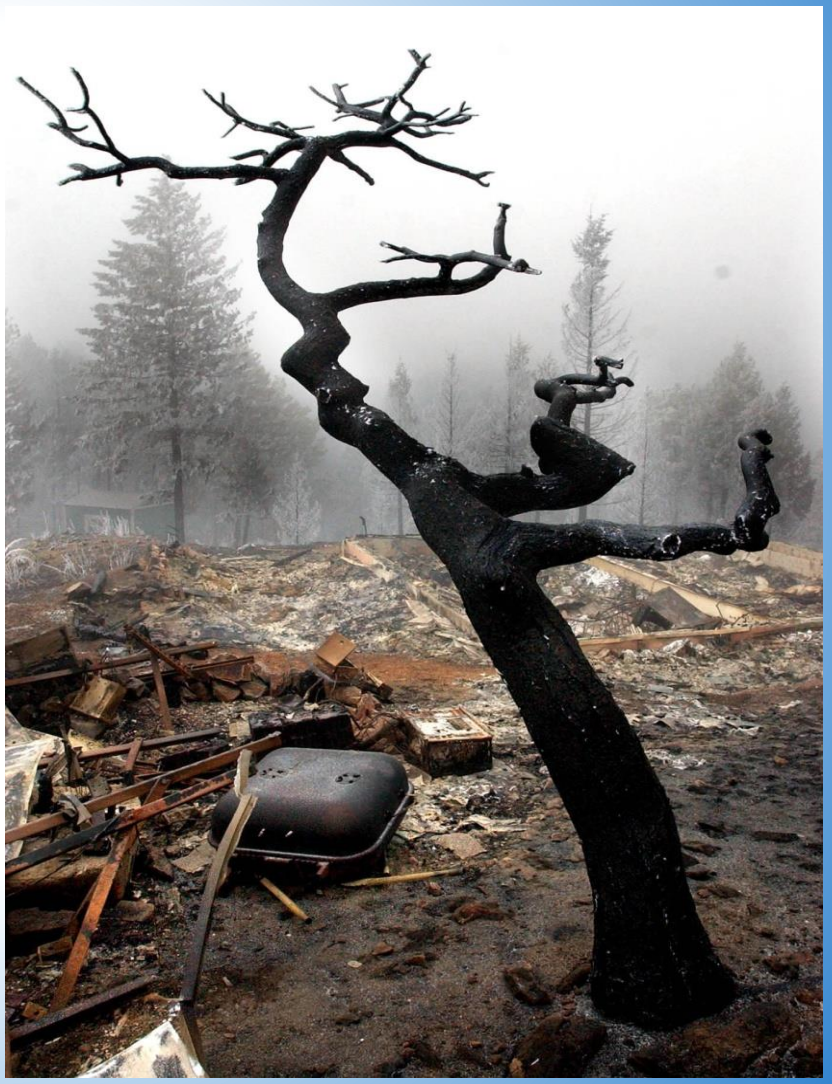
Delineate Source Water Protection Areas



Potential Sources of Contamination

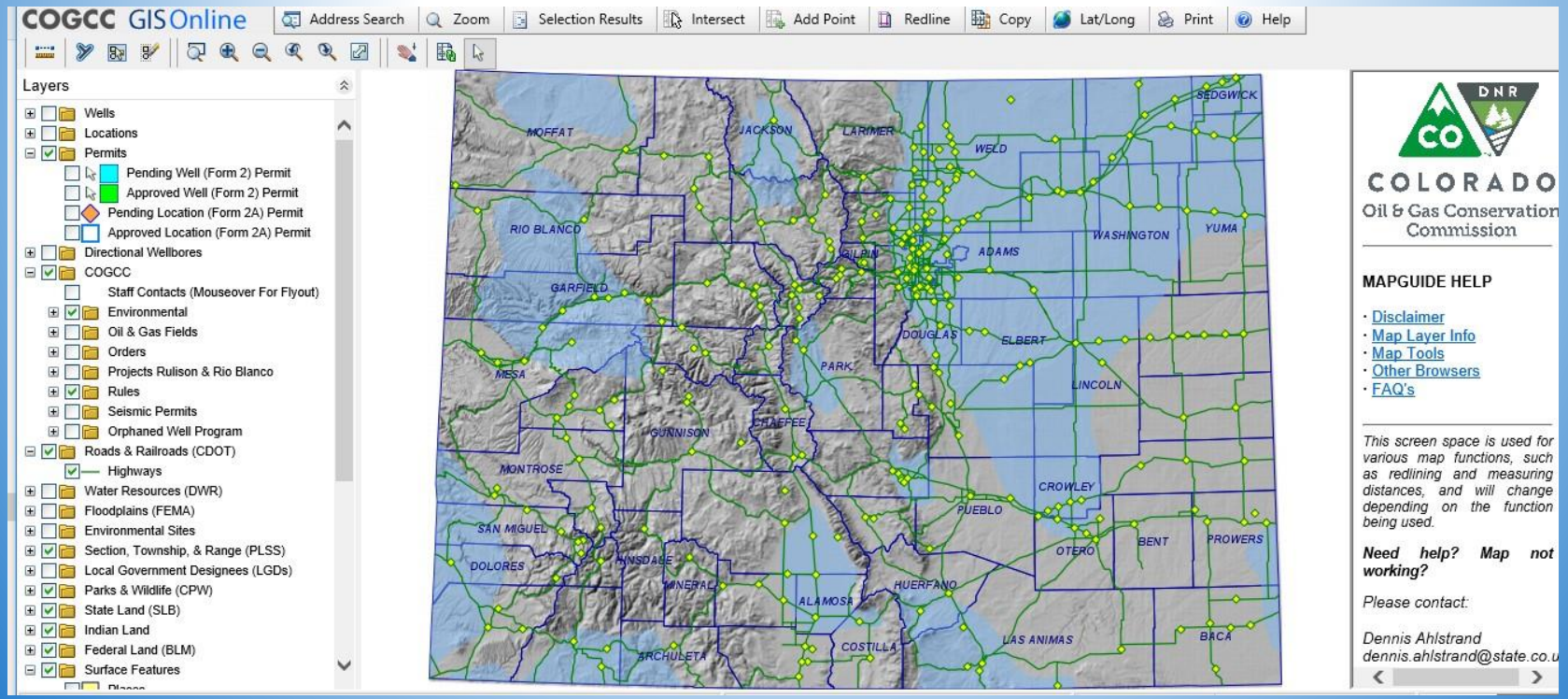


Wildfires



Oil and Gas Development


HOME
SUPPORT
CONTACT
LOGIN
COLORADO STATE FOREST SERVICE
COLORADO WILDFIRE
RISK ASSESSMENT PORTAL
Explore. Identify. Engage.


COGCC GIS Online
Address Search
Zoom
Selection Results
Intersect
Add Point
Redline
Copy
Lat/Long
Print
Help
Layers
Wells
Locations
Permits
Pending Well (Form 2) Permit
Approved Well (Form 2) Permit
Pending Location (Form 2A) Permit
Approved Location (Form 2A) Permit
Directional Wellbores
COGCC
Staff Contacts (Mouseover For Flyout)
Environmental
Oil & Gas Fields
Orders
Projects Rulison & Rio Blanco
Rules
Seismic Permits
Orphaned Well Program
Roads & Railroads (CDOT)
Highways
Water Resources (DWR)
Floodplains (FEMA)
Environmental Sites
Section, Township, & Range (PLSS)
Local Government Designees (LGDs)
Parks & Wildlife (CPW)
State Land (SLB)
Indian Land
Federal Land (BLM)
Surface Features
MOFFAT
JACKSON
LARIMER
WELD
SEDGWICK
RIO BLANCO
GARFIELD
GILPIN
ADAMS
WASHINGTON
YUMA
DOUGLAS
ELBERT
PARK
MESA
LINCOLN
CHAFFEE
GUNNISON
MONTROSE
CROWLEY
PUEBLO
SAN MIGUEL
OTERO
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PROWERS
DOLORES
HINSDALE
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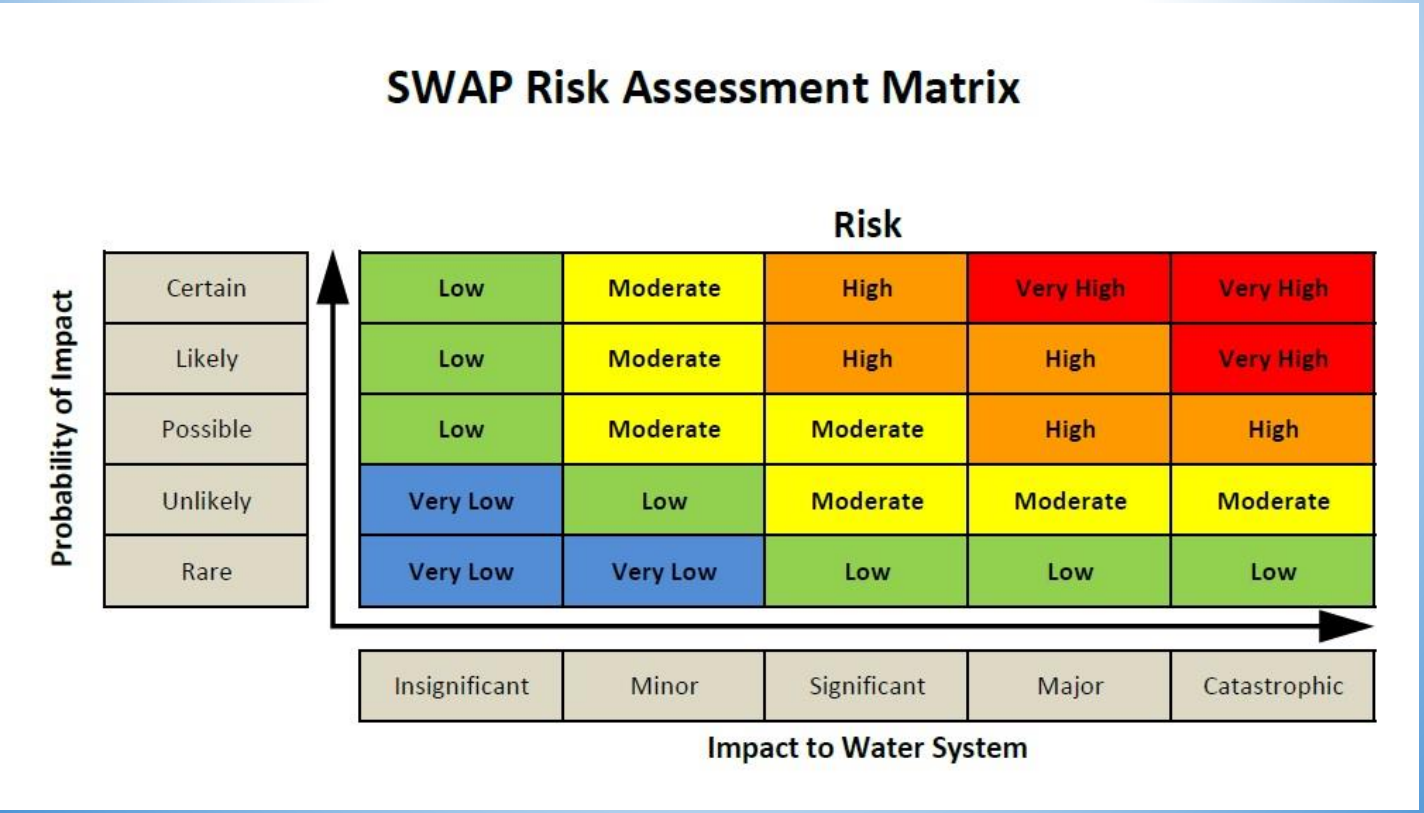
Other Browsers
FAQ's
This screen space is used for various map functions, such as redlining and measuring distances, and will change depending on the function being used.
Need help? Map not working?
Please contact:
Dennis Ahlstrand
dennis.ahlstrand@state.co.u

Prioritize Potential Contaminants

- CRWA's SWAP Risk Matrix assigns a risk priority to each potential contaminant
  - Probability of Impact
  - Impact to Water System



Risk Assessment/Prioritization Worksheet

Potential Sources of Contamination and Issues of Concern Prioritization Table						
Potential Source of Contamination or Issue of Concern	Proximity (SWPA Zone)	Controllable (Direct, Indirect, No)	Impact to Water System (Insignificant, Minor, Significant, Major, Catastrophic)	Probability of Impact (Rare, Unlikely, Possible, Likely, Certain)	Risk (Very Low, Low, Moderate, High, Very High)	Priority Ranking
Wildfire - Upper Watershed/USFS boundary	3	No	Catastrophic	Certain	Very High	1
Wildfire - Lower Watershed incl. BLM boundary	2	Indirect	Significant	Certain	High	1
Undeveloped/Dispersed Campsites - LEDE Reservoir	3	Indirect	Minor	Possible	Moderate	4
Undeveloped/Dispersed Campsites - Gypsum Creek	3	Indirect	Significant	Likely	High	3
Above Ground Storage Tanks	3	Direct	Significant	Likely	High	2
Illegal Dumping - Cottonwood Pass	3	No	Minor	Unlikely	Low	4
Road Erosion and Maintenance - Cotw Pass/BLM	3	Direct	Minor	Unlikely	Low	5
Road Erosion and Maintenance - Red Hill/BLM	3	Indirect	Significant	Likely	High	2
Residential Property Storage Lot	2	Direct	Minor	Unlikely	Low	4
Biomass Ash Oile	2	Direct	Minor	Unlikely	Low	4
Noxious Weed Treatment - Chem Application/Priv	2	Direct	Significant	Likely	High	2
Noxious Weed Treatment - Chem Application/Publ	3	Indirect	Significant	Likely	High	2
Septic Systems	2 & 3	Direct	Significant	Possible	Moderate	3

Identify Best Management Practices

Homeowner's GUIDE

To Protecting Water Quality and the Environment

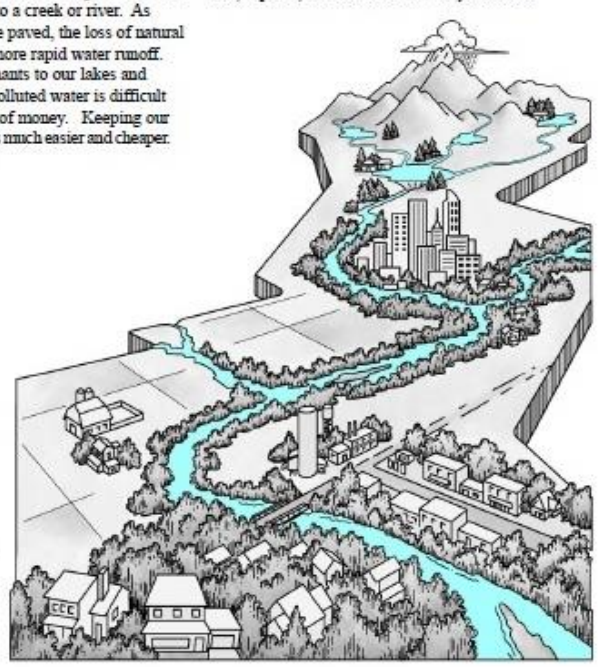
XCM-223

It's a fact of modern life - many of our activities have altered the natural cycles of water movement and purification that give us clean water. And while our individual homes may contribute only small amounts of pollutants, they add up to bigger problems downstream.

The watershed in which you live probably consists of houses, businesses and undeveloped land. The water from this area drains to a creek or river. As cities develop and streets are paved, the loss of natural vegetation results in much more rapid water runoff. This runoff carries contaminants to our lakes and streams. Cleaning up this polluted water is difficult and can cost taxpayers a lot of money. Keeping our water clean in the first place is much easier and cheaper.

In the Home

The typical home contains an amazing assortment of cleaning products, paints, solvents, oils, fertilizers and pest control products. If used according to their labels, they can make our lives easier. But many of these products fall within the Environmental Protection Agency's definition of hazardous substances because they can catch fire, explode, corrode or because they are toxic.



Colorado State University Cooperative Extension

Do Your Part, Be SepticSmart:

The Do's and Don'ts of Your Septic System

Learn these simple steps to protect your home, health, environment and property value:

Protect It and Inspect It:

Do:

- Have your system inspected (in general) every three years by a licensed contractor and have the tank pumped, when necessary, (generally every three to five years.

Think at the Sink:

Don't:

- Pour cooking grease or oil down the sink or toilet.
- Rinse coffee grounds into the sink.
- Pour household chemicals down the sink or flush them.

Do:

- Eliminate or limit the use of a garbage disposal.
- Properly dispose of coffee grounds & food.
- Put grease in a container to harden before discarding in the trash.

Don't Overload the Commode:

Don't:

- Flush non-degradable products or chemicals, such as feminine hygiene products, condoms, dental floss, diapers, cigarette butts, cat litter, paper towels, pharmaceuticals.

Do:

- Dispose of these items in the trash can!

Shield Your Field:

Don't:

- Park or drive on your drainfield. The weight can damage the drain lines.
- Plant trees or shrubs too close to your drainfield, roots can grow into your system and clog it.

Do:

- Consult a septic service professional to advise you of the proper distance for planting trees and shrubs, depending on your septic tank location.

Don't Strain Your Drain:

Don't

- Concentrate your water use by using your dishwasher, shower, washing machine, and toilet at the same time. All that extra water can really strain your septic system.

Do:

- Stagger the use of water-generating appliances. This can be helpful especially if your system has not been pumped in a long time.
- Become more water efficient by fixing plumbing leaks and consider installing bathroom and kitchen faucet aerators and water-efficient products.

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

EPA 832-R-13-002

Wildfire Mitigation

Watershed District Ordinance

Carbondale, Colorado, Code of Ordinances >> - SUPPLEMENT HISTORY TABLE >> Title 13 - PUBLIC UTILITIES* >> Chapter 13.32 - POLLUTION OF WATER AND WASTEWATER SYSTEMS >>

Chapter 13.32 - POLLUTION OF WATER AND WASTEWATER SYSTEMS

Sections:

13.32.010 - Pollution of water.

A. It is unlawful for any person to discharge or allow the discharge in the town's water system of any substance or material which will in any manner injure or obstruct the system, or which will contaminate or pollute the water, or in any manner, pollute, obstruct or contaminate the water in said waterworks.

B. As used in this title, the terms "pollute," "contaminate," and "contaminated" include the manmade, man-induced, animal-induced, or natural alteration of the physical, chemical, biological, and radiological integrity of water.

(Ord. 11-1991 (part)).

13.32.020 - Pollution of wastewater system.

The discharge of nonacceptable wastes into the town wastewater system, whether directly or indirectly, is prohibited, and where investigation reveals the presence of nonacceptable wastes emanating from any lot, land, building or premises, the owner, lessor, renter or occupant of such lot, land, building or premises shall be required at his own expense to treat, neutralize, remove, or in other ways to prepare the noxious substance therein to the satisfaction of the town in order to convert the same into acceptable waste. The following are deemed to be nonacceptable wastes:

A. Any liquid or vapor having a temperature higher than 105 degrees Fahrenheit;

B. Any water or waste having a five-day biological oxygen demand which may contain more than one thousand parts per million by weight averaged during any twelve-hour period and does not exceed 250 ppm at wastewater plant influent sampling point;

C. Any gasoline, benzine, fuel oil, flammable or explosive liquid, solvent or gas;

D. Any residential garbage which has not been properly shredded by a residential garbage disposal;

E. Any garbage from any commercial operations, including restaurants and supermarkets;

TOWN OF COLLBRAN, COLORADO
ORDINANCE NO. 8
SERIES OF 2010

A AN ORDINANCE OF THE TOWN OF COLLBRAN, COLORADO ADOPTING A NEW CHAPTER 9.15, "WATERSHED PROTECTION" TO TITLE 9 OF THE COLLBRAN MUNICIPAL CODE

WHEREAS, the Town of Collbran operates its water and sewer facilities using water rights derived in part from and collected by the Town in Buzzard Creek, Plateau Creek and Grove Creek; and

WHEREAS, the Town adopted the Plateau Valley Source Water Protection Plan dated March 2008 prepared by the Colorado Rural Water Association, which was prepared following numerous stakeholder meetings and identified the various impacts of activities to the Town's water resources including agricultural practices, oil and gas development, storage tanks, septics, transportation on roads, land uses, public lands, private wells, and residential practices; and

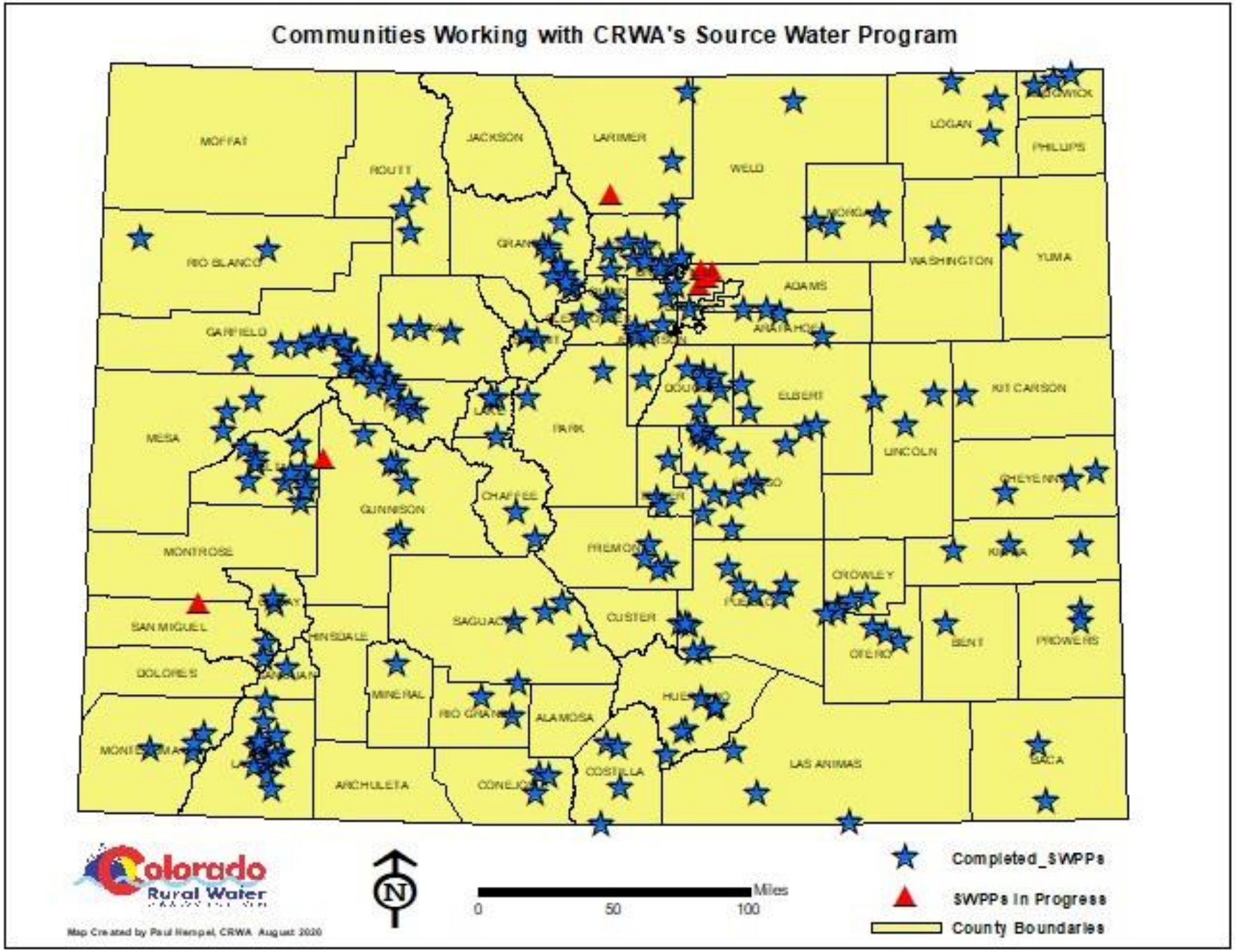
WHEREAS, pursuant to C.R.S. ' 31-15-707(1)(b), the Collbran Board of Trustees has the authority enact an ordinance to carry out its power to maintain and protect its watershed and waterworks from injury and water pollution, and for purposes of this authority, the Town=s jurisdiction extends over the territory occupied by its waterworks and all reservoirs, streams, trenches, pipes, and drains used in and necessary for the construction, maintenance, and operation of the same and over the stream or source from which the water is taken for five miles above the point from which it is taken; and

WHEREAS, the Collbran Board of Trustees wishes to exercise its statutory authority to create a watershed protection district within and without its boundaries and to adopt regulations pertaining to activities in that defined area as set forth herein; and

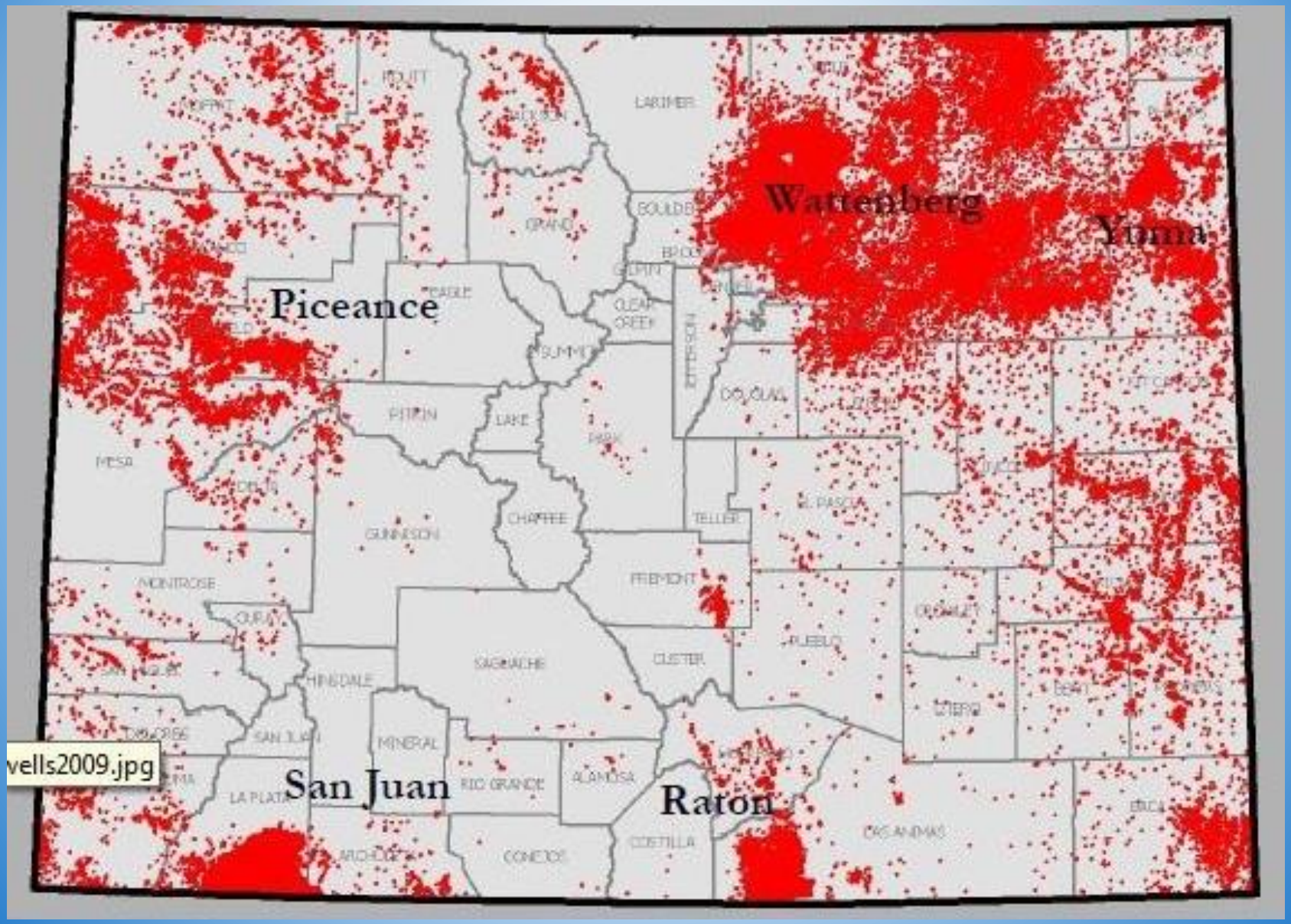
WHEREAS, the Board of Trustees adopts the following regulations in order to promote the health, welfare and safety of the inhabitants of the Town of Collbran by maintaining and protecting the Town=s watershed and waterworks from damage, harm or injury, and to prevent pollution of the Town=s water supply without creating an undue hardship on activities that promote the protection of the Town=s watershed and waterworks.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF TRUSTEES FOR THE TOWN OF COLLBRAN, COLORADO:

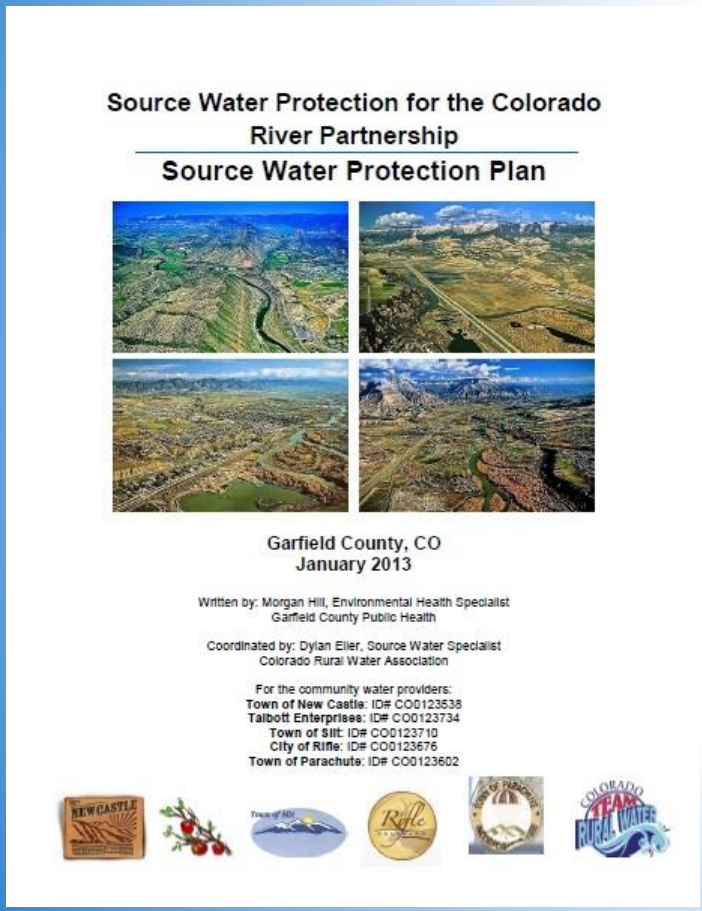
Section 1. Incorporation of Recitals. The aforementioned recitals are hereby fully incorporated herein.


Communities Working with CRWA's Source Water Program
MOFFAT
ROUTT
JACKSON
LARIMER
WELD
LOGAN
PHILLIPS
RIO BLANCO
ADAMS
WASHINGTON
YUMA
GARFIELD
KIT CARSON
MESA
PARK
LINCOLN
GUNNISON
CHAFFEE
MONTROSE
FREMONT
CROWLEY
SAN MIGUEL
SAGUACHE
CUSTER
OTERO
BENT
PROWERS
DOLORES
MINERAL
RIO GRANDE
ALAMOSA
ARCHULETA
COSTILLA
LAS ANIMAS
BACA
Colorado Rural Water
Map Created by Paul Hempel, CRWA August 2020
N
0
50
100
Miles
Completed_SWPPs
SWPPs In Progress
County Boundaries

Source Water Protection Case Studies:



Oil and Gas Development– Colorado River Partnership


Source Water Protection for the Colorado River Partnership

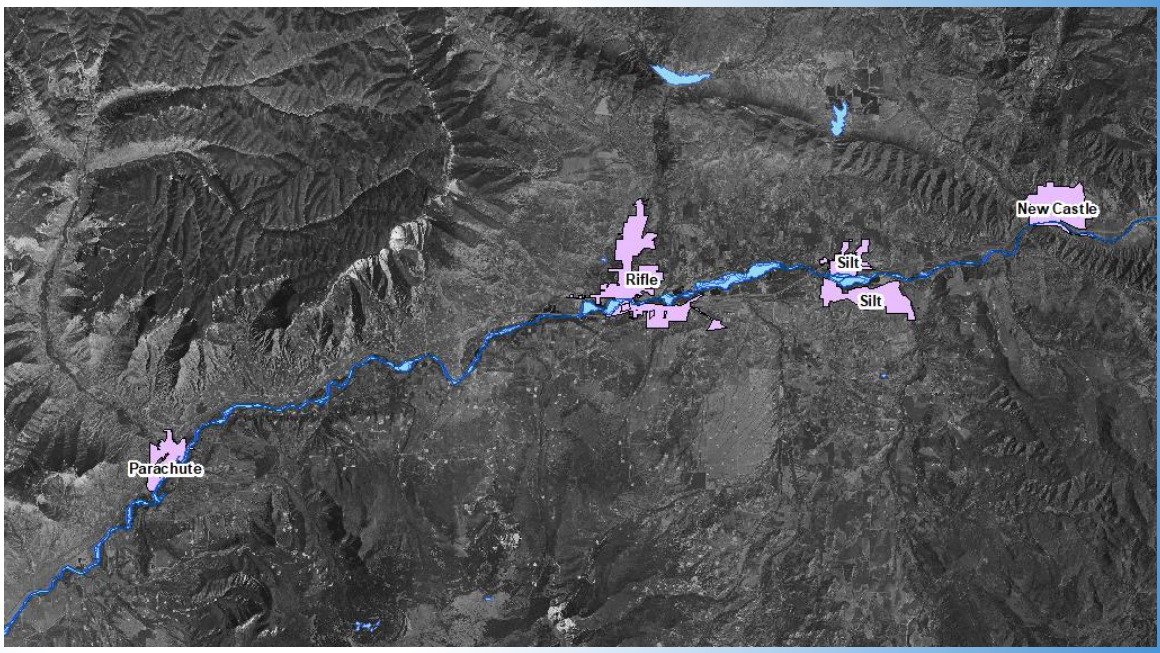
Source Water Protection Plan

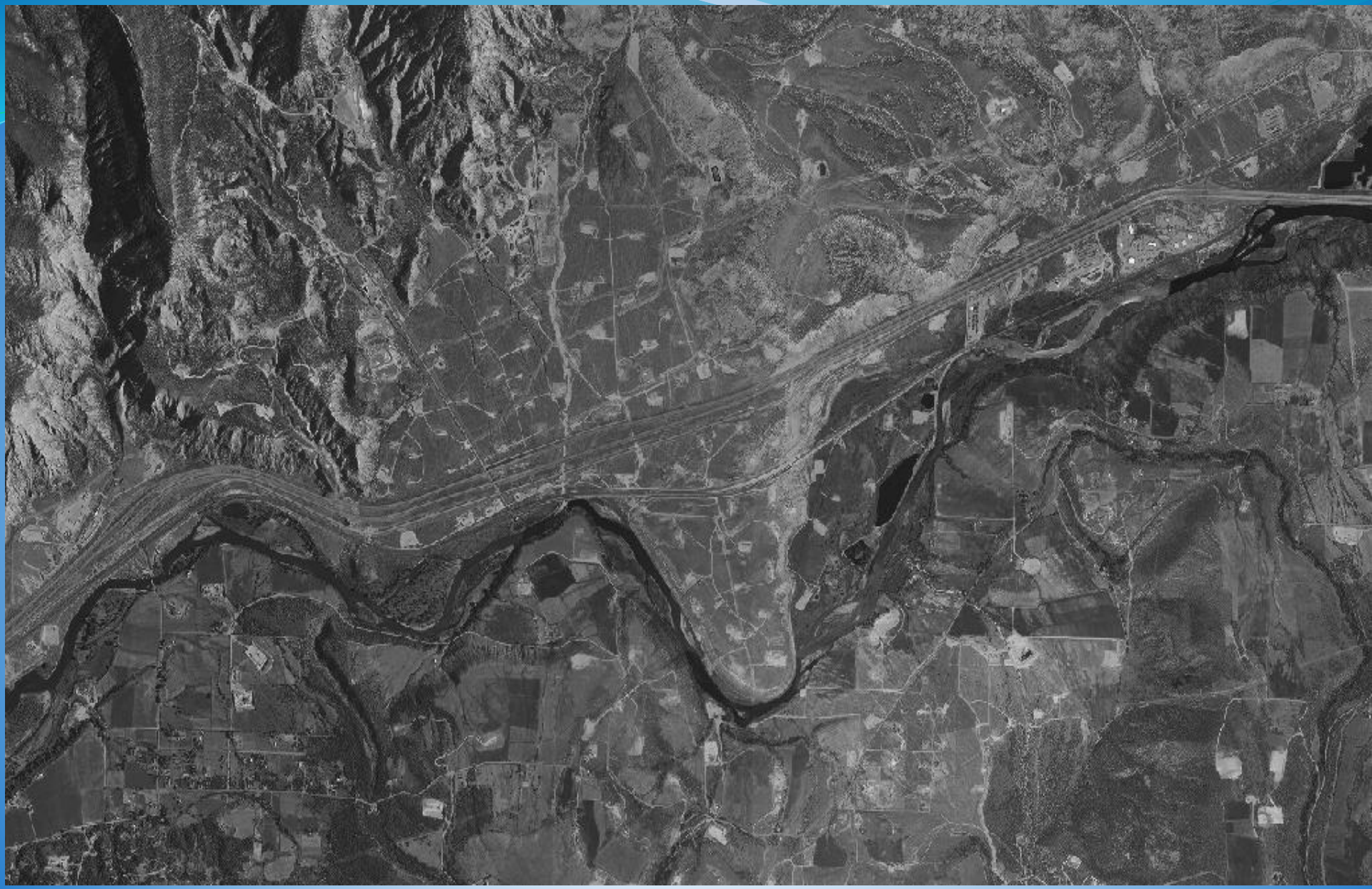
Garfield County, CO
January 2013

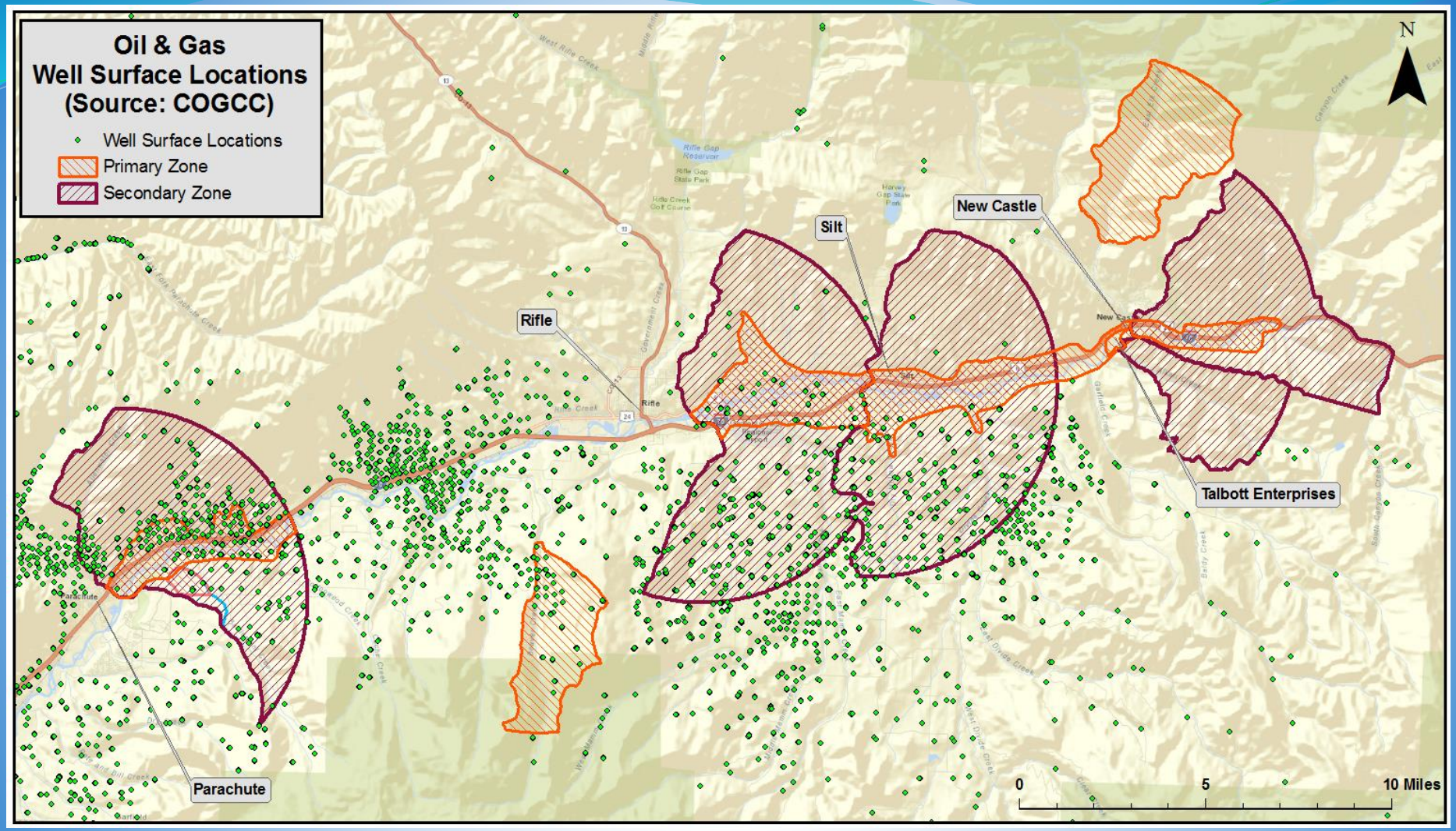
Written by: Morgan Hill, Environmental Health Specialist
Garfield County Public Health

Coordinated by: Dylan Eller, Source Water Specialist
Colorado Rural Water Association

For the community water providers:
Town of New Castle: ID# CO0123538
Talbott Enterprises: ID# CO0123734
Town of Silt: ID# CO0123710
City of Rifle: ID# CO0123676
Town of Parachute: ID# CO0123602






Oil & Gas
Well Surface Locations
(Source: COGCC)
Well Surface Locations
Primary Zone
Secondary Zone
N
Rifle
Silt
New Castle
Talbott Enterprises
Parachute
0
5
10 Miles

Management Approach

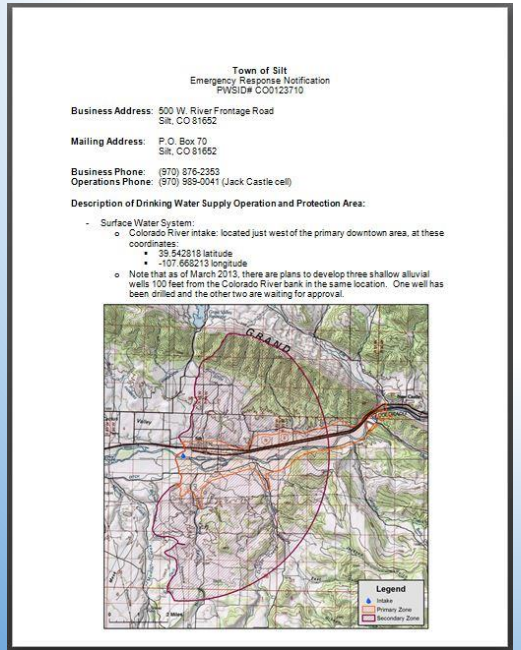
1. **Identify O&G features** (pipelines, haul routes, well pads, and other critical infrastructure) within the SWPA's **which pose the highest risk to the source waters.**

2. **Continue rapport (and develop where it does not exist) with local O&G operators** and maintain ongoing communication about present and future industry activity within the SWPAs Additionally, share Final SWPP with these local operators.

3. **Provide a copy of the final Source Water Protection Plan** along with GIS shapefiles of the protection areas **to local O&G operators to incorporate into their spill response protocol.** I.e. to amend the Spill Prevention Control Countermeasures (SPCC) to include a separate checkbox for the DWSPA in addition to the checkbox for Rule 317B.

4. **Distribute SWPCRP Emergency Response Card to O&G operators.**

5. **Continue the utilization of Watershed Protection District Ordinance permits** and other various permits to inform the Municipality of new activity within the SWPA.



Town of Silt
Emergency Response Notification
PWSID# CO0123710

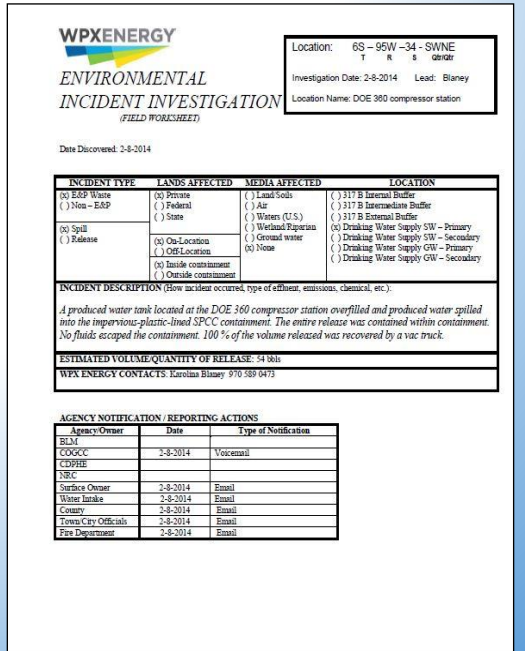
Business Address: 500 W. River Frontage Road
Silt, CO 81652

Mailing Address: P.O. Box 70
Silt, CO 81652

Business Phone: (970) 876-2353
Operations Phone: (970) 989-0041 (Jack Castle cell)

Description of Drinking Water Supply Operation and Protection Area:

- Surface Water System:
  - Colorado River intake: located just west of the primary downtown area, at these coordinates:
    - 39.542818 latitude
    - -107.668213 longitude
  - Note that as of March 2013, there are plans to develop three shallow alluvial wells 100 feet from the Colorado River bank in the same location. One well has been drilled and the other two are waiting for approval.



WPXENERGY

ENVIRONMENTAL INCIDENT INVESTIGATION
(FIELD WORKSHEET)

Location: 6S – 95W – 34 - SWNE (T R S Qtr/Qtr)
Investigation Date: 2-8-2014 Lead: Blaney
Location Name: DOE 360 compressor station

Date Discovered: 2-8-2014

INCIDENT TYPE	LANDS AFFECTED	MEDIA AFFECTED	LOCATION
(x) E&P Waste ( ) Non – E&P	(x) Private ( ) Federal ( ) State	( ) Land/Soils ( ) Air ( ) Waters (U.S.) ( ) Wetland/Riparian ( ) Ground water (x) None	( ) 317 B Internal Buffer ( ) 317 B Intermediate Buffer ( ) 317 B External Buffer (x) Drinking Water Supply SW – Primary ( ) Drinking Water Supply SW – Secondary ( ) Drinking Water Supply GW – Primary ( ) Drinking Water Supply GW – Secondary
(x) Spill ( ) Release	(x) On-Location ( ) Off-Location		
	(x) Inside containment ( ) Outside containment		

INCIDENT DESCRIPTION (How incident occurred, type of effluent, emissions, chemical, etc.).

A produced water tank located at the DOE 360 compressor station overfilled and produced water spilled into the impervious-plastic-lined SPCC containment. The entire release was contained within containment. No fluids escaped the containment. 100 % of the volume released was recovered by a vac truck.

ESTIMATED VOLUME/QUANTITY OF RELEASE: 54 bbls

WPX ENERGY CONTACTS: Karolina Blaney 970 589 0473

AGENCY NOTIFICATION / REPORTING ACTIONS

Agency/Owner	Date	Type of Notification
BLM		
COGCC	2-8-2014	Voicemail
CDPHE		
NRC		
Surface Owner	2-8-2014	Email
Water Intake	2-8-2014	Email
County	2-8-2014	Email
Town/City Officials	2-8-2014	Email
Fire Department	2-8-2014	Email

Oil and Gas Development– Morgan County Quality Water

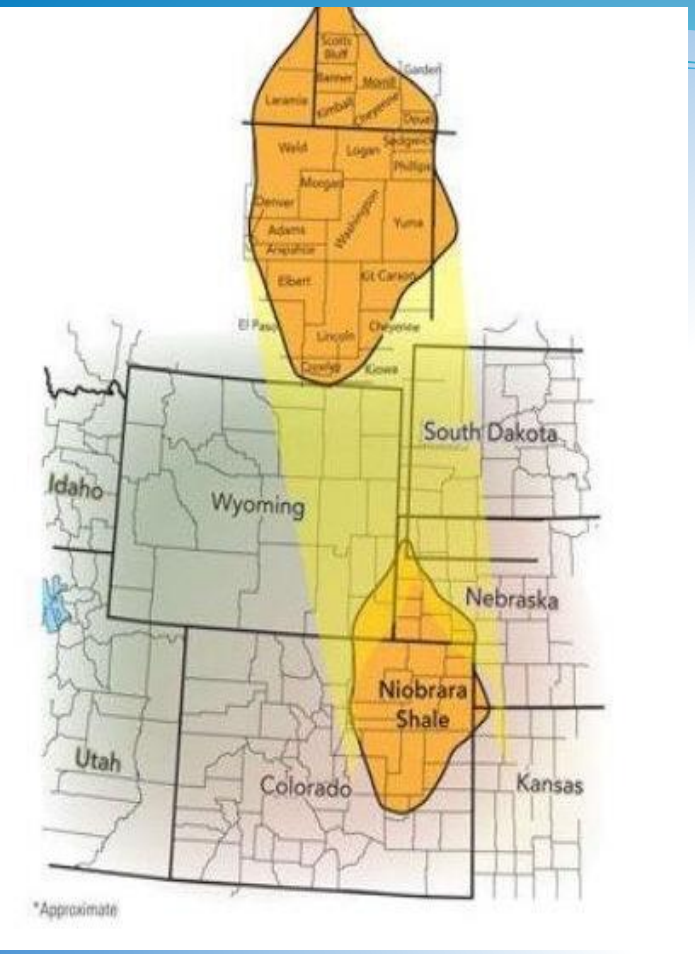
Morgan County Quality Water
Source Water Protection Plan

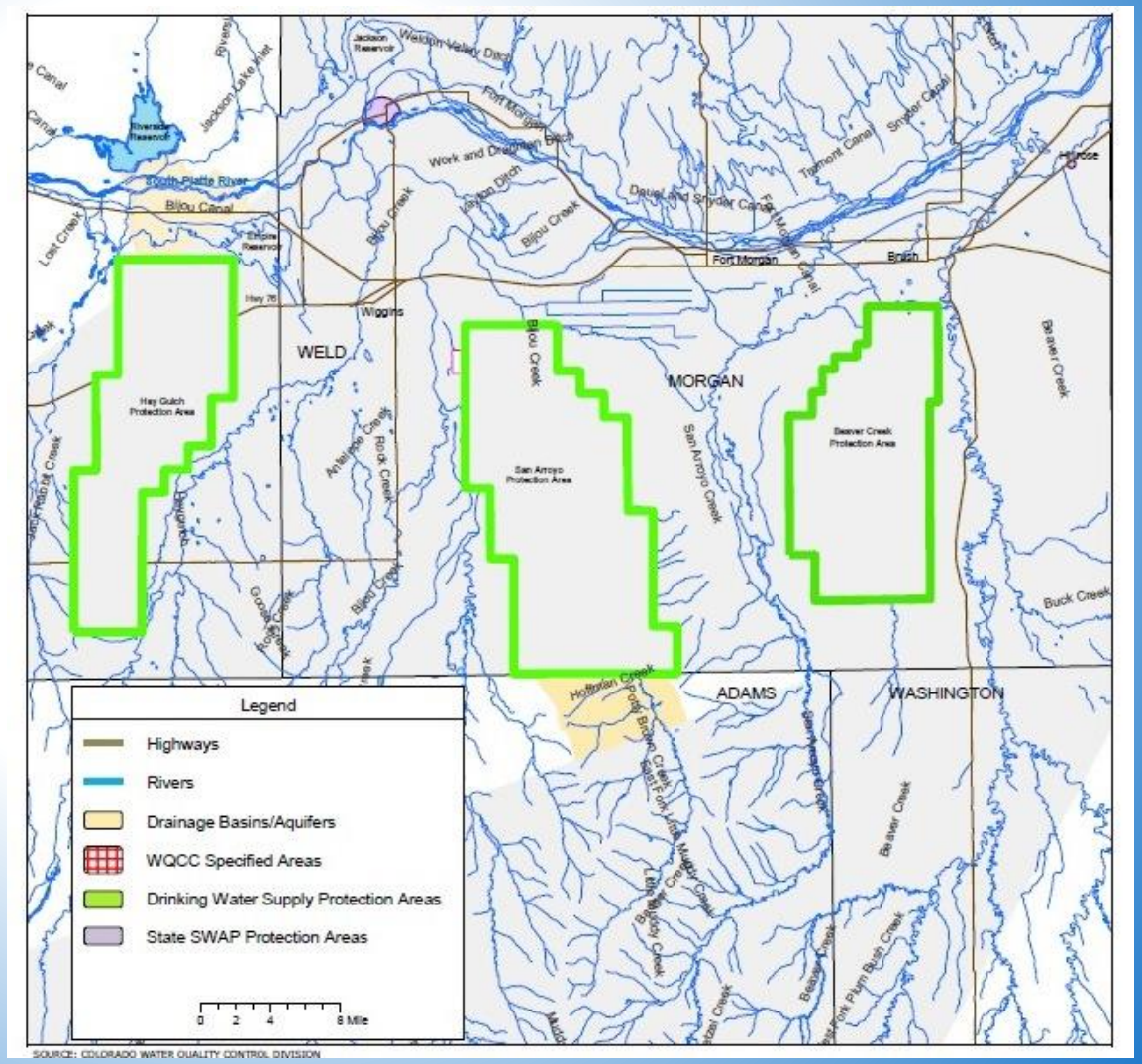
Morgan County, Colorado

September 2009

Written by Colleen Williams
Source Water Specialist
Colorado Rural Water Association

For the community water provider
Morgan County Quality Water: ID # CO0144020

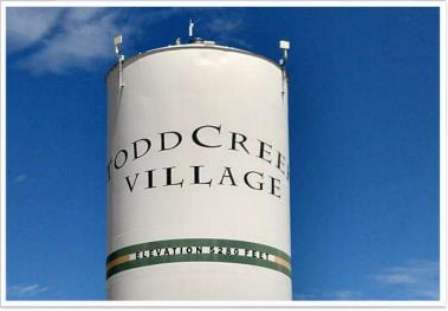

South Dakota
Idaho
Wyoming
Nebraska
Niobrara Shale
Utah
Colorado
Kansas
*Approximate


WELD
MORGAN
ADAMS
WASHINGTON
Legend
Highways
Rivers
Drainage Basins/Aquifers
WQCC Specified Areas
Drinking Water Supply Protection Areas
State SWAP Protection Areas
0 2 4 8 Mile
SOURCE: COLORADO WATER QUALITY CONTROL DIVISION

Adams County SWPPs

Todd Creek Village MD
Source Water Protection Plan

Adams County, Colorado
March 23, 2021



Written by Paul Hempel
Source Water Specialist, CRWA
For the Community Water Provider:

Tucson Water Company (Tucson Estates SUB)
Source Water Protection Plan

Adams County, Colorado
March 22, 2021

Written by Paul Hempel and Mallory Hiss
Source Water Specialists, CRWA
For the Community Water Provider:
Tucson Estates SUB, PWSID #: CO0101158

Hazeltine Heights WSD
Source Water Protection Plan

Adams County, Colorado
March 5, 2021

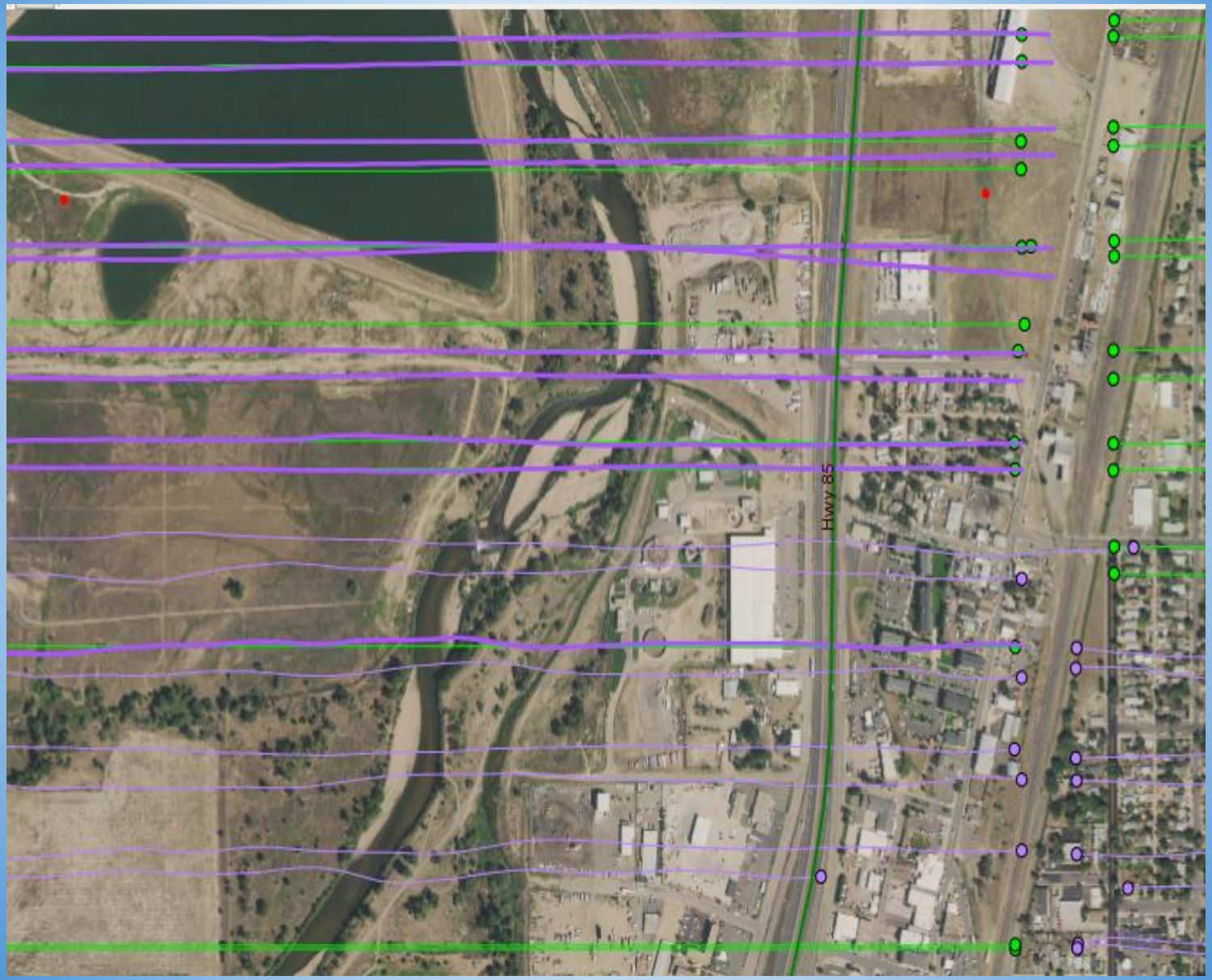
Written by Paul Hempel
Source Water Specialist, CRWA
For the Community Water Provider:
Hazeltine Heights WSD, PWSID #: CO0101070

Arapahoe 2 Well at Prairie View POA
Source Water Protection Plan

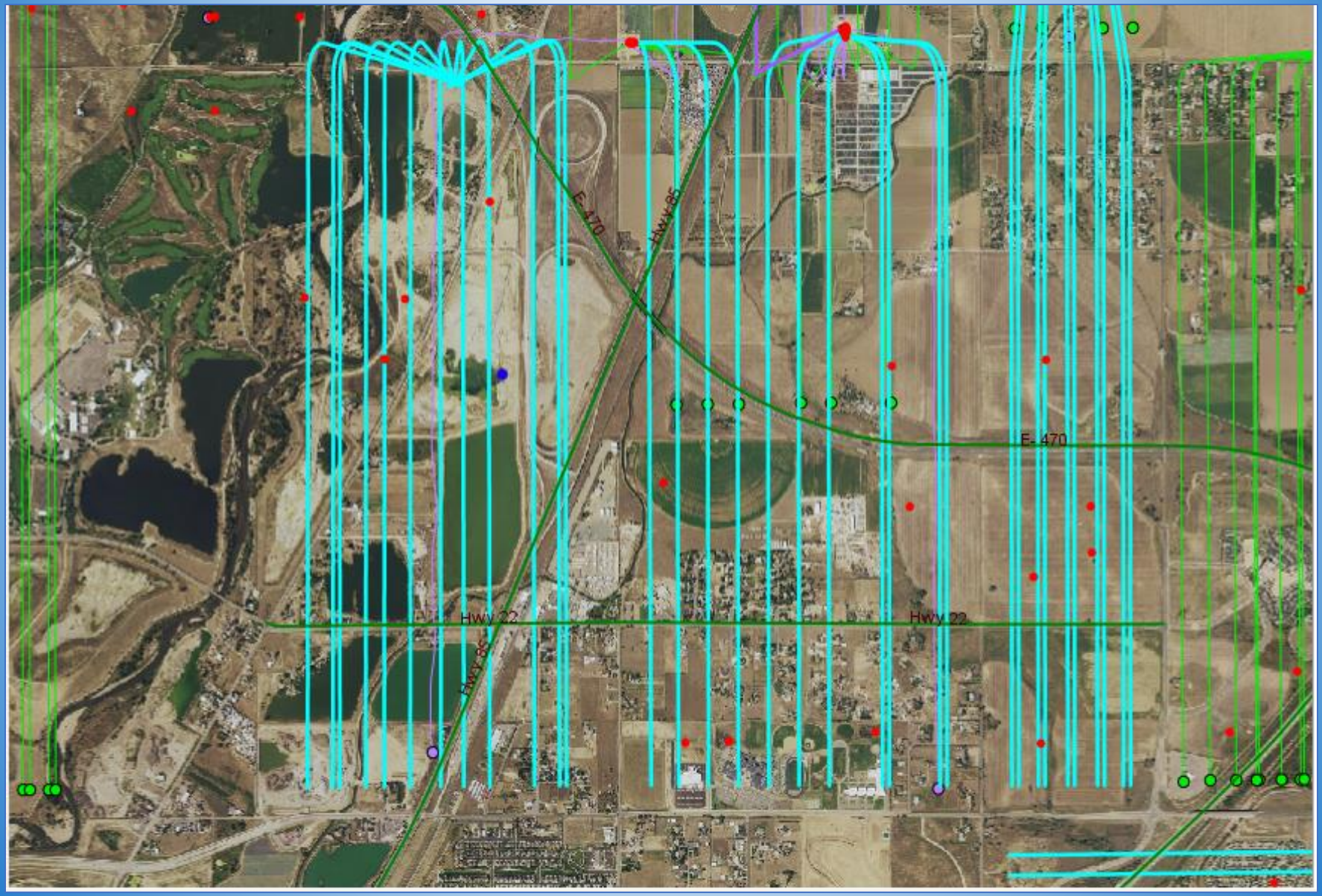
Adams County, Colorado
March 15, 2021

Written by: Paul Hempel and Mallory Hiss
Source Water Specialists
Colorado Rural Water Association
For the Community Water Provider:
Prairie View POA, PWSID# CO101125

Todd Creek Village MD



Tucson Estates SUB



Hazeltine Heights WSD

Prairie View POA

Ways to work with PWS in proximity to Oil & Gas Development

- Investigate the CDPHE SWAP website to identify PWS in your county: https://cdphe.colorado.gov/swap
- Investigate CDPHE Interactive Map to see if a PWS has developed a SWPP: https://www.cohealthmaps.dphe.state.co.us/cdphe_swap_protection_planning/
- Contact your PWS, via Town Manager, Public Works Director or HOA/MD Board Chairperson.
- Ask CRWA for assistance when needed.

State Resources Available

- COGCC Mapping Application (https://cogccmap.state.co.us/cogcc_gis_online/)
- COGCC/CDPHE working on updates to map
- COGCC staff available for consultation – may request any public records –example hydrology map
- Significant consultation – CDPHE – Sean Hackett – Oil and Gas Liaison, possible SWAP involvement

State Contact Information

John Duggan (Source Water Assessment and Protection Unit Manager)
303.692.3534 John.Duggan@state.co.us

Sean Hackett (CDPHE O&G liaison)
303.692.3662 Sean.Hackett@state.co.us

Greg Deranleau (COGCC Environmental Manager)
303.894.2100 x5153 greg.deranleau@state.co.us

Questions/Discussion

Thank-you!

Matt Sura – Law Office of Matthew Sura
mattsura.law@gmail.com
720-563-1866
Paul Hempel – Colorado Rural Water Association
paul.hempel@hotmail.com
719-565-8007