

DWR Updates and Geology and Well Construction in Division 2 and the Cheyenne Basin



January 14, 2021

Kevin Donegan, Andy Flor,
and Matt Sares

Hydrogeology Section



COLORADO
Division of Water Resources
Department of Natural Resources

Outline

- DWR Update - Kevin
 - DWR Website and eForms
 - BOE & Well Inspection Program
 - Nontributary Rulemaking
 - Miscellaneous Updates

Outline

- Geology and Well Construction
 - Division 2 (Arkansas Basin) - Andy
 - Cheyenne Basin (Northern Colorado) - Matt

Latest News

NOVEMBER 18, 2020

Resources for Water Users and Property Owners Impacted by Wildland Fire

This Memo provides information and resources related to water supply, wells and water hauling, measurement, dam safety, erosion, sedimentation control, flooding, and potential funding sources for water users and property owners impacted by wildland fire.

NOVEMBER 2, 2020

Memo to Well Owners within Fire Areas

This Informational Memo provides guidance on preventing groundwater contamination through wells damaged by fire.

NOVEMBER 2, 2020

Rule Calendar 2021

The Division of Water Resources Rule Calendar is required under Section 24-4-103.3.

[View All](#)

Upcoming Events

Rulemaking Hearing - Statewide Nontributary Rules

Wednesday, March 3, 2021 - Wednesday, March 3, 2021

[Read More](#)

[View All](#)





In response to the Governor's COVID-19 Stay at Home Order effective March 26, 2020, DWR staff are working remotely. Customers should use electronic means to communicate with DWR staff as processing documents received via mail may be delayed. General questions may be submitted through [AskDWR](#) or via email to our [staff contacts](#). Applications may be submitted through DWRpermitsonline@state.co.us and payment processing online is expected to continue.



WELL PERMITTING



WATER ADMINISTRATION



WELL METERING



DAM SAFETY



WELL CONSTRUCTION & INSPECTION



DATA & INFORMATION



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Boards and Commissions >

Board of Examiners Meetings

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Notification Lists

Ground Water Commission Meetings



WELL PERMITTING



WATER ADMINISTRATION



WELL METERING



DAM SAFETY



WELL CONSTRUCTION & INSPECTION



DATA & INFORMATION



Boards and Commissions

Board of Examiners of Water Well Construction and Pump Installation Contractors (BOE)

The Board of Examiners (BOE) has general supervision and authority over the construction and abandonment of wells and the installation of pumping equipment with the ability to adopt and revise related rules. BOE has authority to examine for, deny, approve, revoke, suspend, and renew the licenses of applicants and disseminate information to pump installation contractors and well construction contractors in order to protect and preserve the groundwater resources of the state. See the [Statutory Duties of the Board of Examiners](#) for additional details.

∨ [Guidance Documents - Formal Directives](#)

∨ [Licensing & Continuing Education](#)

∨ [Rules & Regulations](#)

[BOE Meeting Information](#)

[Well Construction & Inspection](#)

Boards and Commissions

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^ Guidance Documents - Formal Directives

Subject Search (filter keywords in subject field)

	Topic	Document Type	Subject	Document Date
Open	Board of Examiners	Policy	POLICY 2020-1: DEFINING HIGH RISK WELLS AND KEY PHASES OF WELL CONSTRUCTION	2020-02-03
Open	Board of Examiners	Policy	POLICY 2020-2: ADVANCE NOTICE OF WELL CONSTRUCTION, PUMP INSTALLATION, CISTERN INSTALLATION, AND WELL ABANDONMENT	2020-02-03
Open	Board of Examiners	Policy	POLICY 2020-3: SHORT-TERM DISCHARGES TO GROUNDWATER FROM WATER WELL ACTIVITIES	2020-02-03



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WELL PERMITTING



WATER ADMINISTRATION



WELL METERING



DAM SAFETY



WELL CONSTRUCTION & INSPECTION



DATA & INFORMATION

Board of Examiners Meetings

BOE Meeting Schedule

DATE	TIME	LOCATION / JOINING INFORMATION	MEETING DOCUMENTS & RECORDINGS
February 1, 2021	10:00 AM - 2:00 PM	Virtual Meeting: Join Google Hangout Meeting By Phone: (US) +1 307-264-0155 PIN: 495 771 394#	Check link below, 1 week prior to meeting 1st Quarter Meeting
May 3, 2021	10:00 AM - 2:00 PM	Virtual Meeting: Join Google Hangout Meeting By Phone: (US) +1 317-939-1676 PIN: 421 559 491#	Check link below, 1 week prior to meeting 2nd Quarter Meeting
August 2, 2021	10:00 AM - 2:00 PM	To be determined	Check link below, 1 week prior to meeting 3rd Quarter Meeting
November 1, 2021	10:00 AM - 2:00 PM	To be determined	Check link below, 1 week prior to meeting 4th Quarter Meeting

Last Meeting of 2020

DATE	TIME	LOCATION / JOINING INFORMATION	MEETING DOCUMENTS & RECORDINGS
November 2, 2020	10:30 AM	Virtual Meeting: Join Google Hangout Meeting By Phone: (US) +1 502-632-7718 PIN: 359 759 263#	Check link below, 1 week prior to meeting 4th Quarter Meeting

Important Links:

- [Complaint Process & Procedure - BOE](#)
- [Current Board Members \(Previous Members\)](#)
- [Well Construction & Inspection](#)

▼ Board Member Training Manual - Best Practices for State Boards and Commissions

▼ Ask a Question and View FAQ



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Approved Fluids & Additives, Log Waivers, Notifications, & Variances

✓ **Approved Fluids & Additives**

✓ **Geophysical Log Waivers**

✓ **Notifications to Well Inspection Team**

✓ **Well Construction Variances**

Important Links

- [Board of Examiners \(BOE\) Meetings](#)
- [BOE Authority, Duties, Licensing, & Rules](#)
- [BOE Complaint Process & Procedure](#)
- [Licensed Contractor Lists](#)
- [Statewide Nontributary Groundwater Rules \(Geophysical Logs: Rule 9\)](#)

Important Documents

✓ **Forms - Well Construction & Inspection**

✓ **Water Well Construction Rules (2 CCR 402-2)**

✓ **Ask a Question and View FAQ**

eForms

- Phase 1
 - Apply for a New Well Permit
 - Change in Ownership
 - Apply for a License
- Phase 2
 - Renew/Update a License
 - Construction/Installation Forms
 - Advance Notice & Risk Value Calculation

eForms

- Hope to launch this Spring
- Looking for Stakeholders for User Testing
 - Email me if interested, kevin.donegan@state.co.us

eForms

- Must have a CDSS Account, dwr.state.co.us/tools

The screenshot shows a web browser window displaying the Colorado's Decision Support Systems (CDSS) website. The browser's address bar shows the URL dwr.state.co.us/tools. The website header includes the Colorado DNR logo and the text "COLORADO'S Decision Support Systems CWCB / DWR". A red box highlights a login link that says "Welcome Guest, Click here to Login". Below the header is a navigation bar with "CDSS Data & Tools" and a "Help" link. The main content area features a grid of 12 service tiles, each with a title, a brief description, and a small icon:

- Administrative Calls & Analysis**: Active, Historical & Analysis Tools
- Climate Stations**: Temperature, Precipitation, Snow, Etc
- Dam Safety**: Dams, Livestock Water, Erosion Control
- Groundwater**: Water Levels & Geophysical Logs
- Stations**: Current Conditions & Historical Data
- Structures**: Diversion Records & Other Details
- Water Rights**: Decree Details, Court Docs, Net Amounts
- Well Permits**: Application History & Well Details
- Map Viewer**: DWR Online GIS Products
- Aquifer Determination**: Denver Basin & Dakota/Cheyenne
- Information Marketplace**: DWR Data on "CIM" Platform
- Location Tools**: Coordinates & Distance Calculators
- Data Submittal**: User Reporting
- My Stations**: Station Lists and Alerts
- REST Web Services**: GET CDSS Data Programmatically



Welcome to the Department of Natural Resources (DNR) online portal.
 Login or register for a DNR Portal account below.

Email Address

Kevin.Donegan@state.co.us

Password

.....

Stay signed in


Sign in

[Forgot Password?](#)

[Register for a New Account](#)



Register an Account

First name  Last name

Enter first name Enter last name

Email address

Enter email

Password Confirm password

Password Confirm password

Show Password


✗ 8 Characters Long ✗ Lowercase Letter ✓ Passwords Match
 ✗ Uppercase Letter ✗ Number

Prefix Suffix

Company Phone number

Address City

State Zip

Hide Additional Fields 

Register

[Login Page](#)
[Forgot Password?](#)

eForms Dashboard



Home

HOME

FORMS

CLASSES

SERVICES

PUBLICATIONS

CART



Pending or Incomplete Submissions

No completed submissions. Click [here](#) to start a new form.

Completed Submissions

Form	Status	Date	
Apply for New Well Permit	Pending Initial Review	1/11/2021 4:16:06 PM	View
Apply for New Well Permit	Canceled	1/7/2021 12:27:56 PM	

Additional Resources

- [Colorado Decision Support System\(CDSS\)](#)
- [Colorado Information Marketplace \(CIM\)](#)
- [DWR Map viewers](#)
- [DWR Web Services](#)
- [DNR eForms](#)



First Available Forms



Well Permitting

[Apply for New Well Permit](#)

This application is designed to walk you through the process of applying for a new well permit, regardless of the well's use.

[Change an Existing Permit](#)

This application is designed to walk you through the process of changing or modifying your existing well permit.

[Change of Ownership/Contact Information](#)

Use this form if you need to update or change the owner's (or other associated individuals) contact information for a given permit. Please note, filing a Change of Ownership/Contact Information form is for contact information purposes ONLY. This action does not convey real property.

[Refund Request](#)

Use this form if you would like to request a refund.

Board of Examiners

[Apply for Contractor License](#)

Use this form if you would like to engage in the business of contracting for and performing either the construction and/or the repair of wells, the installation and/or repair of pumping equipment, or the installation and/or repair of cisterns connected to water well supply systems, and/or utilize special equipment or perform limited procedures in well construction, pump installation, or cistern installation.

Prerequisites:

- Per 37-91-105(2)(a) C.R.S., the contractor must be over the age of 21. This age requirement will be verified at the Board of Examiners written test.
- Per 37-91-105(2)(b) C.R.S., contractor's must be U.S. citizens or declare intention to become a citizen.

[Update Contractor License](#)

Use this form to update or manage the details of your Well Construction, Pump Installation, and/or Special License issued by the Board of Examiners of Water Well Construction and Pump Installation Contractors.



Location Spotter

- Use of Well
- Reference Existing Well or Prior Permit
- Residential Use
- Rooftop Precipitation Collection System
- Well Location**

Well Location

Input

Coordinate System

- Center of Map
- Center of Map**
- Address
- Latitude/Longitude WGS84 (Decimal Degrees)
- Latitude/Longitude WGS84 (Degrees Minutes Seconds)
- Public Lands Survey System (PLSS Distances)
- Public Lands Survey System (PLSS Quarters)
- UTM NAD83 (Zone 12) - Approx Western most 55 miles of state
- UTM NAD83 (Zone 13)

Google

Map data ©2021 Imagery ©2021, Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency Terms of Use Report a map error

▼ UTM

Zone	Easting	Northing
13	528551.0	4375801.7

- Use of Well
- Reference Existing Well or Prior Permit
- Residential Use
- Rooftop Precipitation Collection System
- Well Location
- Water Right Information
- Water Supplier Information
- Sewage System
- Proposed Well Data**

Proposed Well Data

What is the proposed maximum pumping rate?*

What is the annual amount to be withdrawn?*

What is the anticipated depth of well(s) in feet?*

Please select the final aquifer:*

FRACTURED CRYSTALLINE ▼

In what aquifer type is this well anticipated to be completed?*

Type 2 (Unconfined) ▼

Are you submitting a Well Construction Variance Request with this application?

Please upload a copy of your variance request.*

SELECT FILES...

Drop files here to upload

Maximum allowed file size is **10 MB**.

[BACK](#)

[NEXT](#)

[EXIT FORM](#)

BOE & Well Inspection Program

- BOE Admin Rule 8.1, effective 01/01/2021
- 8.1b. the Board, in conjunction with the CE Committee, will determine through policy the number of hours of approved continuing education that can be obtained by internet or online participation.

BOE & Well Inspection Program

- 8.1d. Due to significant limitations on the ability of people to meet in person due to the COVID-19 pandemic, all hours of accredited continuing education taken by internet or online participation from January 1, 2020 through January 31, 2021, may be used to obtain the required hours of continuing education. This Rule 8.1d. is repealed effective February 1, 2021, unless further extended by emergency or permanent rule.

DRAFT BOE Policies

- 2021-1 Continuing Education Obtained by Internet or Online Participation
- 2021-2 Poor Water Quality from Coal or Other Zones
- 2021-3 Construction Standards for Wells in the Northern High Plains Designated Basin

DRAFT Policy 2021-1

- Will set the number of hours of CE by internet or online participation for calendar year
- Determined by Board and CE Committee
- Reviewed during each 4th Quarterly BOE Meeting

DRAFT Policy 2021-2

- Updated from BOE Bulletin 2000-2
- Zones with poor quality water could be within permitted aquifer interval
- Drilling contractor must consult with well owner to determine if such zones should be sealed in production interval

DRAFT Policy 2021-3

- Geologic background BOE Policy 2003-3
- Alluvial (Type 3) aquifers: sediments deposited by modern streams during relatively recent time
- Ogallala and White River are considered “bedrock” due to their geologic age, not degree of lithification

DRAFT Policy 2021-3

- Within the Northern High Plains Designated Basin, the Ogallala and White River administered together
- Within NHP Basin the aquifer will be named the “High Plains Aquifer”
- The High Plains Aquifer is an unconfined bedrock aquifer, wells must be constructed as Type 2

Northern High Plains Designated Basin

Era	System		Series	Stratigraphic unit		Hydrogeologic unit	Physical characteristics
Cenozoic	Quaternary		Holocene and Pleistocene	Alluvial deposits, valley-fill deposits and dune sand		Type 3	Gravel, sand, silt, and clay
	Tertiary	Upper	Miocene	Ogallala Formation		High Plains aquifer	Unconsolidated, poorly sorted gravel, sand, silt, and clay
				Arikaree Formation			Sandstone, fine to very fine. Local beds of volcanic ash, siltstone, claystone, and marl
	Lower	Oligocene	Brule Formation	White River Group	Siltstone with sandstone as beds and channel deposits		
			Chadron Formation		Clay and silt		
				Containing unit			

Modified from Gutentag and others, 1964

Figure 67. Geologic units ranging in age from Oligocene to Quaternary compose the High Plains aquifer. The permeable units consist of sand, sandstone, and gravel.

Modified from: Robson, S.G. and Banta, E.R. 1995. Ground Water Atlas of the United States, Arizona, Colorado, New Mexico, Utah. USGS HA 730-C



COLORADO
Division of Water Resources
Department of Natural Resources

Open Board of Examiners Position

- Well Construction or Pump Installation Contractor
- Minimum 10 Years' Experience
- July 1, 2021 to June 30, 2025
- Meetings typically held Room 814,
1313 Sherman Street, Denver, CO 80203 (or virtually)

Open Board of Examiners Position

- Duties of the Board, <https://dwr.colorado.gov/public-information/boards-and-commissions/board-of-examiners-meetings>
- To Apply, <https://www.colorado.gov/governor/boards-commissions-application>
- For additional information please visit, <https://www.colorado.gov/governor/boards-commissions>

Well Inspection Program

- Legislative Audit Committee - December 7, 2020
- BOE does not support Advance Notice on all wells
- Office of State Auditor Recommendations to LAC
 1. Take no action
 2. Have DWR report back to LAC in 6 months
 3. Request legal opinion authority of SEO to require advance notice
 4. Sponsor legislation to require advance notice on all wells
 5. Notify applicable Committees to determine whether policy change related to program is warranted

High Risk Well Inspections¹

The Audit compared the number of inspections to constructed wells. The table below shows the number and percentage of inspections that were of high-risk and low-risk wells for the total number of wells inspected for the time period April 25, 2020 through October 31, 2020.²

Reporting Period	Total Number of Wells Inspected	Inspections of Low-Risk Well	Percentage of Inspections that were Low-Risk Wells	Inspections of High Risk Well	Percentage of Inspections that were High-Risk Wells
Audit (FY 2018)	310	295	95%	15	5%
4/25/2020 thru 10/31/2020	257	98	38%	159	62%

Key Phase Well Inspections

The Audit also identified the number of the total wells inspected that were not inspected for a key phase. The table below shows the number and percentage of wells inspected that did include an inspection of a key phase for the time period April 25, 2020 through October 31, 2020.³

Reporting Period	Total Number of Wells Inspected	Well Not Inspected for a Key Phase	Percentage of Wells without Key Phase Inspection	Well Inspected for at Least One Key Phase	Percentage of Wells With at Least One Key Phase Inspection
Audit (FY 2018)	310	209	67%	101	33%
4/25/2020 thru 10/31/2020	257	17	7%	240	93%

Key Phases Observed

Key Phase	Observed	Percent
Well Location	263	38%
Annular Space	116	17%
Minimum Grout	96	14%
Total Depth	91	13%
Disinfection	55	8%
Perforated Casing	36	5%
Pump Install	27	4%
Abandonment	6	1%
Cistern Install	0	0%

Legislative Audit Committee Decision

- Encouraged with progress so far
- DWR to report back in June 2021
- Focus on inspecting casing and grout
- <https://leg.colorado.gov/committees/legislative-audit-committee/2020-regular-session>

Well Inspection Program

- Revised Advance Notice form in March 2020
- Received 632 notices (as of 1/12/21)
- Auto-calculating an Interim Risk Value (IRV) based on information provided in the notice and permit file
- Data from notices populate a Google Map for Inspectors

← Type III (alluvial) - Well Con... ↻

Map Style

Type III (alluvial) - Well Construction Commencement

Timestamp

1/1/2021 18:36:14

Email Address

bwmc@wildcatdrillingandpump.com

First Name

brian

Last Name

mcperson

Phone Number

9708566583

Individual/Company Responsible for Doing the Work

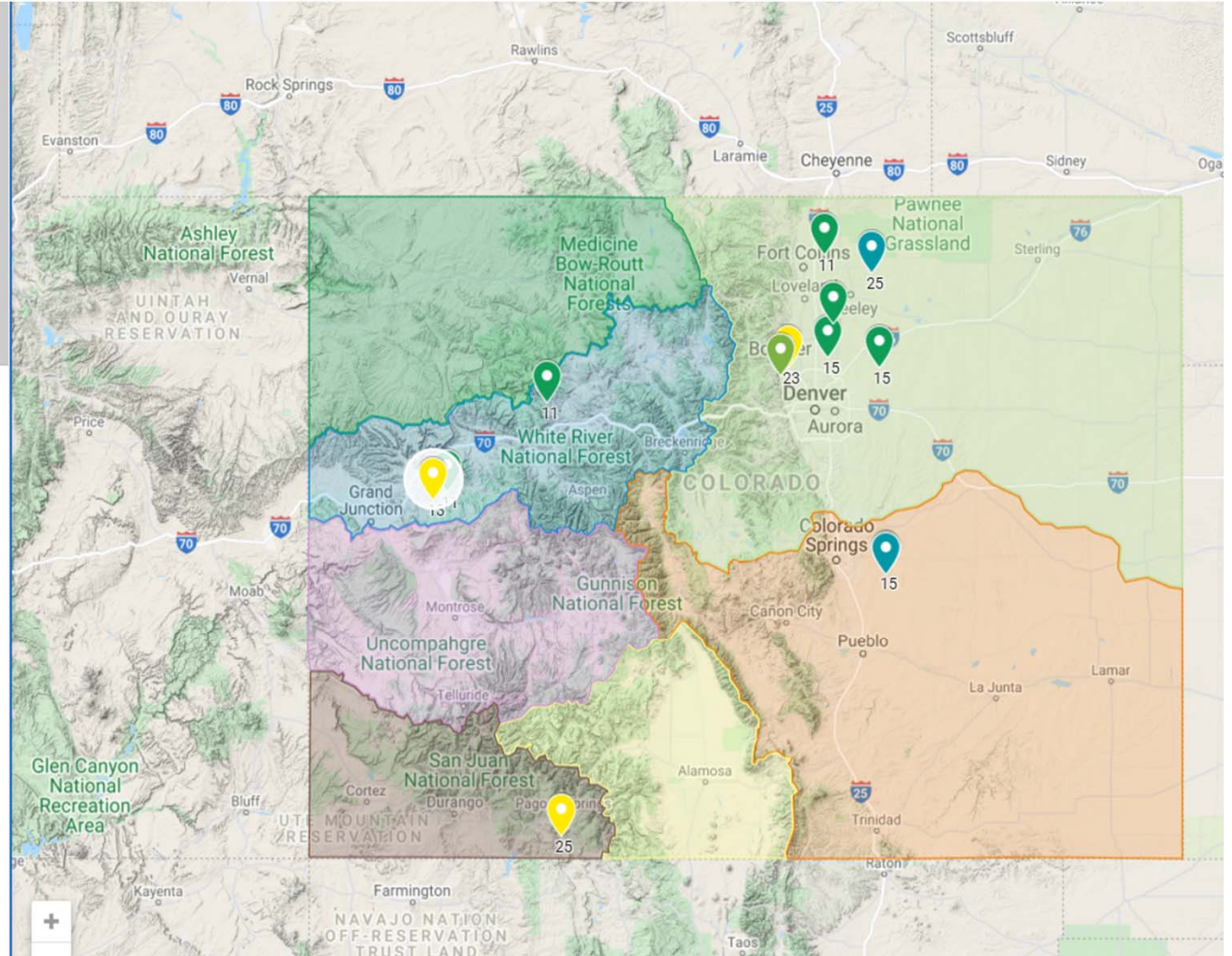
Licensed Contractor

License Number

1503

Permit Receipt Number

3693474





Permit Number	318988-	Receipt	10003925
Permit Category	Residential	WDID	
Permit Status	Well Constructed		

THIS PAGE IS NOT THE ACTUAL PERMIT
 The information contained on this page is a summary of the permit file and may not reflect all details of the well permit. To view the actual permit, [click here](#), or navigate to Imaged Documents to view all documents related to this permit.

Application/Permit History

Action History CSV

Action	Action Date	Date Received	Comment
Permit Expiration Date	10/9/2022		
Well Inspected, Key Phase	12/2/2020		Key Phase: Disinfection; cannot confirm minimum depth of grout.
Well Constructed	12/1/2020	1/5/2021	
Well Inspected, Routine	11/28/2020		Routine Inspection: No change since previous visit.
Well Inspected, Key Phase	11/25/2020		Key Phase: Location, Annular Space and Minimum Grout (grout depth does not yet meet Rules). See Inspection Report.
Permit Issued	10/9/2020		
Application Information Submitted	9/30/2020	9/30/2020	Applicant submitted an amended application to change proposed use to only livestock, and submitted a letter from NWCWD
Application Information Requested	7/7/2020		Need letter from North Weld County Water District
Hydrogeology Review Completed	7/6/2020		
Hydrogeology Review Requested	6/19/2020		
Application Received	6/9/2020		

Well Inspection Reports

Well Permits Report Help Login

Overview Construction Data Permit History Applicant/Contact **Imaged Documents**

Permit Number: 318988- Receipt: 10003925
 Permit Category: Residential WDID
 Permit Status: Well Constructed

Search Fields Hide		Well Permit Information							
Template		Receipt	Permit No	Permit Suf	Permit Rpl	Type	Annotated	Pages	Created
Division Filing (0)		View	10003925	318988		Well Construction	No	1	1/6/2021
Geophysical Logs (0)		View	10003925	318988		Well Inspection Report	No	4	11/30/2020
Substitute Water Supply Plans		View	10003925	318988		Original File	No	11	10/9/2020
Water Court (0)		View	10003925	318988		Well Permit	No	2	10/9/2020
Well Permit Information (5)		View	10003925	318988		Hydrogeologic Aquifer Evaluation	No	1	7/6/2020

Document Type: All

1 - 5 of 5 items



COLORADO
 Division of Water Resources
 Department of Natural Resources

Board of Examiners of Water Well Construction
 and Pump Installation Contractors

WELL INSPECTION REPORT

Permit Receipt Number: 10003925 Permit Number: 318988

Inspector: CAJ

Date of inspection: 11/25/2020 Time Arrive: 12:45 Time Depart: 13:30

Division: 1 County: Weld UTM Zone: ZONE 13 UTM X: 537647 UTM Y: 4486632

Company: Alliance Irrigation Well & Pump License: 889

Driller/Installer Personnel Onsite: no one onsite

Reason for Visit: Adv. Notice Notice Required: YES Notice Received: YES

Key Phases Observed: Comments:

X	Well Location	
X	Annular Space	<1" due to poor centralization in upper portion of casing Rule 10.4.4 and 10.4.1
	Total Depth	
X	Minimum Grout	about 39' bgs, does not yet meet Rules.
	Perforated Casing	
	Pump Install	
	Cistern Install	
	Disinfection	
	Abandonment	

Well Inspection Report
 Receipt No. 10003925
 page 2 of 4

Additional Comments:

Found the rig apparently set up for haliburton pumping of grout with 7" steel casing in an approx 10" ID PVC conductor pipe. Found an approx 11" bit onsite. Fresh grout was observed in the discharge channel near the rig. Possible top of grout was measured to be about 39' bgs. The steel casing didn't appear to be centralized within the borehole/conductor pipe. Though the borehole/conductor size relative to the casing diameter would suggest there should be sufficient annulus, it does not appear from the position of the surface casing at the top of the borehole that the casing is adequately centralized or that adequate annulus is present on the NW side of the pipe to provide grout cover on all sides of the casing. Rule 10.4.4 and 10.4.1. (Follow up call with Larry on 11-30 indicates Contractor will use the rig to centralize the top of the casing when they top off the grout.)

The information contained in this report reflects only what was observed during the inspection and does not endorse the well construction, pump installation, cistern installation, and/or abandonment. The responsible individual who certifies the work report pursuant to Rule 17.4 (2 CCR 402-2) is solely responsible for the work performed by them or under their direction or supervision.



Well Inspection Report
Receipt No. 10003925
page 3 of 4



Well Inspection Report
Receipt No. 10003925
page 4 of 4





Permit Number 318988- **Receipt** 10003925
Permit Category Residential **WDID**
Permit Status Well Constructed

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Hydrogeologic Aquifer Evaluation

Well Permits Report Help Login

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Substitute Water Supply Plans		View	10003925	318988		Original File	No	11	10/9/2020
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Well Permit Information (5)		View	10003925	318988		Hydrogeologic Aquifer Evaluation	No	1	7/6/2020

Document Type: All

1 - 5 of 5 items

Hydrog

Team 1B

June 19, 2020

Hydrogeology Section Consultation
MAPPED AS LARAMIE FM

E: 537508
N: 4486656
ELEV: 4850

Evaluator: Javier Vargas-Johnson

Receipt No: 10003925

Location: SE 1/4 NW 1/4 Section 33, Township 7 North, Range 64 West, 6th P.M., Rule 6.2.3

Aquifer(s) Requested: Shale

Request: The proposed well is within the Cheyenne Basin and has a proposed depth of 400 feet. Please provide aquifer interval depths and necessary well construction rules. There was a 2020 hydrogeo review for receipt no. 3696503 not too far away.

Consultation

Recommendations:	ELEV	TOP	BASE	DEPTH
OS-123-07160	4826	4606	4286	
OS-123-12001	4779	---	4294	
OS-123-24185	4834	---	4319	
OS-123-12025	4853	---	4283	

Special Permit

Conditions: LARAMIE FORMATION FROM SURFACE TO 240 FEET

* Rule 10.4.6 → TYPE 2 (4850 - 4610 FEET)

LARAMIE FOR HILLS AQUIFER FROM 240 FEET TO 560 FEET

* Rule 10.4.8 → TYPE 1 (4610 - 4280 FEET)

Hydrogeologist Signature: [Signature] Date: 7/1/2020

uation

Nontributary Groundwater Rules

- Amending Rules (2 CCR 402-7) - Hearing: March 3, 2021
- Proposed Rule 9.1.3
 - Licensed Contractors or Private Drillers, who construct wells are responsible for obtaining and submitting the required geophysical logs on behalf of the well owner.
 - If the geophysical log is not obtained before casing is installed, the State Engineer may require a log from uncased borehole (test hole) or through the casing (See Rule 9.6.1).

Nontributary Groundwater Rules

- Proposed Rule 9.2
 - Waivers for partial penetration and logs within 1,320 ft
- Proposed Rule 9.3

Required Geophysical Logs
Resistivity (shallow and deep)
Gamma
Spontaneous Potential (SP)
Caliper

Additional Recommended Geophysical Logs
Density (Porosity)
Neutron
Single Point Resistance (SPR)
Sonic
Magnetic Resonance

Nontributary Groundwater Rules

Proposed Rule 9.7

Timelines to Confirm or Amend Permitted Intervals

- SEO will respond ASAP (but < 12 hours) if notified:
 - ~2 business days before TD
 - ~12 hours before anticipated logging
 - When logging commences with anticipated end time
- SEO will respond ASAP (< 1 business day) if not notified

Wildland Fire Resources

Posted on <https://dwr.colorado.gov>

“Water Users and Property Owners Impacted by Wildland Fire”

https://dnrweblink.state.co.us/dwr/0/edoc/3687725/DWR_3687725.pdf?searchid=da35b77d-6b66-4eac-974e-01d2614af849

“Well Owners within Fire Areas”

https://dnrweblink.state.co.us/dwr/0/edoc/3681575/DWR_3681575.pdf?searchid=8cf5be2e-c9e9-4c81-a499-1fa797ca2b59

Questions?

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Department of Natural Resources

