ANNUAL REPORT
OF ACTIVITIES PERFORMED BY
THE STATE ENGINEER'S OFFICE
2023

To Satisfy Requirements
of Senate Bill 89-181
Regarding Water Quality

COLORADO
Division of Water Resources
Department of Natural Resources

INTRODUCTION

According to the provisions of Senate Bill 89-181 (SB-181), the Colorado Division of Water Resources/State Engineer's Office (DWR/SEO) is one of the agencies responsible for implementing the water quality standards and classifications adopted by the Colorado Water Quality Control Commission (WQCC). The SEO will implement water quality standards and classifications only where water quality statutes other than the Water Quality Act require the SEO's involvement. This report provides an update on the activities undertaken by the SEO and its Division offices to accomplish its responsibilities pursuant to the provisions of SB-181 in calendar year 2023.

The SEO takes a proactive stance in this matter by cooperating with other agencies and organizations in the development of comprehensive and practical solutions for managing the quantity and quality of the state's waters.

There are three major areas where the SEO exercises its authority in implementing water quality standards and classifications:

- Adoption of points of compliance for discharges to groundwater
- Approval of substitute water supply plans and non-decreed water exchanges
- Adjudication process of plans for augmentation including water exchanges

A. Points of Compliance for Discharges to Groundwater

The SEO ensures that well construction activities do not result in a pollution discharge to state waters through well permitting activities. All wells must be constructed in accordance with the rules and regulations established by the State Board of Examiners of Water Well Construction and Pump Installation Contractors (BOE). Licensed well drillers construct domestic and commercial water wells. Monitoring and recovery wells can be constructed either by licensed drillers or under the supervision of a professional engineer or professional geologist if the well does not penetrate a confining layer. The BOE takes corrective actions against licensed drillers or pump installers who violate the rules for proper well construction, including penalties and suspension or revocation of their licenses. In the case of unlicensed contractors performing well construction activities that should only be conducted by licensed contractors, legal proceedings are initiated, which usually conclude in significant monetary judgments. Well owners have the ultimate responsibility to correct the deficiencies of improperly constructed wells. Otherwise, the BOE, State Engineer, or both may order the well plugged and abandoned to prevent contamination of groundwater.

The SEO annual well permitting summary is captured in Table 1. The number of well permits issued decreased by 28% in 2023 from 2022; continuing a downward trend from 2021 and the lowest number in the past five years. Monitoring hole notice-of-intent to drill (NOI)

eForms received by the SEO were up close to 8% over 2022. These also include NOIs for temporary dewatering wells. Monitoring *holes* (in contrast to monitoring *wells*) are used for temporary monitoring (<18 months) of groundwater quality at environmental remediation sites. The SEO can request water quality data from applicants if necessary.

Table 1 –SEO Annual Well Permitting Summary

SEO Permitting Activity	2019	2020	2021	2022	2023
1. Permits Issued	5621	5784	7267	6751	4860
2. Monitoring Hole Notice-of-Intent	921	975	1019	1088	1170

Table 2 summarizes annual BOE activities (through the Well Inspection Program) for the last five years. The 2019 high point in total fines was a direct result of eliminating the use of a first-offense warning letter for late well construction reports. In 2020 and 2021, the late filing of well construction reports was down significantly, leading to a steep decline in stipulated settlements. In 2023, approved well construction variances (from the Construction Rules) were consistent with 2022. 52 of those variances were for shallow, infiltration gallery wells and 18 variances were to approve the use of Type IL cement which is replacing Type I/II in the market. The Board licensed 244 contractors in 2023, 7 more than in 2022. All licensed contractors are required to obtain at least eight hours of continuing education annually for license renewal. Because of the COVID-19 pandemic, rules were amended to allow this continuing education to be obtained online. For 2022 & 2023, the BOE has returned to its normal practice of requiring at least four hours of in-person training.

Table 2 –Board of Examiners Annual Activity Summary

BOE Activity	2019	2020	2021	2022	2023
1. Complaints Investigated	99	33	14	30	33
2. Resolved Complaints	68	52	15	22	17
3. Stipulated Settlements (total dollars)	51 ($45,600)	26 ($13,800)	4 ($1,500)	22 ($15,400)	16 ($13,300)
4. Licenses suspended or revoked	0	0	0	1	0
5. Letter of admonition/ reprimand	15	8	1	1	0
6. Inspections	705	1202	1182	1467	997
7. Well Construction Variances	85	107	105	124	127
8. Licensed Contractors	242	244	248	237	244

The Well Inspection Program was authorized by the legislature in Senate Bill 03-45 and funded by a $40 increase in the well permit application fee, which has not changed since 2003. Presently, the program consists of a Chief Well Inspector headquartered in Denver and two additional well inspectors who perform inspections throughout the state. The Chief Well Inspector coordinates the activities of the program and supports the BOE. The primary objective of the program is to assist the BOE with the enforcement of its rules and regulations for well construction and pump installation. A key focus of the inspection program is to locate and initiate action against unlicensed contractors working illegally in the state. Well inspections in 2023 (997) decreased by 32% from the previous year, primarily due to the transition of Chris Jones from field inspector to the Chief Well Inspector role and the time and training it took to replace him with a new inspector in the field.

BOE Policy 2020-3 authorizes discharges of fluid to groundwater via land application that occur during water well construction, development, testing, disinfection, and rehabilitation. In March of 2023, a metropolitan district contacted BOE staff with a request to discharge neutralized fluid from a well rehabilitation project to the ground and not surface water. In accordance with the policy, BOE staff directed the district to contact the Hazardous Materials and Waste Management Division for guidance and approval. Board staff is also coordinating with the City of Aurora on the potential short-term discharge of extracted groundwater to a dry infiltration basin. The discharge would only occur following the loss of power at a well and prior to the backup generator returning power to the system. The discharge is expected to meet all conditions found within BOE Policy 2020-3.

B. Substitute Water Supply Plans and Non-Decreed Water Exchanges

Substitute water supply plans (SWSPs) provide water users the flexibility of exchanging and replacing out-of-priority depletions on a temporary basis or, if the applicant was to continue such operation permanently, until a court-approved plan for augmentation is obtained. For the approval of SWSPs, the State Engineer requires that the quality of the substituted water meet the use requirements to which the senior appropriators have normally put the water. The SEO reviewed and approved 216 SWSPs in 2023. Of these SWSPs, 76 were related to gravel pits. The 2023 SWSP total represents a 15% decrease from 2022. The majority of substitute water supply plans use river water as the source of substituted water.

Non-decreed water exchanges generally may or may not involve written approval. They are limited to daily or seasonal timeframes and require the local water commissioner's approval prior to the exchange occurring. The water commissioners keep records of these exchanges in the diversion records for the structures involved. The substitute supply water commonly comes from reservoirs or from bypassing stream diversions. The SEO's consideration of water quality in approving these operations is guided by Rule 6 of the State Engineer's Senate Bill 181 Rules. In 2023, the SEO did not find it necessary to review water quality data or information to ensure the requirements of use of the senior appropriator were met.

C. Decreed Exchanges and Plans for Augmentation

The SEO may oppose applications to Water Court for augmentation plans and exchanges in which the substituted water does not meet the use requirements to which the senior appropriators have normally put the water. The SEO's activities during active water court cases are guided by Rule 7 of the State Engineer's Senate Bill 181 Rules. In 2023 there were no cases where the SEO found it appropriate to opine on the water quality of substituted water. In administering water decrees, the SEO will become involved with issues of water quality where a term in a water court decree requires the State or Division Engineer to consider water quality information. The Water Judge has the ultimate responsibility to determine the adequacy of water quality when approving plans for augmentation or exchange plans.

D. Other Issues and Activities

Every year, staff at the SEO and its Division offices cooperate with public and private agencies and participate in various forums where water quality and quantity issues are considered. Staff at the SEO play an important role by providing input and advice on the impacts of proposed water policies and regulations on the water-using community.

The SEO and WQCD staff have a scheduled quarterly meeting to discuss water quantity and water quality topics of common interest. In 2023, few topics of concern arose on which staff had the need to coordinate.

As required by the Colorado Water Quality Control Act (25-8-104 C.R.S.), SEO staff members respond to referrals from the Water Quality Control Commission (WQCC) to comment on the potential for injury to water rights from actions related to discharge permit applications. These referrals stem from the Act's declaration that no provision of Article 8 of Title 25 will injure rights to put water to beneficial use.

In August 2022, the WQCC requested consultation on material injury to water rights, pursuant to section 25-8-104(2)(d), C.R.S. and the 2017 Memorandum of Understanding between the WQCC, the SEO, and the Colorado Water Conservation Board (CWCB). DWR reviewed the party's prehearing statements, which describe their water rights concerns, and participated in stakeholder meetings to better understand those concerns and describe DWR's processes. The Directors of DWR and the CWCB provided a letter to the Water Quality Control Commission in March of 2023 concluding the proposed rules would not result in a diminution of the available water supply that a water rights holder would otherwise enjoy. The letter can be accessed at the following link:

https://dnrweblink.state.co.us/dwr/0/edoc/4046042/DWR_4046042.pdf?searchid=edfb4101-9386-4824-a0ff-4a768cb247f2

After twenty-five years of distinguished State service, including six years as State Engineer and DWR Director, Kevin Rein retired at the end of December 2023. DNR Executive Director Dan Gibbs named Tracy Kosloff the interim DWR Director and Acting State Engineer through the duration of the search for a new Director/State Engineer.

HB23-1242 created the Colorado Produced Water Consortium, a group with a primary goal of reducing the use of fresh water and increasing the recycling of produced water in oil and gas operations. DWR (Tracy Kosloff) and CDPHE (Tessa Sorensen, CDPHE Energy Liaison) each have a seat on the governing body of the Produced Water Consortium, which will consider many aspects of produced water including quality and quantity.

Specific DWR activities around the state involving water quality issues are described in the sections below:

South Platte River Basin (Division 1):

- Gross Reservoir Expansion - under construction requiring the lowering of the elevation/storage of the reservoir during construction. This resulted in the reservoir bypassing or releasing more water than normal during the spring/summer season and less releases during this winter and upcoming year 2024 with the lower levels. This is all done in accordance to permitting through appropriate agencies (WQCD, USACE, etc.).

- Chimney Hollow - under construction requiring the construction of a cofferdam and release into Dry Creek, tributary to the Big Thompson River. During early summer large precipitation events resulted in the overfilling of the cofferdam and subsequent release of water for a couple of weeks this year. This water first ran into Flatirons Afterbay and mixed with the flow of Colorado-Big Thompson (C-BT) water through the system before being released to the Big Thompson River. Staff is unaware of any water quality concerns.

- Horsetooth and Carter Reservoirs - storage levels were lowered in order to complete needed repair and maintenance work. Staff is not aware of any water quality issues. Additionally, recently the C-BT delivery pipeline that discharges into Flatiron Reservoir near the City of Loveland was unexpectedly taken off-line for repairs. This will result in 60-65,000 acre-feet of water that is normally diverted into the Big Thompson System and stored/routed through Carter and Horsetooth Reservoirs to not be diverted during the winter. This will result in less flows in portions of the Big Thompson River system and reservoirs, possible lower storage levels and more demand for water this coming Spring 2024.

- Chatfield Reallocation - Chatfield Reservoir completely filled last year including the newly accessible flood reallocation storage pool. This is operated by the USACE and staff is not aware of any water quality issues.

- Lower Beaver Brook - construction continues on this reservoir and it is expected to be filled this coming winter/spring. All work has been accomplished in accordance with state, federal and local permitting.

- Lake George Low Head Dam Removal - The project to remove the old Colorado Springs diversion dam in Eleven Mile Canyon is proceeding in a timely manner. To accomplish the removal of the old structure, a flow reduction plan was implemented by all parties involved in the project. The plan was necessary to ensure optimal flows through the affected reach so that the entire flow of the South Platte River could be diverted away from the old dam while heavy equipment dismantled and removed it. At this time the structure has been fully removed and work has concluded for the winter months. The flow reduction plan is still in place, with a target flow of 65 cfs (32 cfs min., 65 cfs max.) until the end of February. Beginning March 1, the maximum flow will be increased to 130 cfs with the target still at 65 cfs until April 30, 2024. Flows closer to the maximum amount may be necessary during the second half of April in order to deliver water to Aurora Reservoir. Then, running until December 21, 2025, the goal is to keep maximum flows through the reach under 300 cfs to allow for the establishment of vegetation in the upland areas of the project location.

  At this point, due to the successful implementation of the flow reduction plan, staff is not aware of any reduction in water quality downstream from the project site. Beginning in March 2024 and running through May 2024, final upland work as needed, final revegetation, parking lot improvements, and any other needed work as defined in the Special Provisions of the flow reduction plan is expected to occur. The project will continue to be monitored by all parties involved, including Colorado Parks and Wildlife (CPW), USFS, Coalition for the Upper South Platte, Denver Water, and City of Aurora. Flows through the reach will continue to be coordinated with the Division of Water Resources District 23 water commissioner. This was all done in accordance with state, federal and local permitting.

- Cherry Creek Reservoir - USACE and other entities are looking at storing an additional 1-foot elevation in the flood pool to assist with Water Quality Issues. Staff anticipates this will occur this winter or coming spring during "no call" scenarios on the downstream river(s).

- Heavy precipitation events throughout the South Platte River Basin during May and June of this year resulted in large flow events throughout the basin. The following are of note, but did not result in any concern raised by CPW or WQCD.

    - Some lined gravel pits, like Bernhardt Reservoir in Milliken, were damaged and required draining and repair work. The draining typically occurred at low flow rates in the late summer and staff is not aware of any water quality issues.

    - In areas that experienced recent large-scale fire damage, including the Cache la Poudre River, Big Thompson River, Saint Vrain Creek, and Boulder Creek, large

sediment flows still occur during rain events. Mitigation work is ongoing, however during large precipitation events especially this year during the large rain events in May and June, several municipal providers have to modify or shut down their water diversion and potable water treatment facilities during these intermittent runoff events due to the water quality issues/concerns and difficulting treating the water during these events.

    - Many normally dry drainages tributary to the South Platte River experienced flooding events on at least three separate occasions during the May-September 2023 timeframe. This resulted in large flows in these normally dry drainages including washing debris into the South Platte River system. Several ditches and other infrastructure were damaged by these events. Fortunately, staff is not aware of any specific water quality issues from these events.

- Low flows throughout the South Platte Basin occurred this year prior to the high precipitation events in May/June. This resulted in several entities with Instream Flow or decrees with Environmental Releases/storage accounts to exercise releases to maintain water quality and adequate flows for stream habitat. The need for these operations ceased due to the high precipitation events during May into this winter.

<u>Colorado River Basin (Division 5)</u>

- In Water Year 2023 (November 1, 2022 – October 31, 2023) Division 5 experienced continued water quality impacts from the three major fires that occurred in 2020: Pine Gulch in western Garfield County, Grizzly Creek in Glenwood Canyon, and East Troublesome in Grand County. Debris flows occurred on each of the burn scars this past summer and none were to the magnitude that occurred in the summer of 2021. DWR efforts were limited in these instances. The USGS streamgage network that now includes turbidity measurements, indicates that the tributaries within the burn scars are impacted more severely than the Colorado River mainstem. Based on the turbidity data reviewed, it appears that the Pine Gulch burn scar is having the highest impact on water quality affecting Roan Creek and the Colorado River below Roan Creek (which is also impacted by the two other upstream burn scars).

- Willow Creek Reservoir typically mitigates some of the downstream water quality impacts from the East Troublesome fire. However, this year there were higher releases out of the reservoir due to a construction project at the dam in the fall/early winter. Higher volumes of the poorer water quality reservoir water were released into Willow Creek and down to the Colorado River. Typically the water would have been retained in Willow Creek Reservoir and pumped into Lake Granby.

- In 2022, DWR was notified by the dam owners that Grizzly Reservoir (at the confluence of Grizzly Creek and Lincoln Creek, tributary to the Roaring Fork River, in Pitkin County above the City of Aspen) will be drained in the summer of 2023 to complete maintenance on the dam. RJH Consultants, Inc. provided a project plan for the

drawdown of Grizzly Reservoir and requested that interested parties provide comments on the plan by December 1, 2022. Pursuant to the MOU between DWR, CPW, and CDPHE, notification was provided by DWR to the other parties of the drawdown plan and the request for comments. Due to supply constraints, this project was pushed back to at least 2024.

Yampa, White, and North Platte River Basins (Division 6)

- Similar to the past several years, DWR again protected releases from Stagecoach Reservoir to the City of Steamboat Springs wastewater discharge point on the Yampa River. Releases from the reservoir were needed to maintain lower stream temperatures to meet the Yampa River stream standards. When the Yampa River has very low streamflow, water temperatures can rise significantly. DWR protects these releases to ensure the increased streamflow is not diverted by water rights holders between the reservoir and the Steamboat Springs wastewater discharge location.

The above information completes the Senate Bill 89-181 report from the SEO to the WQCC for the 2023 calendar year.