ANNUAL REPORT
OF ACTIVITIES PERFORMED BY
THE STATE ENGINEER'S OFFICE
2021

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 2021.

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. These are:

- 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). Domestic and commercial water wells are constructed by licensed well drillers. 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 fines 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 increased by 25% in 2021 over 2020, illustrating a strengthening economy after the first pandemic year of 2020. Monitoring hole notice-of-intent to drill (NOI) forms received by the SEO were up about 5%, also. 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	2018	2019	2020	2021
1. Permits Issued	6264	5621	5784	7267
2. Monitoring Hole Notice-of-Intent	1028	921	975	1019

Table 2 summarizes annual BOE activities (through the Well Inspection Program) for the last four years. In 2021, DWR continued to see the positive effects of implementing the recommendations of the State Auditor's Well Inspection Program review (described on page 3). The 2019 jump 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. Approved well construction variances (from the Construction Rules) in 2021 were on par with 2020. The Board licensed 248 contractors in 2021, four more than in 2020. 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.

Table 2 –Board of Examiners Annual Activity Summary

BOE Activity	2018	2019	2020	2021
1. Complaints Investigated	39	99	33	14
2. Resolved Complaints	29	68	52	15
3. Stipulate Settlements (total dollars)	19 ($7600)	51 ($45,600)	26 ($13,800)	4 ($1,500)
4. Licenses suspended or revoked	0	0	0	0
5. Letter of admonition/reprimand	24	15	8	1
6. Inspections	722	705	1202	1182
7. Well Construction Variances	155	85	107	105
8. Licensed Contractors	234	242	244	248

The *Well Inspection Program* was authorized by the legislature in Senate Bill 03-45 and funded by a $40 increase in 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 Board 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 2021 were slightly down from 2020 (3%).

In 2018, the Colorado Water Well Contractors Association requested a financial and performance audit of the Well Inspection Program. The Office of the State Auditor released their report, *Water Well Inspection Program, Performance Audit*, in late May 2019.

DWR met with the Legislative Audit Committee (LAC) twice in 2020 and again in September 2021 to report on progress implementing the audit recommendations. At this last meeting, the LAC reviewed the SEO's report and metrics and agreed the Well Inspection Program had performed well on audit recommendations.

In 2020, a new policy addressing well construction groundwater discharge was implemented (BOE Policy 2020-3 *Short-Term Discharges to Groundwater from Water Well Activities*). In accordance with the policy, in December 2020, BOE staff reviewed and approved the discharge from an extended aquifer test related to the Upper Laramie aquifer in Weld County.

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

Substitute water supply plans (SWSP) provide water users the flexibility of exchanging and replacing out-of-priority depletions on an interim 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 227 SWSPs total in 2021. Of these SWSPs, 70 were related to gravel pits. The 2020 SWSP total represents a 6% increase from 2020 and a 23% increase since 2019. The majority of substitute supply plans use river water as the source of substituted water.

Non-decreed water exchanges generally do 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 usually comes from reservoirs or from bypassing stream diversions. Seldom has an applicant used treated wastewater or other supplies with water quality concerns in a non-decreed exchange. Therefore, the water used in these exchanges generally does not create water quality problems.

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 generally does not participate in Water Court cases where the parties who are directly impacted can be expected to raise concerns with respect to water quality issues. However, the SEO will become involved in two instances: First, where there are exchanges involving treated wastewater, the SEO requires the exchanged water be of a quality that meets the requirements of use to which other vested water rights have normally been put or that exchanged water meet the existing water quality standards for discharges to the receiving stream. Second, in administering water decrees, the SEO will become involved with issues of water quality where the Water Judge makes water quality monitoring a part of the decree. The Water Judge has the ultimate responsibility to determine the adequacy of water quality when approving new water right applications, 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.

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. A memorandum of understanding outlining the procedures and scope of consultation between the WQCC, SEO and Colorado Water Conservation Board (CWCB) under 25-8-104(2)(d) C.R.S. was updated and signed in January 2017.

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

<u>South Platte River Basin (Division 1):</u>

In the Cache la Poudre River basin, post-wildfire issues were experienced during precipitation events over the Cameron Peak and East Troublesome wildfire areas including debris flows, sediment loading, and other water quality issues. This required water users, primarily municipal users, to temporarily cease diversions directly from the Cache la Poudre river intermittently through portions of 2021. SWSPs and administrative approvals were issued in some circumstances to allow alternative water supply operations during several periods of interruption during 2021. Additionally, huge post-wildfire cleanup,

recovery, and mitigation efforts were undertaken in all the burn areas in the headwaters of the Cache la Poudre, St. Vrain, Big Thompson, and Boulder Creek basins in Division 1.

Communication continues with EPA, CDPHE, and the owner of Left Hand Park Reservoir above the active Captain Jack Mill Superfund site to mitigate any repeat of 2020 high flows that occurred across the site due to the reservoir's operation.

Communication between DWR, CDPHE, and the Colorado Department of Parks and Wildlife (CPW) occurred regarding the ongoing rehabilitation and maintenance construction activities at Ralston Reservoir, including minimizing sediment entrainment during the draining of the reservoir, which commenced in September 2020. It is anticipated that the work will be completed and the reservoir will begin to fill in the Spring of 2022.

Gunnison River Basin (Division 4)

High temperatures from July until September resulted in elevated water temperatures in many stream sections on the western slope. CPW owns 1,500 acre-feet of storage in Silverjack Reservoir in the headwaters of the Cimarron River, and during such stressful times for the river's fishery, CPW will request a release of the storage to improve flows and reduce water temperatures in the river for an extended period. DWR manages the accounting of the pool of water in Silverjack Reservoir and was notified to account for the release of the storage pool from July 13 to September 15, 2021. The subsequent monsoonal event helped to prop up base flows in the river as well as helped to reduce temperatures for the rest of the season.

Colorado River Basin (Division 5)

In irrigation year 2021 (November 1, 2020 – October 31, 2021) Division 5 experienced significant 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.

Several debris flows were caused by rain on the Pine Gulch burn scar and impacted Roan Creek and the Colorado River. DWR efforts were limited in these instances, but the U.S. Geological Survey (USGS) did install water quality sampling at several locations in the region.

Numerous significant debris flows occurred due to rain on the Grizzly Creek burn scar. Subsequently, DWR staff inspected dam safety of the Shoshone Diversion Dam and inspected the debris flows that dammed the entire Colorado River within Glenwood Canyon. The Colorado Department of Public Safety, Division of Homeland Security & Emergency Management coordinated the efforts that included numerous state and federal agencies, local partners, and local water providers. Middle Colorado Watershed Council (MCWC) led the efforts of acquiring water quality sampling equipment and assisting local municipal water providers with information and assistance. CDPHE, USGS, and the Colorado River Water Conservation District (River District) played key roles in funding and assisting MCWC's efforts. Much of the debris remains in the Colorado River, which the Colorado Department of Transportation is working with the Federal Highway Administration for funding support and Union Pacific Railroad on logistical options to bring in heavy

equipment and remove a majority of the debris from the largest debris flows via I-70 and the rail line.

Several debris flows occurred due to rain on the East Troublesome burn scar during 2021 affecting water quality in Willow Creek and the Colorado River. DWR has had limited interactions with other entities on specific debris flow water quality issues. Grand County and Northern Water Conservancy District (Northern) have been the lead entities working on fire recovery efforts and dealing with water quality issues. DWR has assisted Middle Park Water Conservancy District (Middle Park), Northern, River District, and Grand County to look into temporary water supplies that could be used to assist in revegetating fire impacted areas and provide alternative water supplies to individuals and entities whose water supply systems were impacted. A solution is not yet in place and efforts continue to finalize the potential options.

The Colorado River had high turbidity levels most of the year primarily due to the debris flows on one or more of the burn scars.

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

Similar to 2020, in 2021 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 lower stream temperature to meet the Yampa River stream temperature 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 2021 calendar year.