



**Lewis County
WATER CONSERVANCY BOARD**

Application for Change/Transfer
OF A RIGHT TO THE BENEFICIAL USE OF THE PUBLIC WATERS OF
THE STATE OF WASHINGTON

RECEIVED

JUL 22 2014

Report of Examination

WA State Department
of Ecology (SWRO)

Surface Water Ground Water

DATE APPLICATION RECEIVED April 18, 2013	WATER RIGHT DOCUMENT NUMBER (i.e., claim, permit, certificate, etc.) 2324	WATER RIGHT PRIORITY DATE May 19, 1939	BOARD-ASSIGNED CHANGE APPLICATION NUMBER LEWI-13-04
---------------------------------------------	---------------------------------------------------------------------------------	-------------------------------------------	-----------------------------------------------------------

NAME City of Centralia			
ADDRESS (STREET) 1100 N. Tower Avenue	(CITY) Centralia	(STATE) WA	(ZIP CODE) 98531

Changes Proposed: Change purpose Add purpose Add irrigated acres Change point of diversion/withdrawal
 Add point of diversion/withdrawal Change place of use Other (Temporary, Trust, Interties, etc.)

SEPA
The board has reviewed the provisions of the State Environmental Policy Act of 1971, Chapter 43.21C RCW and the SEPA rules, chapter 197-11 WAC and has determined the application is: Exempt Not exempt

BACKGROUND AND DECISION SUMMARY

Existing Right (Tentative Determination)

MAXIMUM CUB FT/ SECOND 0.6	MAXIMUM GAL/MINUTE	MAXIMUM ACRE-FT/YR Unspecified	TYPE OF USE, PERIOD OF USE Irrigation of 60 acres				
SOURCE Chehalis River			TRIBUTARY OF (IF SURFACE WATER) Pacific Ocean				
AT A POINT LOCATED: PARCEL NO. 023771001002	¼	¼ NW	SECTION 26	TOWNSHIP N. 15	RANGE 3 W.	WRIA 23	COUNTY. Lewis
LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED Lot 1 and the North ½ of Lot 2, Section 26, T. 15, R. 3 W.W.M.							
PARCEL NO.	¼	¼	SECTION	TOWNSHIP N. 15	RANGE, 3 W		

Proposed Use

MAXIMUM CUB FT/ SECOND	MAXIMUM GAL/MINUTE 270	MAXIMUM ACRE-FT/YR 125.20	TYPE OF USE, PERIOD OF USE Irrigation of 60 acres				
SOURCE Well (Pratley Well)			TRIBUTARY OF (IF SURFACE WATER) N/A				
AT A POINT LOCATED: PARCEL NO. 023771001002	¼ NE	¼ SW	SECTION 26	TOWNSHIP N. 15	RANGE 3W	WRIA 23	COUNTY. Lewis
LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED Government Lots 1, 2, 3 and 4, ALL being in Section 26, Township 15 North, Range 3 West, W.M., Lewis County, Washington. ALSO the north half of the northeast quarter of Section 26, Township 15 North, Range 3 West, W.M., Lewis County, Washington. EXCEPT the north half of the north half of the north half of said northeast quarter. EXCEPT ALSO the following: Beginning at a point 30 feet west of the southeast corner of the north half of the northeast quarter; thence west 306 feet; thence north 108 feet; thence east 306 feet; thence south 108 feet to the place of beginning. ALSO the north 240 feet of even width of the E ½ SE ¼ NE ¼, Section 26, T. 15., R., 3 W.W.M. ALSO the southwest quarter of the northeast quarter and the west half of the southeast quarter of the northeast quarter of Section 26, Township 15 North, Range 3 West, W.M., Lewis County, Washington ALSO in Thurston County, the S ½ SW ¼, Section 23, T. 15., R., 3 W.W.M. lying east of the Chehalis River							
PARCEL NO.	¼	¼	SECTION	TOWNSHIP N. 15	RANGE, 3W		

Board's Decision on the Application

MAXIMUM CUB FT/ SECOND	MAXIMUM GAL/MINUTE	MAXIMUM ACRE-FT/YR	TYPE OF USE, PERIOD OF USE				
	270	125.20	Irrigation of 60 acres				
SOURCE			TRIBUTARY OF (IF SURFACE WATER)				
Well (Pratley Well)							
AT A POINT LOCATED:							
PARCEL NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE	WRIA	COUNTY.
023771001002	NE	SW	26	15	3W	23	Lewis
LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED							
<p>Government Lots 1, 2, 3 and 4, ALL being in Section 26, Township 15 North, Range 3 West, W.M., Lewis County, Washington.</p> <p>ALSO the north half of the northeast quarter of Section 26, Township 15 North, Range 3 West, W.M., Lewis County, Washington. EXCEPT the north half of the north half of the north half of said northeast quarter. EXCEPT ALSO the following: Beginning at a point 30 feet west of the southeast corner of the north half of the north half of the northeast quarter; thence west 306 feet; thence north 108 feet; thence east 306 feet; thence south 108 feet to the place of beginning.</p> <p>ALSO the north 240 feet of even width of the E ½ SE ¼ NE ¼, Section 26, T. 15., R., 3 W.W.M.</p> <p>ALSO the southwest quarter of the northeast quarter and the west half of the southeast quarter of the northeast quarter of Section 26, Township 15 North, Range 3 West, W.M., Lewis County, Washington</p> <p>ALSO in Thurston County, the S ½ SW ¼, Section 23, T. 15., R., 3 W.W.M. lying east of the Chehalis River</p>							
PARCEL NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE,		
				15	3W		

DESCRIPTION OF PROPOSED WORKS

New POW is referred to as the Pratley Well approximately 60 feet in depth

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE: Started	COMPLETE PROJECT BY THIS DATE: Completed	COMPLETE CHANGE AND PUT WATER TO FULL USE BY THIS DATE: March 1, 2018
----------------------------------------	---------------------------------------------	--------------------------------------------------------------------------

REPORT

BACKGROUND

On April 18, 2013, the City of Centralia (Centralia) filed five Applications for Change of Water Rights to change the points of withdrawal/diversion of several water rights and modify the place of use to reflect the current configuration of the irrigated property. **The intent of these Applications for Change is to allow the City the flexibility to exercise their water rights by irrigating different areas than currently authorized under these certificates. Under these requested changes water will be co-mingled in a single irrigation system and applied to the entire property, subject to the individual limitations of each water right.**

This Report of Examination will address Surface Water Certificate 2324. The application was accepted at an open public meeting of the Lewis County Water Conservancy Board ("Board") on April 18, 2013, and assigned application number LEWI-13-04.

Below are all five Applications for Change with corresponding WCB numbers.

Water Right Number	Original Water Right Holder	Lewis County WCB Number
535-D	Ticknor	LEWI-13-01
536-D	Ticknor	LEWI-13-02
2144	Mott	LEWI-13-03
2324	Ticknor	LEWI-13-04
G2-21004	Walsh	LEWI-13-05

Exhibit "A" is a copy of the Application for Change No. LEWI-13-04, and **Exhibit "B"** is a copy of Surface Water Certificate 2324.

Table 1 - Attributes of the water right as currently documented

Name on certificate:	R.B. Ticknor
Water right document number:	2324
As modified by certificate of change number:	N/A
Priority date, first use:	May 19,1939
Water quantities:	Qi: 0.6 cfs Qa: Unspecified
Source:	Chehalis River
Point of diversion/withdrawal:	NW of Section 26, T. 15 N., R. 3 W.W.M.
Purpose of use:	Irrigation of 60 acres
Period of use:	Unspecified, but assumed during irrigation season - as needed.
Place of use:	Lot 1 and the North ½ of Lot 2 Section 26, T. 15, R. 3 W.W.M.
Tentative determination of the water right	
The tentative determination is provided on the second page of this report.	
History of water use	
Discussed in Report of Examination on pages 9 - 11	
Current Use	
Discussed in Report of Examination on pages 9 - 11	
Previous changes	
N/A	

SEPA

The Board has reviewed the proposed project in its entirety. The governmental action relating to the subject application is exempt from the "detailed statement" preparation requirements of SEPA (WAC 197-11-800(4)).

A water right application or if applicable an *Application for Change of Water Rights* is subject to a SEPA threshold determination (i.e., an evaluation whether there are likely to be significant adverse environmental impacts) if any one of the following conditions are met.

- It is a surface water right application for more than 1 cubic feet per second, unless that project is for agricultural irrigation, in which case the threshold is increased to 50 cubic feet per second, so long as that irrigation project will not receive public subsidies;
- It is a groundwater right application for more than 2,250 gpm
- It is an application that, in combination with other water right applications for the same project, collectively exceed the amounts above;
- It is a part of a larger proposal that is subject to SEPA for other reasons (e.g., the need to obtain other permits that are not exempt from SEPA);
- It is part of a series of exempt actions that, together, trigger the need to do a threshold determination, as defined under WAC 197-11-305.

None of these situations applied to this application.

Other

Chapter 90.44 RCW authorizes the appropriation of public water for beneficial use and describes the process for obtaining water rights including the process to amend or change existing rights. Laws specifically governing the water right permitting process are RCW 90.03.250 through 90.03.340 and RCW 90.44.060. Changes or amendments to these rights are covered under RCW 90.03.380 and RCW 90.44.100.

The information or conclusions in this section were authored and/or developed by Barbara Burres

COMMENT AND PROTESTS

Public notice of the application was given in the Chronicle on April 25th, and May 2nd, 2013. The protest period ended on June 2nd with an extended opportunity for public discussion during the review process.

Since the intent of these filings is to modify the place of use to allow for irrigation in both Thurston and Lewis Counties a public meeting was also held at a Thurston County venue on July 15, 2013, specifically the regular meeting of the Thurston County Water Conservancy Board. No protests were received in response to the public notice, nor did members of the public attend the meetings where these applications were discussed.

“Exhibit C” is the Affidavit of Publication.

The information or conclusions in this section were authored and/or developed by Barbara Burres

INVESTIGATION

The following information was obtained from:

- A site inspection conducted by Commissioners Barbara Burres and Bob Thode on July 18, 2013. The group was accompanied by Jim Webb farm manager for the City of Centralia, and Jill Van Hulle of Pacific Groundwater Group. A written report documenting the site visit was prepared by the Board and is included in this record.
- Technical reports including Drost, B.W., Ely, D.M., and Lum, II, W.E., 1999. “Conceptual Model and Numerical Simulation of the Ground-Water-Flow System in the Unconsolidated Sediments of Thurston County, Washington”. U.S. Geological Survey WRI 99-4165
- Research of Ecology records - including water rights, well construction logs and other hydrogeologic information and,
- Conversations with the applicant specifically Public Works Director Kahle Jennings and Farm Manager Jim Webb.
- Additional technical information provided to the WCB, in a March 18, 2013 memo from Dawn Chapel, LHG entitled *Hydrogeological Assessment of Flying T Property*. (See Exhibit “D”)

Project Description

The project site is known as the City of Centralia’s Flying T property. The project site encompasses about 305 acres and is located at 1101 Goodrich Road, northwest of the City of Centralia, in Sections 23 and 26, Township 15 N., Range 3 W.W.M. The Chehalis River forms the western boundary of the site, and the farm project is mostly located in Lewis County with a smaller portion situated in Thurston County.

This property is currently occupied by the City's wastewater treatment plant (WWTP) facility, but prior to 2003, was operated as the Flying T Ranch. While none of these water rights have ever been officially modified, water use on the property has changed. While once managed as at least 4 separate farms these properties were combined in the mid-1980's under the ownership of Maxwell Baxter.

Over time, the use of some of the originally designated wells and diversions have been discontinued, and the owners have shifted to the use of other on-site wells. The property has been in continuous agricultural production for nearly 100 years, and numerous crop types have been produced. While the WWTP facility has displaced some of the original fields, most of the property remains in active farm production.

Four main wells are currently used to irrigate this property. These wells are referred to by City staff as the Walsh, Pratley, Peterson, and Treatment Plant Area wells. The intent of these *Applications for Change* is to allow the City the flexibility to exercise their water rights by irrigating different areas than currently authorized under these certificates and where appropriate to change the point of withdrawal to reflect the active production wells that are currently in use. These changes are being filed to bring the City into compliance with current operations. Under these requested changes water will continue to be co-mingled in a single irrigation system and applied to the entire property, subject to the individual limitations of each water right. No rights are being transferred from the farm property.

This change request is specific to Surface Water Certificate 2324 (Priority Date May 19, 1939)). The certificate authorizes the withdrawal of 0.6 cfs from the Chehalis River, with an unspecified annual quantity for the irrigation of 60 acres. The City wishes to change the diversion point from the Chehalis River to the nearby Pratley well, and modify the place of use to allow for irrigation of the entire property. The Pratley well was constructed in the mid-1970's and has been used to exercise the surface water portion of the appurtenant water rights for decades. The Pratley well is smaller than the Walsh and Peterson Wells and generally used to irrigate the most southern portions of the property. Were other wells to become inoperable the City could use this well to supply water anywhere on the property, however the well will not generally be used to irrigate the more northern and eastern portions of the property simply because it would not be efficient to convey water when other production wells are better located.

Other water rights appurtenant to the property (if applicable)

The City of Centralia holds multiple water right authorizations for the irrigation of this property but has elected to only modify five of the water right documents. The remainder of these rights are either useable *as issued* or not needed due to redundancy with other water rights. **Table 2** lists all the water rights appurtenant to the project based on a review of Ecology's records, with the right currently proposed for change bolded.

Table 2 Flying T Water Rights (Extracted from WRATS)

File #	Cert #	Person	Type	Date	Purpose	Qi	Qa	Ir Acres
S2-*04687CWRIS	2144	MOTT H	Cert	11/30/1938	IR	0.4 cfs		40
S2-*04845CWRIS	2324	TICKNOR R B	Cert	5/19/1939	IR	0.6 cfs		60
G2-20927CWRIS	G2-20927C	TICKNOR R C	Cert	4/12/1973	IR	500 gpm	176	88
G2-*08766CWRIS	6282	TICKNOR R C	Cert	5/23/1967	IR	500 gpm	200	150
G2-*02019CWRIS	1156	WATSON F H	Cert	6/29/1951	IR,DS	200 gpm	30	20
G2-*02409CWRIS	1219	GORZELANCYK S	Cert	3/24/1952	IR	200 gpm	40	20
G2-*00684SWRIS	535-D	TICKNOR R B	Cert	7/1/1938	IR	128 gpm	80	40
G2-*00685SWRIS	536-D	TICKNOR R B	Cert	1/1/1943	IR	128gpm	50	25
G2-23930CWRIS	G2-23930C	GRILL GERALD D	Cert	8/20/1975	IR,DS	50 gpm	11	5
G2-21004CWRIS	G2-21004C	WALSH LEO & BEVERLY	Cert	5/2/1973	IR	500 gpm	124	62

Evaluation

A more detailed description of all water rights appurtenant to City's property is included in supporting materials associated with this application, see "**Exhibit F**". With the approval of the City's five *Applications for Change of Water Rights* we suggest that the Flying T water right portfolio will be as follows, again with the modified right in bold:

Table 3 – Revised Flying T Water Rights

Cert #	Person	Type	Date	Purpose	Qi		Qa		Ir Acres	Well
					Additive	Non-Add	Additive	Non-Add		
2144	City of Centralia	Superseding Certificate	11/30/1938	IR	180 gpm		83.5		40	Pratley Well
2324	City of Centralia	Superseding Certificate	5/19/1939	IR	270 gpm		125.20		60	Pratley Well
6282*	Ticknor R C	Cert	5/23/1967	IR	500 gpm			200	0	Peterson Well
1156*	Watson F H	Cert	6/29/1951	IR,DS	200 gpm		30		20	Treatment Plant Well
535-D	City of Centralia	Superseding Certificate	7/1/1938	IR		128 gpm	80		40	Walsh Well
536-D	City of Centralia	Superseding Certificate	1/1/1943	IR		128 gpm	50		25	Peterson Well
G2-23930C*	Grill Gerald D	Cert	8/20/1975	IR,DS	50 gpm		11		5	Grill Well
G2-21004C	City of Centralia	Superseding Certificate	5/2/1973	IR	500 gpm		124		62	Walsh Well
					1,700 gpm		503.7		252	

*Water Right Certificates to be used "as-is" without further modification

Consistency with Place of Use

We note that of the approximately 304 acres owned by the City, all but 20 acres are described in the place of use by one or more of the certificates. This 20-acre portion encompasses the northernmost part of what the City refers to as the "Stump" and "Peterson" Fields and we can find no explanation as to why water rights have been excluded from this particular portion of the property. The City assumed that all the Flying T property was covered by water rights, and to the best of City staff's knowledge the property has always been irrigated. In filing this change request the City is requesting that a single place of use be established that encompasses all currently irrigated areas – include the 20 acres that was previously not covered. Irrigation of the 20 acres will be further addressed in the ROE's prepared for Application for Change GWC 535-D. We note however that the City's request does not constitute an expansion of water rights because while the authorized place of use describes approximately 304 acres the rights are still limited to something less – we have estimated that to be approximately 252 acres of irrigation of which 227 is authorized under the 5 certificates proposed for change by the City.

With the approval of these requested changes the City may irrigate anywhere within the new place of use under 535-D, 536-D, 2144, 2324 and G2-21004 provided that the total number of acres does not exceed 227 acres during any season.

In filing these *Applications for Change* the City is creating a single place of use that will become uniform across all five certificates associated with this consolidation effort. Accordingly these rights will no longer include discreet places of use as they did previously. The City has no intention to sub-divide this agricultural property and understands that in the unlikely event that land use conditions change and subsequent modifications are required, that further actions may be required.

Effects to Other Water Rights/Claims

The State Department of Ecology's Water Rights Application Tracking (WRATS) database was queried to identify other existing ground water rights (certificates, permits and claims) situated near the Flying T site. "Exhibit E" shows that nearly 170 records on file within the 4 square miles encompassing and surrounding the Flying T property. Many of these documents were filed as claims for general domestic purposes, but numerous water rights and claims represent irrigation purposes which are consistent with the land use patterns on the area.

Table 3 below details water rights within a smaller, approximately ½ mile radius of the new point of withdrawal associated with this transfer which is the existing Pratley Well located in Section 26. There are no other water rights are appurtenant to this well.

Table 3 – Water Rights Application Tracking – ½ Mile Radius of Proposed Pratley Wellsite

File #	Cert.	Name	Date	Purpose	GPM	Qa	# Acres	County	TRS	QQ/Q
G2-*01425C	730	SORENSEN E M	3/21/1950	IR	150	75	50	THURSTON	15N 3W 23	S2/SE
G2-*01067C	965	SORENSEN E M	1/1/1940	IR	150	75	50	THURSTON	15N 3W 23	S2/SE
G2-26306C		HANCOCK CAROLYN	3/11/1983	DM	60	4.5		THURSTON	15N 3W 24	SW/NW
G2-24370C		ZUBER DAVID E	12/29/1976	DM	60	3		THURSTON	15N 3W 24	NE/SW
G2-21076C		ZUBER DAVID F	5/29/1973	IR,DM	60	8	3	THURSTON	15N 3W 24	NE/SW
G2-21477C		BRANDT KENNETH	9/25/1973	IR,DS	260	53	26	THURSTON	15N 3W 24	SW/SE
G2-*06739C	5178	ZUBER D F / J L	5/31/1963	ST,IR	55	14.6	4.5	THURSTON	15N 3W 24	NE/SW
G2-*01736C	1023	SMITH C A	11/24/1950	IR,DS	150	30	15	THURSTON	15N 3W 24	S2/SE
G2-*01877C	698	KUNSELMAN H C	3/22/1951	IR,DS	50	12	4.5	THURSTON	15N 3W 24	NE/SW
G2-*00255C	403	SHAFFER R H	5/24/1946	IR,DS	75	15	10	THURSTON	15N 3W 24	SW/SE
G2-27680C		BROOKBANK INC	1/12/1990	DM	75	7		LEWIS	15N 3W 25	NE/NW
G2-21743C		JOHNSON KENNETH W	12/27/1973	IR,DS	100	28	13.5	LEWIS	15N 3W 25	
G2-20222C		HASLERUD WALTER	5/16/1972	ST,IR	50	25.2	11	LEWIS	15N 3W 25	
G2-*09435C	6538	DAVIS M L	5/9/1968	IR,DS	60	11	5	LEWIS	15N 3W 25	
G2-*07152C	5000	BISHOP B C	5/11/1964	IR,DS	100	25.6	10	LEWIS	15N 3W 25	NW/NE
G2-*05134C	3402	JOHNSON R R	2/19/1959	IR	70	24	12	LEWIS	15N 3W 25	N2/NE
G2-*03510C	1896	CLEMENT J L	2/15/1954	IR,DS	30	15.6	5	LEWIS	15N 3W 25	
G2-*01410C	1471	CAIN V F	3/15/1950	IR	40	11	7	LEWIS	15N 3W 25	
G2-*01481C	857	MEYER H	4/21/1950	IR,DS	50	6	4	LEWIS	15N 3W 25	

File #	Cert.	Name	Date	Purpose	GPM	Qa	# Acres	County	TRS	QQ/Q
G2-*01508C	638	SHULT L O	5/15/1950	IR	100	13	9	LEWIS	15N 3W 25	SE/SE
G2-*01519C	541	CALLAHAN R J	5/22/1950	IR	50	6	4	LEWIS	15N 3W 25	
G2-*00805C	668	TICKNOR E L	4/1/1941	IR_DS	70	15	10	LEWIS	15N 3W 25	NW/SW
G2-*01305C	618	JENSEN L E	12/14/1949	IR_DS	100	8	5	LEWIS	15N 3W 25	
Flying T Water Rights										
G2-23930C		GRILL GERALD D	8/20/1975	IR_DS	50	11	5	LEWIS	15N 3W 26	SE/NE
G2-20927C		TICKNOR R C	4/12/1973	IR	500	176	88	LEWIS	15N 3W 26	SW/NE
G2-20165C		QUARNSTROM RICHARD	4/26/1972	IR	400	46	20	LEWIS	15N 3W 26	SE/NE
G2-20166C		QUARNSTROM R	4/26/1972	DS	300	46	20	LEWIS	15N 3W 26	SE/NE
G2-20167C		PRATLEY HARRY L	4/26/1972	IR_DS	300	42.4	18	LEWIS	15N 3W 26	NW/SE
G2-*08765C	5903	TICKNOR R C	5/23/1967	IR	125	18	9	LEWIS	15N 3W 26	NE/SE
G2-*08766C	6282	TICKNOR R C	5/23/1967	IR	500	200	150	LEWIS	15N 3W 26	NE/NE
G2-*02019C	1156	WATSON F H	6/29/1951	IR_DS	200	30	20	LEWIS	15N 3W 26	SE/NE
G2-*02409C	1219	GORZELANCYK S J	3/24/1952	IR	200	40	20	LEWIS	15N 3W 26	NE/SE
G2-*01591C	1352	TEETER C	7/15/1950	IR	150	27	18	LEWIS	15N 3W 26	NW/SE
G2-*00684C	535	TICKNOR R B	7/1/1938	IR	128	80	40	LEWIS	15N 3W 26	SW/NE
G2-*00685C	536	TICKNOR R B	1/1/1943	IR	128	50	25	LEWIS	15N 3W 26	N2/NE

Given the high productivity of the surficial aquifer, pumping of shallow groundwater wells at the Flying T property is not expected to interfere with the operation of other wells in the area. The potential for impairment was assessed using a Theis distance drawdown analysis with the following aquifer parameters and pumping assumptions:

- Aquifer hydraulic conductivity = 310 ft/day (based on median value for the Outwash aquifer reported in Ecology, 2005).
- Aquifer thickness = 56 ft (based on average thickness of Outwash aquifer reported in Ecology, 2005).
- Aquifer Storativity = 0.25 (a typical value for sand and gravel).
- Assumed pumping rate of 500 gpm operating for 6 months (irrigation season).

The analysis indicates 3-ft of drawdown would occur after 6 months of pumping at the pumping well and less than 1-ft of drawdown would occur in the aquifer about 240 feet from the well.

The available drawdown in other wells in the area ranges from 20 to 52 feet with an average of 38 feet (based on 19 well logs in Section 26). Given the minimal drawdowns calculated above, the usage of groundwater wells at the Flying T property is not expected to interfere with the operation of other wells in the area.

Changing the point of diversion from the original site in the Chehalis River to the Pratley Well will not impair other water right holders or adversely impact the river. The well is in direct continuity with the river and has replaced the need for a pump in the river itself. The well is capable of producing 450 gpm, which will be the total quantity authorized by this certificate and SWC 2144.

Hydrogeological Setting

The Flying T property is located within the Chehalis River Valley in the Puget Sound Lowland; an elongated structural basin extending from the Cascade Range to the Olympic Mountains. During the Eocene to Miocene Epochs (~45 to 5 million years ago), tectonic processes resulting in land subsidence enabled large deposits of marine, brackish water, and non-marine sediments and volcanic rocks to accumulate in the area now occupied by the Chehalis Valley (Ecology, 2005). These rocks were later deformed during the Pliocene Epoch (5.3 to 1.6 million years ago) into the dominant southeast-northwest trending synclines and anticlines that characterize the present geologic structure of the area (Ecology, 2005).

During the Pleistocene Epoch (1.6 million to 10,000 years ago) the Puget Sound Lowland was repeatedly inundated by advancing ice from the Puget lobe of the Cordilleran ice sheet. The most recent glacial advance occurred during the Vashon Stage of the Frasier Glaciation about 15,000 years ago (Ecology, 2005). Although Vashon ice never reached the Chehalis Valley, melt water from the glacier deposited large quantities of coarse-grained outwash deposits on the valley floor as far south as the present Chehalis and Skookumchuck river confluence (Ecology, 2005). In many locations the outwash deposits are overlain by modern river and stream deposits (alluvium) of fine gravel, sand and silt (Ecology, 2005).

The following Hydrogeologic Units occur beneath the Flying T property (Plate A, Ecology, 2005).

- Recent Alluvium (Qa) which occurs at the land surface. This material is comprised mostly of silt, sand and fine gravel but locally includes fine-grained deposits of sand, silt, and clay. It is about 22 feet thick on average and varies from a thin veneer to 80 feet (Ecology, 2005). The Qa serves as a surficial semi-confining unit to the generally coarser grained outwash aquifer below (Qgo(g)). The Qa produces small to moderate amounts of water from sand and gravel interbeds contained within it (Ecology, 2005).
- Vashon Recessional Outwash (Qgo(g)) is the primary water supply aquifer in the area of the Chehalis River Valley where the Flying T property is located. It is composed of coarse-to-medium gravel, sand, cobbles, and occasional boulders, with localized layers of silt and clay (Ecology, 2005). It is about 56 feet thick on average and varies from 6 feet to 91 feet thick (Ecology, 2005). In the vicinity of the Flying T property, the Outwash aquifer is underlain by undifferentiated older Tertiary aged bedrock (Tbu) consisting of consolidated siltstone, sandstone, shale, and volcanic rocks.

Collectively, the unconsolidated hydrogeologic units above the Tertiary bedrock are referred to as the surficial aquifer (Ecology, 2005). Ecology's 2005 study of the Centralia-Chehalis area surficial aquifer indicates that groundwater in the shallow aquifer system is in close hydraulic connection to the rivers throughout most of the valley.

A water table map based on 2004 water level data from numerous monitoring wells in the valley, indicates the groundwater flow direction on the Flying T Ranch property is westward towards the Chehalis River (Plate C, Figure C-1, Ecology 2005). Furthermore, a September 2003 seepage study was conducted along a 6.3 mile reach of the Chehalis River along the Flying T Ranch property - from the mouth of Lincoln Creek (near the south end of the Flying T Ranch property) to USGS gaging station 12027500 (about 0.5 miles north of the Flying T Ranch property). The results of the seepage study indicated this stretch of the Chehalis River is a gaining stream (net gain of about 31 cubic-feet-per-second) - meaning groundwater discharges along this reach of the river and contributes to its baseflow (Ecology, 2005). The findings of the seepage study are further supported by in-stream piezometers installed for the Ecology study which indicated an upward vertical gradient consistent with a gaining stream (Plate C, Ecology 2005).

The Ecology 2005 study includes a geologic cross-section through the Flying T Ranch property (A to A' in Plate A, Ecology 2005). That cross section indicates the study area is underlain by about 80-ft of Outwash sand and gravel with a thin veneer of alluvial deposits, which comprise the shallow aquifer system. The shallow aquifer system is underlain by low permeable Tertiary aged bedrock consisting of low permeable sandstones, siltstones, shales, claystones, and conglomerate beds (Ecology 2005). These low permeable units retard downward movement from the shallow aquifer system.

Review of Section 26 well logs in the vicinity of the Flying T site show well depths range from 20 to 60-ft. Geologic descriptions on the well logs indicate sand and gravel with cobbles and occasional silt and clay. Static groundwater levels at time of drilling range from 7 to 21 feet below ground surface (bgs). These descriptions are consistent with the hydrogeologic interpretations presented in the USGS (1999) and Ecology (2005) groundwater studies which indicate the Chehalis River valley is underlain by a productive shallow aquifer system consisting of sand and gravel glacial outwash deposits overlain by a veneer of more recent alluvial deposits.

Supply Sources and Same Body of Public Water

Table 4 designates the location of the originally designated source of supply and the proposed new source. As has been previously discussed numerous wells have been constructed on the Flying T property. Some of these wells are clearly associated with water rights - including rights associated with the property that are not proposed to be changed and the City's currently pending Applications for Change. Other well have been constructed without specific authority, and are used to exercise previously issued water rights.

Table 4 Authorized and Current Sources

Cert #	Owner	Authorized Source	New Source
2144	MOTT H	Chehalis River (1500 ft East and 1,150 ft North of SW corner of Sec 26, T.15 N., R 3W)	Pratley Well
2324	TICKNOR R B	Chehalis River (750 ft north and 1,200 ft west of the center of Sec 26, T.15 N., R 3W)	Pratley Well
535-D	TICKNOR R B	Dug Well 1 (660 ft West and 660 ft South from NE corner of SW ¼ of NE ¼ of Sec. 26, in the SW ¼ NE ¼ of 15 N 3W, S. 26)	Walsh Well
536-D	TICKNOR R B	Dug Well 2 (660 ft east from the NE corner of SW ¼ NE ¼ of Sec 26 in the N ½ NE ¼ of 15 N 3W, S. 26)	Peterson Well
G2-21004C	WALSH LEO & BEVERLY	Walsh Well (1290 ft north and 510 ft west of the south quarter corner of Sec 23 in the SE ¼ SW ¼ of 15 N 3W, S. 23)	No change proposed to POW

For the purpose of assessing impairment and addressing same body of public groundwater there are three wells that need to be considered - the Pratley well which is currently unpermitted but will be used to exercise both surface water certificates 2144 and 2324, the Peterson Well which will be used to exercise groundwater certificate 536-D which was previously exercised from a dug well, and the Walsh Well which will be used to exercise groundwater certificate 535-D which was associated with another dug well.

This specific ROE has been drafted for SWC 2324 and addresses the transfer of a water right from the Chehalis River to the Pratley Well. There is no record of construction for the Pratley well but based on the construction of the other onsite wells it can be assumed that the well is approximately 50 to 60 feet. The Pratley Well is completed in the same body of groundwater as both the Walsh and Peterson Wells which is composed of the unconsolidated hydrogeologic units above the Tertiary bedrock or the surficial aquifer. Ecology's 2005 study of the Centralia-Chehalis area surficial aquifer indicates that groundwater in the shallow aquifer system is in close hydraulic connection to the rivers throughout most of the valley, which is consistent with the high static water levels and productive nature of these wells. According water withdrawn from the Pratley Well is closely coupled with surface water flows in the Chehalis River and can be considered to be the same source.

Water Availability and Impairment of Flows

Minimum instream flows for this area were established through Chapter 173-523 WAC, the Instream Resources Protection Program for the Chehalis River Basin, (WRIA 22 and 23). The stated purpose of the rule is to retain perennial rivers and streams with instream flows and levels necessary to provide for wildlife, fish, scenic-aesthetic, environmental values, recreation, navigation, and water quality. Under the provisions of these regulations, any consumptive groundwater withdrawals from these basins with priority dates later than the closure dates stated in the regulations must not have an adverse effect on regulated surface water bodies.

The subject certificate has a priority date of 1939 and predates the instream flow rule. While Ecology does have the authority to condition water rights with instream flows during the change process, there needs to be a change in the nature of the water use such that the new use has a potential to impact flows differently. For example a change in period of use would trigger conditioning the change authorization with instream flow, as would a change in point of diversion upstream on a regulated surface water body. Since the applicant is only shifting the point of withdrawal to allow for continued irrigation of the same lands we see no requirement to add instream flow provisions which would encumber this water right unduly.

Public Interest

While technically this is a change to a surface water right and not subject to an evaluation of public interest, the result of this request will in essence allow for this right be exercised as a ground water right which is subject to RCW 90.44.100 and therefore, cannot be detrimental to the public interest. Ecology considers public interest to include the ramification of water right decisions on any watershed planning activities.

The 1971 Water Resources Act provides the most comprehensive list of legislative policies that guide the consideration of public interest in the allocation of water. These policies generally require a balancing of the state's natural resources and values with the state's economic well-being. Specifically, the policies require allocation of water in a manner that preserves instream resources, protects the quality of the water, provides adequate and safe supplies of water to serve public need, and makes water available to support the economic well-being of the state and its citizens.

The proposed change – which will result in the change of place of use, is consistent with state policy without adversely impacting instream flows or other public needs and values. No detriment to public interest could be identified during the examination of the subject application.

Tentative Determination

Applications for Change are governed, in part by RCW 90.03.380, which states that water rights that have been put to full beneficial use may be transferred to another place of use without loss of priority if such change can be made without detriment or injury to other existing rights.

When an Application for Change is filed, County Water Conservancy Boards are required by law to perform what is called a "tentative determination." This involves verifying that the right is in good standing and eligible to be changed ("good standing" means that Ecology can verify that water has been used within the last 5 years, that the water right has not been cancelled, and that development schedule has not lapsed and assessing the historical purposes of use.

Whole or partial relinquishment may occur when all or part of the authorized quantity has not been used for 5 years, respectively.

Good Standing:

At the heart of the City's filings is the desire to have these water rights reflect actual water use on the site. As previously mentioned these water rights are old and over time wells have been decommissioned and new wells drilled, new facilities have been constructed and property has been bought and farming consolidated.

The Department of Ecology's policy on tentative determinations of water rights (*Water Resources Program Policy for Conducting Tentative Determinations of Water Rights, Policy POL 1120*) provides that water rights may still be found to be in good standing even if not exercised exactly as issued. Changes that were made to water rights without first being authorized by Ecology are commonly called "de facto, or after-the-fact changes".

POL 1120 provides that when evaluating unauthorized changes to water rights, the Department of Ecology generally considers beneficial use to be the measure of the right, even if some attributes of the right may not be consistent with the current authorization. Use of water in a manner inconsistent with one's water right authorization may not result in forfeiture or abandonment of that right, provided such use is beneficial and not wasteful.

However, determining whether the beneficial use is associated with the right proposed for change can be difficult depending on the unauthorized changes that have occurred. For example, an unauthorized change in point of diversion may be relatively easy to investigate, whereas an unauthorized change in purpose or place of use may be very difficult to investigate. Consideration of unauthorized water use as representing beneficial use of the water right is determined on a case by case basis, through examination of the specific fact pattern associated with the water right file.

In the case of the City of Centralia's filings there are two types of Defacto Changes – place of use and point of diversion or withdrawal.

The following factors support the City's position that the rights remain in good standing:

- The City and previous owners realized that they had water rights and actively used water of the property for the originally intended purposes. We see no evidence of non-use or significant overuse with all irrigation occurring within the original bounds of the Flying T project.
- The sources are all very similar in construction such that no impairment would be expected from shifting production between the wells. All the wells are completed in the same body of public ground water which is hydrological coupled with the nearby Chehalis River. Use of the wells in lieu of direct surface water withdrawals, has no discernible impact on stream flows or other water users but serves to remove infrastructure from the river which is generally considered beneficial to fish utilization.

Number of Acres Irrigated and Changes to the Place of Use

We note that of the approximately 304 acres owned by the City, all but 20 acres are described in the place of use by one or more of the certificates. This 20-acre portion encompasses the northernmost part of the "Stump" and "Peterson" Fields and we can find no explanation as to why water rights have been excluded from this particular portion of the property, however the City assumed that all the Flying T property was covered by water rights, and to the best of City staff's knowledge the property has always been irrigated.

In filing this change the City is requesting that a single place of use be established that encompasses all currently irrigated areas – including the 20 acres that was previously not covered. It is our position upon review of the development of this site that including the previously non-specified area does not constitute an expansion of water rights because while the authorized place of use describes approximately 304 acres the rights are still limited to something less – we have estimated that to be approximately 252 acres of irrigation, of which 227 acres is authorized by the City's five filings. The City may irrigate anywhere within the new place of use provided that the total number of acres does not exceed 227 acres during any season.

Beneficial Use:

There are several methods to assess water use with meter readings being the preferred and most reliable mechanism. In situations where meter records are not available applicants can attempt document water use by other means. Beneficial use includes an evaluation of the actual numbers of acres irrigated as well as the amount of water that would have been applied.

Irrigation

Water use on the property is not metered, but generally applied in a manner consistent with the water rights that provide a water duty ranging from 1 to 2 acre-feet per irrigated acre during the growing season. Power records appear inconclusive except to document service connections to the well. The City employs a full-time farm manager – Jim Webb, who is tasked with managing farming activities on the site.

After its acquisition the City used the property to grow corn for several years, but now grows mainly pasture grasses that are cut for hay. The City owns three Nelson Travelling Big Gun sprinklers – 2 with diesel motors and booster pumps, and 1 with an 8-hp gas motor. The first two are used with the Walsh and Peterson wells and the latter with the Pratley well (the Pratley well is operated with a trailer mounted diesel motor and has adequate pressure without boosters).

Each gun can irrigate a swath 1,100 feet by 230 feet or approximately 6 acres, (253,000 square feet). Mr. Webb monitors water application using a small portable rain gage. He generally allows 1.5 inches to fall on the ground before moving the sprinklers to make the next pass which usually takes approximately 14 to 16 hours. He usually tries to keep two guns going at a time – weather dependent. There are approximately 30 irrigation risers on the property and irrigation generally begins in June and continues through the end of September.

Number of Acres Irrigated Water Duty and WIG Calculations

Taken in aggregate, the water rights associated with the property exceed the actual number of acres that could reasonable be irrigated at any one time. Thus the goal of all five of the City's requested changes is not to increase the number of acres irrigated under any single water right but instead to provide flexibility to the City such that any portion of the Flying T property could legally be irrigated under any of the water rights associated with the project.

For the purposes of evaluating water use at this site we have looked at both total project irrigation, as well as reviewed what each individual water right authorizes. We have assumed that, within this 304-acre footprint, approximately 252 acres could reasonably be irrigated. This figure accounts for non-irrigable areas of buildings, roads, the WWTP area, and larger swathes of riparian habitat along the Chehalis River, however we note that this property has been the focus of intensive habitat restoration and some of the riparian areas have been irrigated within the last 5 years so as to establish healthy root structures.

Unlike situations where an applicant seeks to expand the number of acres irrigated at any one time under the authority of a water right the City's water rights are not subject to the prescriptive "spreading" related prong described in Chapter

90.03.380(1) RCW and PRO-1210. PRO-1210 provides that the Water Resources Program (or in this case the WCB) is required to determine that the annual consumptive quantity under a water right proposed for a change to add acreage to an irrigation right or to add purposes of use is no greater after the change. Thus when acreage is being added the Annual Consumptive Quantity analysis serves to reduce the amount that can be transferred by reducing the right 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. In the case of these applications the City is not seeking to spread water or add additional uses, thus the appropriate test as defined by Chapter 90.03.380(1) RCW, RCW 90.03.615, RCW 90.44.100, GUID-1210 is to determine the extent of the beneficial use – whether consumptive or non-consumptive and limit the transfer to that amount such that the right is not expanded.

SWC 2324 allocates an unspecified number of acre-feet for the irrigation of 60 acres, which assumes that the water right holder would have used a reasonable amount of water to irrigate the property. This quantity doesn't always reflect actual water use, however and the Conservancy Board is required to assess the extent of actual beneficial water use and make a tentative determination as to actual water use. We have identified the originally designated place of use as well as visited the area that is currently irrigated by this well under the water rights appurtenant to it and determined that the number of acres is consistent with what was authorized.

For property that has clearly been irrigated, the Washington Irrigation Guide is frequently used to determine what a reasonable water duty would have been with the assumption being that farm operators would have applied as much water as needed to maintain their crop. This approach is consistent with standard Ecology methodology, as outlined in Ecology Guidance Document Guide-1210. Table 5 below provides an estimation of water use based on the irrigation of pasture using a Big Gun style sprinkler.

Table 5 – Projected Water Use under SWC 2144

# acres	Crop Requirement in inches (WIG)	Crop Irrigation Requirement	Total Irrigation Requirement	App. Efficiency (%)	% Total Evaporated	Total Consumed (af)	Return Flow (af)
60	16.28	81.40	125.20	65	10	93.92	31.31

Of these calculations, the key quantity is the Total Irrigation Requirement which reflects the amount of water that would have needed to adequately irrigate 60 acres based on climatic conditions in the Centralia area. While some of that water would have resulted in return flow, we have assumed a reasonable irrigation efficiency and we find that 125.20 acre-feet would have been put to beneficial use and is eligible to be transferred. As previously stated the City is not subject to the restrictions in the WAC that govern adding additional purposes of use or increasing the number of acres that can be irrigated thus while we have identified the return flow component associated with this right the City does not lose that portion of the right. Since the quantity of water actually used appears to exceed Ecology's allocation we find that this right has been fully perfected and is eligible to be transferred.

Consideration of Comments and Protests

No public comment or formal protests were received at either regularly scheduled Lewis County WCB meetings or at the Thurston County meeting, however members of the Thurston County Water Conservancy Board did comment that they are concerned in general about the transfer of water rights from Thurston to Lewis County and that they would like to see special attention paid to providing public notice to adjacent property owners. The Lewis County Board notes that while one of the five certificates involved in the transfer specifies a Thurston County wellsite and place of use that the intent of these transfers is to continue to irrigate the same property and no transfer of water to a different site is being proposed. Public notice was duly conducted in accordance with State regulations, but more importantly neighboring property owners will not be impacted by these modifications to the City's water rights.

The information or conclusions in this section were authored and/or developed by Dawn Chapel and Jill Van Hulle of Pacific Groundwater Group in consultations with Barbara Burres

CONCLUSIONS

Tentative determination (validity and extent of the right)

The Board finds this water right to be in good standing and eligible to be changed in the original authorized annual quantities.

Relinquishment or abandonment concerns

The Board finds no evidence that this right has been relinquished. This right is considered to be in good standing. We suggest however that since the rate of withdrawal was never actually increased at the point of withdrawal that the Qi associated with this water right be considered as non-additive.

Hydraulic analysis

Based on the information presented above, the Pratley Well is in continuity with the Chehalis River, such that they share a common water body, and can be transferred without impacts to instream flows and existing water users.

Impairment

Operation of the proposed well at its targeted rate of 450 gpm will not impact other water users. This withdrawal rate is the maximum instantaneous rate as authorized by former surface water certificates 2144 and 2324.

Public Interest

No detriment to public interest could be identified during the examination of the subject application.

DECISION

Based on conclusions above, the decision of the Board is to approve the City of Centralia's *Application for Change* and to make the following changes to Surface Water Certificate 2144.

- The point of withdrawal shall be the Pratley Well designated on the second page of this recommendation.
- The purpose of use shall be designated as irrigation of 60 acres.
- The Qi of this water right is 270 gpm, the Qa is 125.20 acre-feet based on climatic conditions and irrigation infrastructure.
- The place of use is the footprint of the Flying T project site as described on page 2 of this recommendation.

The information or conclusions in this section were authored and/or developed by Barbara Burres

PROVISIONS

Metering Requirements:

An approved measuring device shall be installed and maintained for each of the sources authorized by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC. <http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html>

Water use data shall be recorded monthly. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to the Department of Ecology by January 31st of each calendar year.

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the project location, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

Chapter 173-173 WAC describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition the Department of Ecology for modifications to some of the requirements

Construction Schedule/Proof of Appropriation

The water right holder must file the notice of Proof of Appropriation of water (under which the superseding certificate of water right is issued) when the permanent distribution system has been constructed and the quantity of water required by the project has been put to full beneficial use. The superseding certificate will reflect the extent of the project perfected within the limitations of the change authorization. Elements of a proof inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity, place of use, and satisfaction of provisions.

The development schedule established by the Department of Ecology requires the filing of the Proof of Appropriation by March 1, 2015.

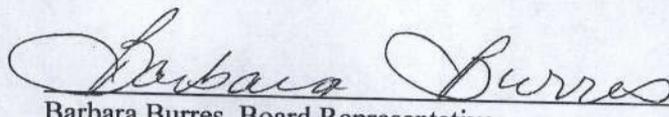
Conditions and limitations

Prior to the onset of the irrigation season the City of Centralia will provide Ecology with an irrigation plan that indicates which portions of the property will be irrigated under these revised water rights.

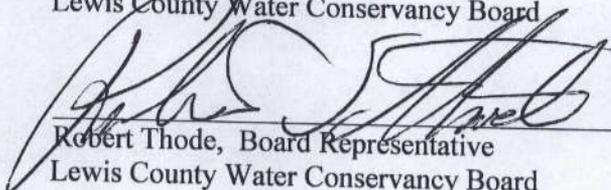
The information or conclusions in this section were authored and/or developed by Barbara Burres

Signed at Chehalis, Washington

This 17 day of July



Barbara Burres, Board Representative
Lewis County Water Conservancy Board



Robert Thode, Board Representative
Lewis County Water Conservancy Board

If you have special accommodation needs or require this form in alternate format, please contact 360-407-6607 (Voice) or 711 (TTY) or 1-800-833-6388 (TTY).

Ecology is an equal opportunity employer

Exhibits:

- Exhibit "A" is a copy of the Application for Change No. LEWI-13-04,
- Exhibit "B" is a copy of Surface Water Certificate 2324.
- Exhibit "C" is the Affidavit of Publication.
- Exhibit "D" is the document entitled *Hydrogeological Assessment of Flying T Property*, Pacific Groundwater Group
- Exhibit "E" Water Right Application Tracking report (7/12/2013) Water Rights within 4 square mile area
- Exhibit "F" Supplemental Analysis of Flying T Water Rights.