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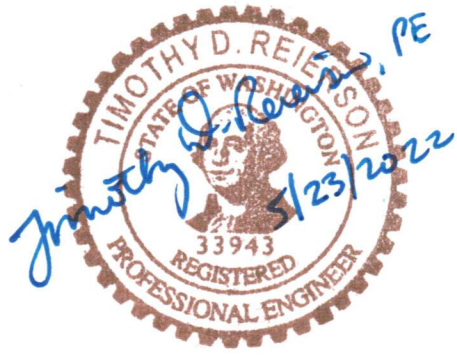
TECHNICAL MEMORANDUM



DATE: May 23, 2022

TO: Spokane County Water Conservancy Board

FROM: Tim Reierson

SUBJECT: **Supporting Technical Information**
Greiff Applications for Change Under Certificate Nos.
4057 (SPOK-22-01), 4589-A (SPOK-22-02) and G3-01333C (SPOK-22-03)

This memorandum offers supporting information and opinion regarding tentative determination of extent and validity, annual consumptive quantity, and impairment potential.

Introduction

The above three change applications request a change in place of use for all three water rights to a common boundary, and an increase in acres to 100 acres for each water right, not to exceed 100 acres total in combination. No changes in water right sources are requested. The requested added place of use adjoins both currently authorized places of use. *See* Map **Attachment 1**. The farm is located on Wild Rose Prairie about 15 miles northerly from Spokane. The three water right certificates requested for change are summarized in **Table 1**.

Document	Priority	Issued	Flow Rate	Annual Volume (af/yr)	Purpose
Certificate **4057**	Aug 24 1949	Jun 6 1951	0.12 cfs (54 gpm)	not specified	irrigation of 12 acres season not specified
Certificate **4589-A**	Oct 8 1962	Aug 23 1963	50 gpm	20 af/yr	irrigation of 5 acres season not specified
Certificate **G3-01333C**	July 2 1968	Mar 7 1983	100 gpm	68 af/yr	irrigation of 20 acres April 1 to October 1
		TOTALS:	*204 gpm*	*136 af/yr [1]*	*37 acres irrigation*

Note [1]: Assumes 4 ft average duty for SWC 4047 based on AgWeathernet model, grass/alfalfa, approx.

Table 1. Summary of water rights requested for change/transfer.

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History of Use

The lands relating to the change applications have been under cultivation by three generations of the Greiff family. Robert H. Greiff grew up on the farm, and continues to work the farm together with his son Robert W. Greiff. Robert H. Greiff's father William Greiff applied for the earliest water right No. 4057 in 1949.

SWC 4057. Initial rights from an unnamed spring tributary to Wethey Creek were requested in 1949 and granted for irrigation of 12 acres under **SWC 4057**, which issued in June 1951.

GWC 4589-A. In 1962, William Greiff filed application for 250 gpm and 10 acres of added irrigation from a well site near the spring. The request was granted but reduced to 50 gpm for irrigation of 5 acres under permit issued in 1963, with certificate **4589-A** issuing in August 1963. The application noted plans for a 4 ft diameter dug well. Robert H. Greiff (senior) recalled that this well was initially constructed using concrete tile, however there were problems advancing the tile and the well pumped too many sediments to be usable. Another attempt was made using wooden cribbing in a square frame, with the same result. Mr. Greiff recalled that a successful well was finally constructed during the summer of 1965. Due to personal circumstances he had distinct memory of the time. The well was drilled to 39 feet and finished with a 12-inch production casing. No well log was found in state records as there was no requirement to record them at that time.

A question arises about the source of water used under GWC 4589-A, because the certificate had already issued in August 1963. Mr. Greiff recalled the spring was used as the source for 4589-A during the first well attempts. In the author's opinion, there are three main lines of reasoning for the validity of the certificate. First, under Western Water law, beneficial use is key. The completion of construction form filed in April 1963 refers to a "well". The proof of appropriation filed in June 1963 claims the source of appropriation was a "spring". The form was returned by the state (not for that reason) and refiled sometime after July 3, certified by the state in August 1963 for a well. By today's understanding of hydraulic connection between ground and surface waters, the shallow well source was taking the same water for priority purposes as the spring. Both were located within the authorized source area. As mentioned, according to Mr. Greiff the spring was used until the drilled well was completed in 1965. In other words, the water right was exercised from the spring until a fully functioning well was completed in 1965. The Oregon Supreme Court ruled on a similar situation in 1998 that was focused on relinquishment statutes—so is not directly on point—but is consistent with the premise that beneficial use is key. *See* **Attachment 2**.

Second, Washington courts and Ecology policy/practice recognize "after-the-fact" or "de facto" changes in source, contingent on beneficial use continuing and the change being approved after-the-fact. This ensures, formally, that the right has been exercised from the same hydrologic source and there is no impairment to existing rights. There are numerous examples within the

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recently completed Yakima River basin adjudication affirmed by county superior court, where headgates were destroyed by flooding and practical measures were taken to continue water uses from new source locations, though without following the change requirements of statute at the time. The court affirmed such rights based on beneficial use, subject to formal changes to be pursued through Ecology. Ecology policy acknowledges the practical fact of unauthorized changes and gives guidance for addressing such situations. POL 1120, *See* No. 7.

Third, it is noted the current well was drilled within 5 years of the permit having issued, which by any measure is within a reasonable due diligence period for development of a water right. It appears the completion and proof forms were filed too soon. With hindsight, the correct sequence of steps would have been to request extension of time for completion until the 1965 well was drilled, and to delay proof filing until after the 1966 season to allow a full season of use from the well. My opinion here is based on review of thousands of water right records over a period of 33 years. It's been my experience that water right applicants often do not understand the instructions or the significance of the various forms and requirements placed upon them during the water right permitting process. My reading of the records for the Greiff water rights is that misunderstandings did occur.

Based on the recollection of Mr. Greiff and file documentation, the water was beneficially used: first attempted from inadequate well sources, beneficially used during that time from a spring, and finally completed from a functioning well all in close proximity. Under this fact pattern, I conclude the water right vested as substantially compliant with its permitting under state law.

G3-01333C. The historic farmlands, now requested as a combined place of use, fall within two 80 acre parts (gross area), one lying north of Ridgeway Road (W1/2SE1/4 Sec. 4), and one lying south (W1/2NE1/4 Sec. 9). In 1968, other landowners complained to the state Department of Water Resources that the Greiffs were irrigating both north (where then-existing rights authorized) and south of Ridgeway Road (without water right coverage at that time). Greiffs filed application for permit on **July 2, 1968** requesting to irrigate all 80 acres within the south part of the farm, and 40 acres in the north for a total of 120 acres of irrigation. The application was not decided until **April 1975**. The Department of Ecology (successor agency) reduced the acreage to 20 acres in its decision, reasoning that 100 gpm was not sufficient to irrigate 120 acres. Ecology approved the permit to include **both north and south areas of the farm** (see application attachments for permit). The water right issued for the well then supplying **GWC 4589-A**. On the 1968 application form it was described as an existing well 12 inches in diameter and 39 feet deep, consistent with the previous discussion (well constructed in 1965) for 4589-A.

In 1977, Robert H. Greiff filed proof of appropriation for irrigation of 100 acres within the "SW1/4 of Sec. 9" (Sec. 9 lies south of Ridgeway Rd). This description was not accurate (actual farmlands and permit-authorized place of use were within "W1/2NE1/4, Sec. 9 and W1/2SE1/4, Sec. 4…" but it gave indication of the farming practice and actual irrigation as extending south of the road.

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When Ecology issued certificate G3-01333C they removed the south portion from the place of use. Although the record does not fully explain this action, it appears to have been done because the total acres among all three rights, on their face, had been reduced to 37 acres. In the context of actual beneficial use, as will be discussed next, aerial photos show the south lands being irrigated in 1972. File documents show that in 1977 an Ecology inspector witnessed the irrigation south of the road. As related to the author, Mr. Greiff continued to assume he had authority to irrigate south (and north) of the road as had been authorized by the permit, and did so. In discussing this with Mr. Greiff, it is clear to me there was a misunderstanding about how Ecology limited the water right at certification (removing the south lands), compared to his application, intent, and actual use of water.

Aerial Images. The author reviewed aerial images from publicly available sources. Images spanning the decades since the 1970s show cultivated farmland under irrigation, consistent with the long-standing practices described first-hand by Mr. Greiff: irrigation both north and south of Ridgeway Road. A July 7, 1972 aerial photo of the farm shows about 120 acres cultivated, with irrigation patterns clearly evident south of the road. Similar images were found, taken in 1982 and 1991. *See* **Attachment 3**. Google Earth has numerous images from 1995 to the present showing the same consistent pattern of irrigation of the north and south lands. It wasn't until the Ecology letter in late 2019 that prompted Mr. Greiff to verify that his 50 years of historic irrigation practices were not consistent with the paperwork.

Dilemma for Making Correction. State water right law does not provide a clear path for correcting errors or misunderstandings that happened in the long-ago past. Mr. Greiff received a letter from Ecology dated **August 28, 2019**, pointing out irrigation in the south part of the farm, and requesting evidence of water rights. Mr. Greiff then contacted the author, and I researched the water right record as it is described here. I advised Mr. Greiff to limit irrigation to 37 acres within the north part of the farm for a period of at least two years, which would set the stage for an application to increase the acres under RCW 90.03.380. The Greiffs irrigated according to this plan during 2020 and 2021, and the water spreading calculations can now be made following standard procedures.

Tentative Determinations of Extent and Validity

Tentative determinations of extent and validity are based on evidence of historic water use, and with consideration of relinquishment statutes. For over 50 years the well and spring have been used in combination to supply an integrated system, and the water rights likewise have been used in combination. Estimates of use are for the combined supply. Three lines of evidence are used to quantify annual use: crop demand method, wheel line run-times (available for 2020 and 2021 only), and electrical energy consumption. Water use south of Ridgeway Road for the years 2017-2019 is removed for the crop demand and wheel line run-time methods (north 37 acres only), but the full water use north and south is included in the energy use.

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Crop demand method. The original farm grew potatoes in rotation, however as a small family farm it became uneconomical as the potato market changed. In more recent decades the cropping has included alfalfa hay, grass, oats, small grains, wheat and triticale. At the present time, the five-year look-back encompasses the years 2017-2021. Focusing on the north portion of the farm, during 2017-2019 alfalfa was grown. During 2020, a planting of oats was made, followed by a new planting of alfalfa just before emergence of the oats. During 2021, the new alfalfa stand was irrigated.

Crop irrigation requirements (not including application efficiency) were derived from AgWeathernet model results for the Green Bluff climate station, located 10 miles easterly. An irrigation season from April 1 through October 1 was used. Results are shown in **Table 2** below. Specific designations for oats and triticale are not given within AgWeathernet but can be approximated under Spring Grains or Winter Wheat, depending on planting times. The *crop irrigation requirement*, expressed in inches of water applied over an area, is then divided by the *application efficiency* of the irrigation equipment to arrive at the *total irrigation requirement*. Ecology guidance document GUID 1210 states the average/typical total application efficiency for wheel lines is 75%. This factor was used to calculate the total irrigation requirement each year, for each crop. These values are included in **Table 2** paired with the crop requirement.

Crop	Crop Irrigation Requirement – April 1 through October 1 (in) with Total Irrigation Requirement after front-slash (in)				
	2017	2018	2019	2020	2021
Alfalfa	42 / 56	40 / 53	38 / 51	40 / 53	44 / 58
Grass (Pasture,Turf)	37 / 49	35 / 46	33 / 44	35 / 47	38 / 51
Spring Grains	22 / 30	22 / 29	22 / 29	20 / 27	26 / 35
Winter Wheat	15 / 20	16 / 21	16 / 22	15 / 20	19 / 26
Potatoes	27 / 36	26 / 34	25 / 33	24 / 32	28 / 37

Note: There are some small differences due to rounding.

Table 2. Green Bluff station AgWeatherNet model results for crop irrigation requirements.

The consumptive use, needed for the annual consumptive quantity estimate, is estimated using a percentage of the total irrigation requirement, and is specific to the irrigation equipment and management practices. Ecology guidance document GUID 1210 states the typical/average percent consumptive use is 85% of the total irrigation requirement.

The variety of crops shown in **Table 2** represents historic cropping for the farm, and will have relevance to later discussion of overall water use. For the annual consumptive quantity estimate, the five-year look-back will focus on farmland north of the road and be limited to 37 acres by the water rights. For the time period from 2017-2021 these lands were farmed in alfalfa hay. In 2020, there was also a planting of oats, before the alfalfa planting that year. Results for alfalfa cropping, AgWeathernet model, and using these average values are given in **Table 3** below.

Year	Irrigation Area (ac)	Annual Total Irrigation Requirement (ac-ft)	Annual Consumptive Quantity (ac-ft)
2017	37 ac	173 ac-ft	147 ac-ft
2018	37 ac	164 ac-ft	140 ac-ft
2019	37 ac	157 ac-ft	134 ac-ft
2020	37 ac	164 ac-ft	140 ac-ft
2021	37 ac	180 ac-ft	153 ac-ft

Table 3. Annual volume estimates using AgWeatherNet data, based on crop and equipment.

These estimates exceed the collective water right limit of 136 ac-ft/yr (also estimated—see **Table 1**). This shows the water right limits as causing deficit irrigation if all acres are in high water use cropping. As these estimates are based on a generalized model, we next turn to estimates from on-farm use data.

Wheel line run times. To help estimate actual use of water, the applicant tracked wheel line run times for irrigating the 37 acres of alfalfa hay during 2020-2021. (Aerial photos show more than 37 acres under cultivation in the north, however lands on the very north of the farm drop down in elevation towards the water table and subirrigate. Lands south of the road were dryland farmed.) Because of the many variables, the accuracy is estimated to be no better than 10 to 20% by this method. Operating conditions were: 11/64 nozzle sizes, end line pressure about 50 psi, source pressure about 90 psi, with 60 psi estimated as representative for the sprinklers, equating to about 5.5 gpm per sprinkler. During 2020-2021 the two wheel lines used were estimated to run at 180 gpm each. Copies of the hour logs (hours at 180 gpm) are included in **Attachment 4**. Results are shown in **Table 4** below.

Year	Irrigated Area	Total Time Irrigated (hrs)	Total Annual Water Applied	
			ac-ft	inches
2020	37 acres	2733 hrs	91 ac-ft	30 in
2021	37 acres	4309 hrs	143 ac-ft	46 in

Table 4. Water use estimates based on hours of irrigation.

Both years 2020 and 2021 were unusually hot and dry. The year 2021 represents full use of the water right but supplying only 80% of the irrigation demand for maximum crop production, based on the year 2021AgWeathernet prediction for alfalfa. During the year 2020, the reduced amount of water was due to a lack of water from the supply. There were two unfortunate events preventing full use. The well had a mechanical problem and had to be repaired. Later, there was a power outage, and the system was down while waiting for the utility to trim trees around the power lines. All repairs were slowed due to the pandemic.

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Electrical Energy Use. Energy use by hydraulic machinery provides another independent estimate of water pumped. The equation relating volume of water pumped to electrical energy consumption is written from the definition of pump efficiency. The pump efficiency is the ratio of the power output (hydraulic power added to the water by the pump) to the power input (electrical power delivered to the pump motor). The amount of water pumped depends primarily on the pumping lift, the pressure added to the water as measured at the discharge of the pump, and the collective efficiency of the machinery, also known as the "wire to water" efficiency. In equation form, rearranged to solve for the volume pumped:

Volume pumped = (efficiency) x (Electrical Energy Input) x (Conversion Factor) / (Head)

The Head term represents the load on the pump and is estimated as the vertical distance that water is lifted by the pump from the surface of the water source to the outlet of the pump, plus the distance that the pump would raise the water above the pump outlet, which can be calculated from the discharge pressure. Miscellaneous energy losses are also included in the Head term.

The conversion factor is 0.9769 (acre-ft^2) / (kW-hr) and it incorporates the unit weight of water. The conversion factor assumes that the units of electrical energy input are kw-hr and the Head is expressed in feet. The equation then returns units of volume pumped as acre-feet (af).

Records of electrical energy use to power the two irrigation pumps were obtained for the years 2015-2021 and converted to water use estimates using the following average pumping conditions: 90 psi discharge pressure, 30 feet lift and losses, and wire to water efficiency of 65%. According to Mr. Greiff, the well originally had a 15 hp pump which he described as over-sized, but was replaced with a 5 hp submersible many years ago. There is a 10 hp pump from the spring, and the pumps are generally operated together and can produce the 204 gpm authorized by water rights. **Table 5** below shows the results.

Year	Pump Energy Use (kW-hr)	Volume Pumped (acre-feet)
2015	55243	147
2016	36756	98
2017	28079	75
2018	45562	122
2019	42705	114
2020	32436	87
2021	53637	143

Table 5. Estimate of water pumped based on electrical energy use.

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Operating conditions will vary somewhat in real-time operations, and the efficiency is also an estimate, so the estimates from energy use should be understood as having a range of accuracy in the ballpark of 10-20%. The energy use method was calibrated to the year 2021 hours-run estimate by selecting 30 feet to represent the lift and losses term. Both estimates were then 143 af for 2021. The 30 feet value is consistent with the physical setting and reasonable to expected energy losses. These same assumptions, when applied to the year 2020, show close agreement to the hours-run estimate for 2020 (91 ac-ft), and therefore some confidence is placed on earlier years' use energy-method predictions within **Table 5**.

Discussion. Regarding the energy use method, it can be seen from **Table 5** the water use varied significantly year-to-year on the Greiff farm. The years 2020-2021 represent total use on only 37 acres, however during prior years, the energy use reflected irrigation of the entire farm. 2015 is notable as a severe drought year, as were 2020 and 2021 (year 2020 low usage due to system problems). 2019 was an unusually cool year, with a late start. The primary reason for fluctuating annual water use can be explained by cropping. During the high use years, water is run continuously, changing between fields in a way that allows for drying and haying while continuing to irrigate elsewhere. This can be seen in the "checker board" pattern of fields in the aerial photo within **Attachment 3**. During lower use years, the mix of crops favors the lower use rotations or deficit irrigation. The mix of crops can be used in a variety of situations with varying water needs, giving them a flexibility that was used on the farm, for water management and agronomic best practices.

The hours-run estimates were in close agreement with the estimates by energy use, giving some confidence they provide reasonable estimates of actual water use. The author recommends using **90 af for the year 2020**, and **136 af for the year 2021** (limited to 136 af by water rights).

Regarding relinquishment, based on Mr. Greiff's first-hand knowledge, the cropping and farm practices, aerial photos, and power records, it is the author's opinion that the rights have not been relinquished. During the years with power records as evidence, the years with lower use are excused under exemption for rotational practices, and in addition the year 2019 was dramatically low for crop demands across Eastern Washington due to weather conditions.

Based on the above evaluation and discussion, the author recommends the three water rights be tentatively determined as valid, in the quantities listed in **Table 1**.

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Estimate of Annual Consumptive Quantity

Annual consumptive quantity defined. The annual consumptive quantity is defined by statute as "the estimated or actual annual amount of water diverted pursuant to the water right, reduced by the estimated annual amount of return flows, averaged over the two years of greatest use within the most recent five-year period of continuous beneficial use of the water right". RCW 90.03.380. The statute allows for the five-year period to begin at different times depending on circumstances, however in this case the five years of interest are taken as the most recent. Return flows can be included in the annual volumes, as changed, if there is no increase in annual consumptive quantity.

The water use estimates in **Table 5** from energy consumption provide upper limits on the annual use for the most-recent five years. Upper limits, because for 2017-2019 a portion of the use reflected in the estimates occurred on acres south of Ridgeway Road. The alfalfa north of Ridgeway Road was not irrigated as intensively, which equates to less production and fewer cuttings when the entire farm (north and south) is irrigated. For this reason, the years 2020 and 2021 are taken as the two years of greatest use "pursuant to the water right", and their average is taken as: (90 af + 136 af) / 2 = **113 af**. The full production crop requirement for alfalfa during 2020 and 2021 was predicted as 53 and 58 inches by the Agweathernet model (**Table 2**). This equates to 163 af and 179 af to supply the full alfalfa crop demand for 37 acres, respectively. Comparing to applied water, the year 2020 crop received (90/163) = 55% of full crop demand, and year 2021 crop received (143/179) = 80% of full crop demand. Based on these deficit management practices, the consumptive use factor is taken as 90%.

Using 2021 as an estimate of past consumptive use gives (136 x 0.9) = **125 af/yr**.

In this case, the ACQ averaging result for annual volume (113 af/yr) reduces the (future) total allowable water use below past consumptive use (125 af/yr), and therefore the statutory requirement to *not* increase consumptive is satisfied. With the management and cropping practices required to irrigate 100 acres using 113 af, the future total use can be considered 95-100% consumptive due to deficit irrigation.

Practical Considerations, Monitoring. The applicant undertook these changes by necessity. The farm cannot support the family depending on it, with only 37 acres of irrigation. The applicant believes they can continue to irrigate 100 acres going forward. This will require deficit irrigation and greater areas of lower use cropping. It is anticipated that a flow meter will be required, and so the applicant will be able to monitor use and stay within the new annual volume limits.

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Impairment Potential

Changes to water rights are not permitted if other existing water rights would be impaired. Because there is no change requested in source locations, no impairment will occur provided the consumptive use is not increased. Consumptive use will be reduced compared to historic practices, due to the overall reduction in total water use. Because deficit irrigation practices are anticipated, the consumptive use has been factored into the total water right recommendation such that consumptive use is not increased. For these reasons, impairment of existing rights, will not occur.

Attachment 1 Map
Attachment 2 Oregon Court Case
Attachment 3 Aerial Photos
Attachment 4 Wheel Line Hour Logs, 2020-2021

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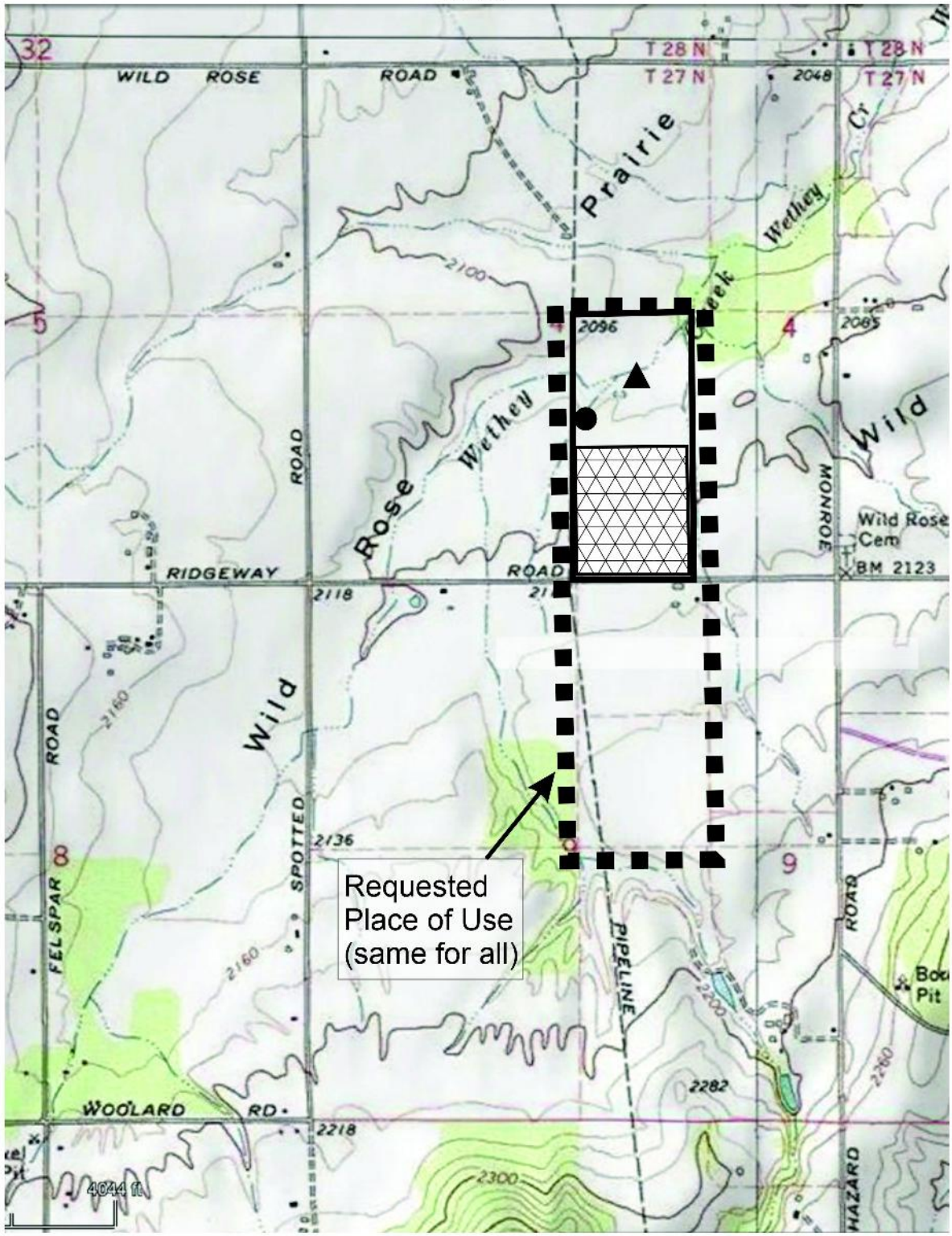
T28N
T27N



▲ Current Source (Spring) SWC 4057 (no change)
● Current Source (Well) GWC 4589-A and G3-01333C (no change)

Current Place of Use - SWC 4057 and GWC 4589-A
Current Place of Use - G3-01333C

Attachment 1 - Map - Change Application Request

OREGON COURT HOLDS THAT USE OF AN UNAUTHORIZED POINT OF DIVERSION DOES NOT RESULT IN FORFEITURE

(Robert E. O'Rourke & Stephen M. Bloom, Oregon Reporters)

The case of *Russell-Smith v. Water Resources Dep't*, 152 Or. App. 88, 952 P.2d 104 (1998), provides legal authority in Oregon for the proposition that the diversion at an unauthorized point of diversion does not constitute a nonuse of water. In *Russell-Smith*, the petitioner sought the review of a final order of the Director of the Water Resources Department dismissing a proceeding to cancel the individual respondent's water right on the basis of nonuse. The court of appeals framed the dispositive question as "whether a holder of a water right who (1) takes water from the authorized source but (2) does so from an unauthorized point of 'diversion has failed to use all or part of the water appropriated,' triggering forfeiture of the water right." Or. Rev. Stat. § 540.610(1) (1997). The Director concluded that there was no forfeiture in those circumstances and the court of appeals affirmed.

Petitioners filed affidavits in support of their claim of forfeiture and the respondents protested the Department's proposed cancellation of water rights. A contested case hearing was held and the Administrative Law Judge issued a proposed order that determined that there was no forfeiture due to nonuse. Thereafter, the Director, on review, issued her final order. The Director adopted the ALJ's findings of fact in their entirety and, in response to petitioner's exceptions, added a conclusion of law:

> Where water has been used from the proper source, on the correct lands, for the authorized purpose, diversion at an unauthorized point of diversion does not constitute failure to use the waters appropriated and will not serve as the basis for a finding of forfeiture.

952 P.2d at 106.

On review before the court of appeals, the petitioner contended that the Director erred in concluding that appropriation of water from an unauthorized point of diversion cannot serve as the basis

continued on page 3

POINT OF DIVERSION

continued from page 1

for a finding of forfeiture. The court of appeals did agree with petitioner that the record did not demonstrate that the respondents actually took water from the designated point of diversion. Nevertheless, the court of appeals held that that error by the Director was not dispositive and may be immaterial depending on the court's disposition of the assignment of error challenging the Director's legal conclusion that taking water from the designated source, but at an unauthorized point of diversion, does not trigger forfeiture. The court held that if the Director is correct in that regard, then it makes no difference whether the respondents took water at the designated point of diversion in the certificate so long as they continued to take water from the authorized source for authorized use.

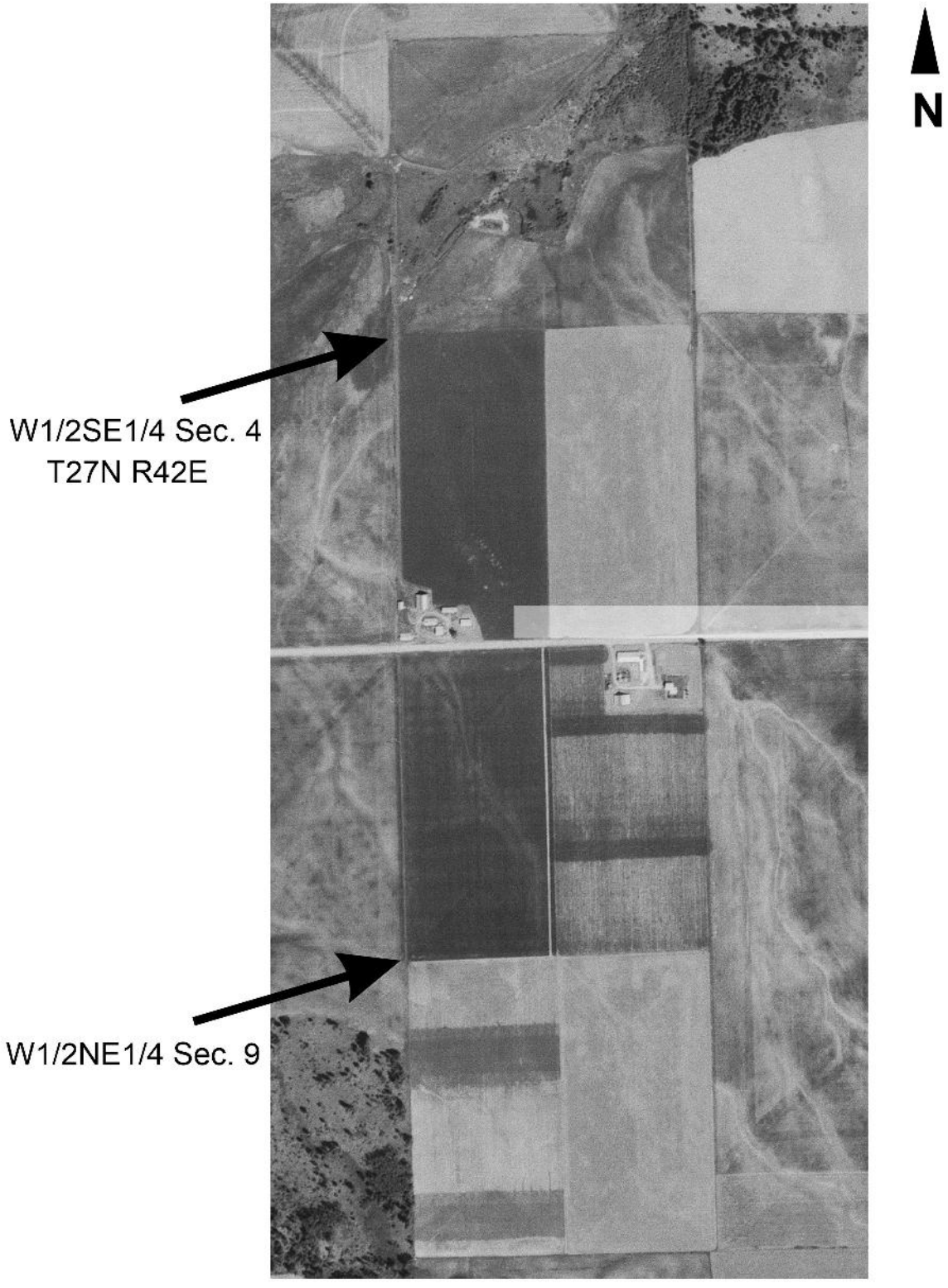
The court reviewed Oregon's forfeiture statute and its transfer statutes dealing with changing place of use, character of use, and point of diversion. The court concluded that it is clear under Oregon's transfer statutes that a certificate holder who wishes to change the point of diversion designated in the certificate must file an application with the Water Resources Department. It is also clear that under Oregon's forfeiture law, the "failure to use" water for five years will result in a forfeiture of that right. The court then noted that it was not clear, however, whether taking water from the designated source but from an unauthorized point of diversion can result in forfeiture. Oregon's forfeiture law makes no mention of points of diversion but only refers to "use" and "failure to use."

This is a case of first impression before the Oregon appellate courts. The court noted that the resolution is "by no means clear-cut." Nevertheless, the court concluded that there is no forfeiture under Or. Rev. Stat. § 540.610 (1997) (Oregon's forfeiture law) when a water user uses water from the designated source, and for designated purposes, but from an unauthorized point of diversion. The conclusion, which the court noted comports with the law of most other western states, flows from four considerations:

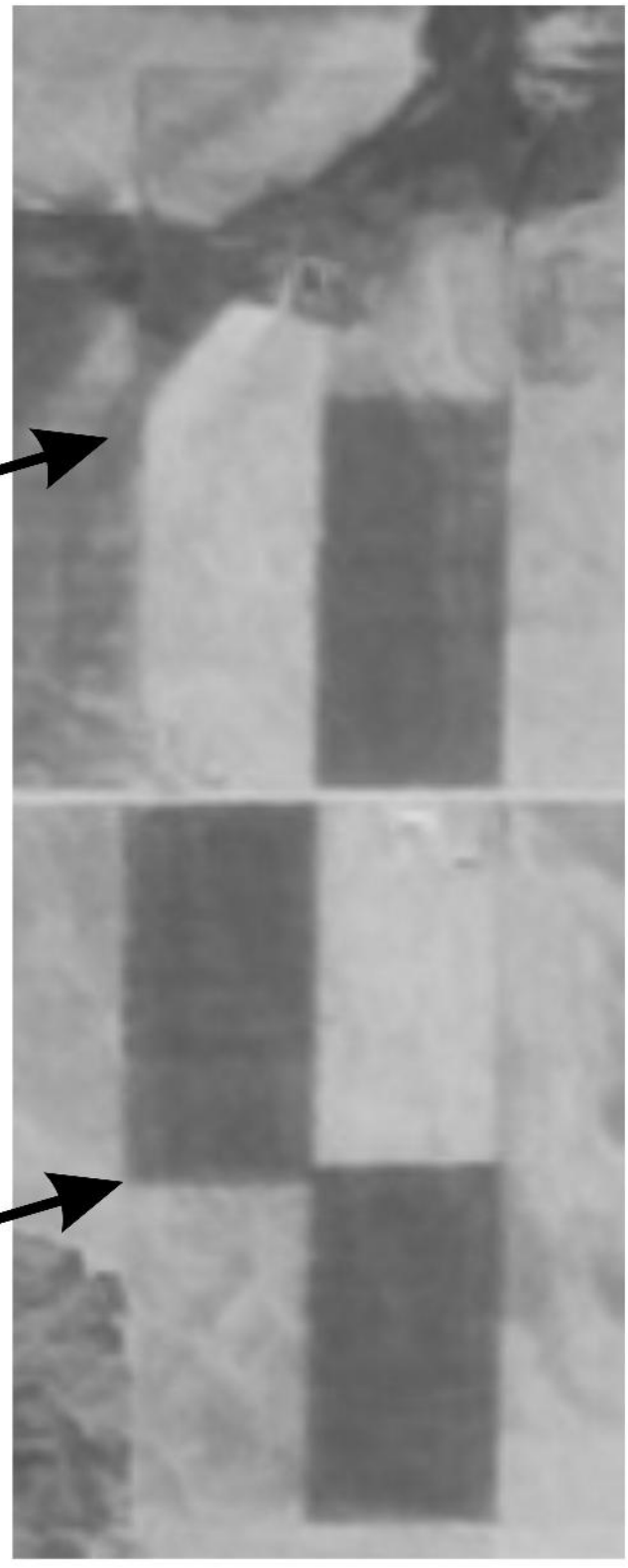
1. Oregon's water laws treat "use," "beneficial use," and "point of diversion" as distinct concepts;
2. The forfeiture statute, Or. Rev. Stat. § 540.610 (1997), focuses on, and speaks exclusively of "use" and "beneficial use," without any reference to "point of diversion";
3. Although other statutes do address unauthorized changes in point of diversion, none refer to forfeiture as a consequential remedy; and
4. Under the statutory scheme, the lack of forfeiture does not mean that certificate holders can engage in unbridled and disruptive changes in points of diversion. Rather certificate holders who effect unauthorized changes in points of diversion are subject to substantial sanctions, including penalties and, in appropriate cases, criminal sanctions.

Given the totality of the statutory scheme, the court concluded that if, as in this case, a certificate holder makes an unauthorized change of point of diversion, but continues to use water from the designated source in the designated amount and for the designated use, there is no "failure to use" within the meaning of Or. Rev. Stat. § 540.610(1) (1997).

Attachment 2

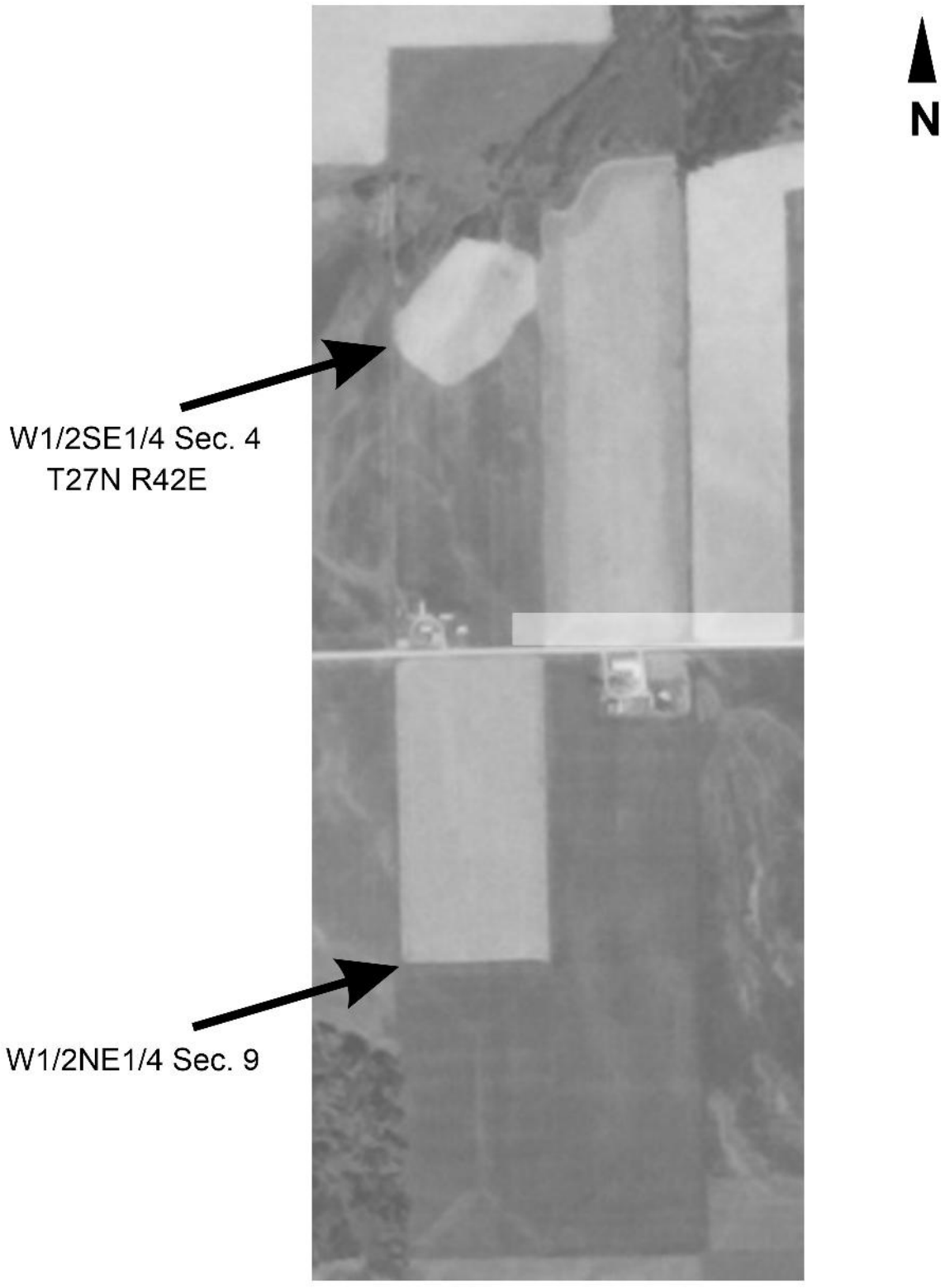


USGS Aerial Photo Single Frame Dated 1972-07-05.



0.5 mile (approx.)

USGS NHAP Dated 1982-06-23.



USGS NAPP Dated 1991-07-06.

YEAR 2020 IRRIGATION WATER USE RECORD

DATE	Wheel line #1 Run times	Wheel line #1 Down Time	Wheel line #2 Run Times	Wheel line #2 Down Time	Comments
5/9/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	Water Source discharge Pressure 90 PSI
5/10/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	End of Line Pressure 50 PSI
5/11/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/12/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/13/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/14/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/15/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/16/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/17/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/18/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/19/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/20/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/21/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11
5/22/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	11

YEAR 2020 IRRIGATION WATER USE RECORD

DATE	Wheel line #1 Run times	Wheel line #1 Down Time	Wheel line #2 Run Times	Wheel line #2 Down Time	Comments
5/23/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	Water Source Discharge Pressure 90 PSI
5/24/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	End of line Pressure 50 PSI
5/25/2020	3:00 PM	30 minutes to move	3:30 PM	30 minutes to move	
5/26/2020	3:00 PM	30 minutes to move	5:00 AM 5:00 PM	60 minutes to move	
5/27/2020	3:00 PM	30 minutes to move	5:00 AM 5:00 PM	60 minutes to move	
5/28/2020	3:00 PM	30 minutes to move	5:00 AM 5:00 PM	60 minutes to move	
5/29/2020	3:00 PM	30 minutes to move	5:00 AM 5:00 PM	60 minutes to move	
5/30/2020	3:00 PM	30 minutes to move	5:00 AM 5:00 PM	60 minutes	
5/31/2020	~~3:00 PM~~				Shut sprinklers down 3/4" of rain too wet
6/1/2020					

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YEAR 2020 IRRIGATION WATER USE RECORD

DATE	Wheel line #1 Run times	Wheel line #1 Down Time	Wheel line #2 Run Times	Wheel line #2 Down Time	Comments
6/1/2020	5:30 AM	15 min to move	6:00 AM	15 min to move	Water Source Discharge Pressure 90 PSI
6/1/2020	4:00 PM	11			End of Line Pressure 50 PSI
6/2/2020	5:30 AM	11	6:00 AM	15 min to move	
6/2/2020	4:00 PM	11			
6/3/2020	5:30 A/M	11	6:00 A/M	15 min to move	
6/3/2020	4:00 PM	11			
6/4/2020	5:30 AM	11	6:00 AM	15 min to move	
6/4/2020	4:00 PM	11			
6/5/2020	5:30 AM	11	6:00 A/M	15 min to move	
6/5/2020	4:00 PM	11			
6/6/2020	5:30 AM	11	6:00 A/M	15 min to move	
6/6/2020	4:00 PM	11			
6/7/2020	5:30 AM	11	6:00 A/M	15 min to move	
6/7/2020	4:00 PM	11			

YEAR 2020 IRRIGATION WATER USE RECORD

DATE	Wheel line #1 Run times	Wheel line #1 Down Time	Wheel line #2 Run Times	Wheel line #2 Down Time	Comments
6/8/2020	5:30AM	15 min to move	6:00AM	15 min to move	
6/8/2020	1:00PM	"			
6/9/2020	5:30AM	"	6:00 AM	15 min to move	
6/9/2020	6:00PM	"	6:30 PM	15 min to move	
6/10/2020	5:30AM	"	6:00 AM	15 min to move	
6/10/2020	1:00PM	"			
6/11/2020	5:30 AM	"	6:00AM	15 min to move	
6/11/2020	1:00 PM	"			
6/12/2020	5:30AM	"	6:00 AM	15 min to move	
6/12/2020	1:00PM	"			
6/13/2020	5:30AM	"	6:00 AM	15 min to move	
6/13/2020	1:00PM				Shut down irrigation due too to much rain
6/21/2020	3:00PM	"	3:00PM	15 min to move	
6/22/2020	5:30AM	"	4:00PM	15 min to move	

YEAR 2020 IRRIGATION WATER USE RECORD

DATE	Wheel line #1 Run times	Wheel line #1 Down Time	Wheel line #2 Run Times	Wheel line #2 Down Time	Comments
6/23/2020	5:30AM	15 min to move	4:00PM	15 min to move	
6/24/2020	5:30AM	15 min to move	5:00 PM to 5:30 AM	15 min to move	
6/25/2020	5:30AM to 5:00 PM	15 min to move	5:30 AM to 5:00PM	15 min to move	
6/26/2020	5:30 AM to 5:00 PM	15 min to move	6:00AM to 5:38 PM	15 min to move	
6/27/2020	11	11	11	11	
6/28/2020	11	11	11	11	
6/29/2020	11	11	11	11	
6/30/2020	11	11	11	11	
7/1/2020	11	11	11	11	
7/2/2020	11	11	11	11	
7/3/2020	11	11	11	11	
7/4/2020	11	11	11	11	
7/5/2020	11	11	11	11	
7/6/2020	11	11	11	11	

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EAR 2020 IRRIGATION WATER USE RECORD

DATE	Wheel line #1 Run times	Wheel line #1 Down Time	Wheel line #2 Run Times	Wheel line #2 Down Time	Comments
7/7/2020	5:30 AM to 5:00 PM	15 min to move	6:00 AM to 5:30 PM	15 min to move	
7/8/2020	"	"	"	"	
7/9/2020	"	"	"	"	
7/10/2020	"	"	"	"	
7/11/2020	"	"	"	"	
7/12/2020	"	"	"	"	
7/13/2020	"	"	"	"	
7/14/2020	"	"	"	"	
7/15/2020	"	"	"	"	
7/16/2020	"	"	"	"	
7/17/2020	"	"	"	"	
7/18/2020	"	"	"	"	
7/19/2020	"	"	"	"	
7/20/2020	"	"	"	"	

YEAR 2020 IRRIGATION WATER USE RECORD

DATE	Wheel line #1 Run times	Wheel line #1 Down Time	Wheel line #2 Run Times	Wheel line #2 Down Time	Comments
7/27/2020	5:00 AM to 5:00 PM	20 min to move	5:30 AM to 5:30 PM	20 min to move	
7/28/20	5:00 AM to 5:00 PM	"	"	"	
7/29/20	"	"	"	"	
7/30/20	"	"	"	"	
7/31/20	"	"	"	"	
8/1/20	"	"	"	"	
8/2/20	"	"	"	"	
8/3/20	"	"	"	"	
8/4/20	"	"	"	"	
8/5/20	"	"	"	"	
8/6/20	"	"	"	"	
8/7/20	"	"	"	"	
8/8/20	"	"	"	"	
8/9/20	"	"	"	"	

YEAR 2020 IRRIGATION WATER USE RECORD

DATE	Wheel line #1 Run times	Wheel line #1 Down Time	Wheel line #2 Run Times	Wheel line #2 Down Time	Comments
8/10/2020	5:00 AM to 5:00 PM	20 min to move	5:30 AM to 5:30 PM	20 min to move	
8/11/20	5:00 AM to 5:00 PM	20 min to move	5:30 AM to 5:30 PM	20 min to move	
8/12/20	"	"	"	"	
8/13/20	"	"	"	"	
8/14/20	"	"	"	"	
8/15/20	"	"	"	"	
8/16/20	"	"	"	"	
8/17/20	"	"	"	"	
8/18/20	"	"	"	"	
8/19/20	"	"	"	"	
8/20/20	"	"	"	"	
8/21/20	"	"	"	"	
8/22/20	"	"	"	"	
8/23/20	"	"	"	"	

YEAR 2021 IRRIGATION WATER USE RECORD

DATE	Wheel line #1 Run times	Wheel line #1 Down Time	Wheel line #2 Run Times	Wheel line #2 Down Time	Comments
5-5	12hr		12hr		90 PSI at Pump 45 PSI at end of lines
5-6	12hr		12hr		16 sprinklers each 11/64 TAS plus standby line for other down times
(Same at 12hr sets through 6-22)					
6-22	12hr		12hr		
6-23	24hr	½hr	24hr	½hr	
6-24	24 hr	½hr	24 hr	½hr	
(Same at 24hr Sets through 7-3)					
7-3	24hr	½hr	24hr	½hr	
7-4	12hr		12hr		
(Same at 12hr sets through 7-17)					
7-17	12hr		12hr		
7-18	24hr	½hr	24hr	½hr	
(Same at 24hr sets through 8-4)					
8-4	24 hr	½hr	24 hr	½hr	

YEAR 2021 IRRIGATION WATER USE RECORD

DATE	Wheel line #1 Run times	Wheel line #1 Down Time	Wheel line #2 Run Times	Wheel line #2 Down Time	Comments
8-5	12hr		12hr		
(same at 12hr sets through 8-10)					
8-10	12 hr		12 hr		
8-11	24 hr	½ hr	24 hr	½ hr	
(same at 24 hr sets through 8-16)					
8-16	24 hr	½ hr	24 hr	½ hr	
8-17	12 hr		12 hr		
(same at 12 hr sets through 9-27)					
9-27	12 hr		12 hr		off.