Oregon DEQ Division 33 Review Summary Sheet



Application Information	on			
Analisant Names	Cuaia Educinatas	Analization Number	S-88739 (associated with	
Applicant Name:	pplicant Name: Craig Edminster Application Number:		R-88738)	
Basin & Sub-basin:	Upper Willamette Basin	Requested Water Amount:	0.20 CFS	
Nearest Surface	Calapooia River	Nearest Receiving	Calapooia River	
Water:	Calapoola Rivel	Waterbody:		
Proposed Use:	Irrigation of 32.0 acres	Requested Period of Use:	May 1- June 30	
Division 33 Geographic	: Area			
⊠ Lower Columbia □	Upper Columbia Statewide			

Pro	posed Use:	Irrigation of 32.0 acres	Requested Period	of Use:	May 1- June 30			
Divisi	ion 33 Geographic	Area						
\boxtimes	Lower Columbia Upper Columbia Statewide							
_								
Upi	per and Lower Coli	umbia Basins only: Based upon th	ne review					
		es the proposed use comply with						
	•	standards or may conditions be a	~	□No	Yes Insufficient data			
	into compliance?	,,	P. P. S.					
Sta	tewide: Will the pr	oposed use result in water qualit	y impacts that will					
cau	se either "loss" or	"net loss" of essential habitat of	sensitive threatened	l □	Yes Insufficient data			
or e	endangered (ST&E)	fish species? (Note: the presenc	e of ST&E fish	□ No	Yes Insufficient data			
spe	cies is determined	by Oregon Department of Fish ar	nd Wildlife.)					
_								
	ommended Pre-Pro	oposed Final Order Actions						
1.								
2.								
3.								
	tigation Obligation							
		Proposed Final Order, the applica		•	•			
		the permitted use. The proposal						
		oriation, or the uppermost point of		-				
		f a surface water right is used for	-					
	•	nilar water quality. The applicant	should contact their	OWRD cas	seworker to discuss flow			
mii	tigation options.							
Reco	ommended Permit	Conditions						
	Site Specific Cond							
	•		(clearing grading ex	cavation	staging and stockniling)			
Construction Activities: For construction activities (clearing, grading, excavation, staging, and stockpiling) that will disturb one or more acres, and/or may discharge to state waters, the permittee is required to								
		a 1200-C NPDES Stormwater Con						
2.	2. Water Storage Construction: For Hawkins Pond (R-88738), the applicant shall locate the reservoir outside of							
the 100 year flood plain of the natural stream channel.								
	,	•						
3.	Riparian: If the ri	parian area is disturbed in the pro	ocess of developing, n	nodifying	or repairing a point of			
	diversion under this water use permit, the permittee shall be responsible for restoration and enhancement							
of such riparian area in accordance with the Oregon Department of Fish and Wildlife's Habitat Mitigation								

Policy described in Oregon Administrative Rule OAR Chapter 635-415. Prior to development, modification or repairs at the point of diversion, the permittee shall submit, to the Oregon Water Resources Department, either a Riparian Mitigation Plan approved in writing by Oregon Department of Fish and Wildlife (ODFW) or a written declaration from ODFW that riparian mitigation is not necessary. The permittee shall maintain the riparian area for the life of the permit and subsequent certificate per the approved Riparian Mitigation Plan. The permittee is hereby directed to contact the local Oregon Department of Fish and Wildlife Fish Biologist prior to development of the point of diversion.

- **4. Water Quality**: All water use under this permit shall comply with state and federal water quality laws. The permittee shall not violate any state and federal water quality standards, shall not cause pollution of any waters of the state, and shall not place or cause to be placed any wastes in a location where such wastes are likely to escape or be carried into the waters of the state by any means. The use may be restricted if the quality of source stream or downstream waters decrease to the point that those waters no longer meet existing state or federal water quality standards.
- 5. Agricultural Water Quality Management Area Rules: The permittee shall comply with basin-specific Agricultural Water Quality Management Area Rules described in Oregon Administrative Rule Chapter 603-095. The permittee shall protect riparian areas, including through irrigation practices and the management of any livestock, allowing site capable vegetation to establish and grow along streams, while providing the following functions: shade (on perennial and some intermittent streams), bank stability, and infiltration or filtration of overland runoff.
- **6. Off-Channel Stored Water Releases**: The permittee shall not release polluted water from this off-channel reservoir into waters of the state except when the release is directed by the State Engineer to prevent dam failure.

Additional	Reviewer	comments	No	X Yes

[Use this space to describe any of the following: reasoning to substantiate permit conditions; examples of additional information that may allow or disallow the use; and why any variations to the standard Division 33 review process were necessary. Designate conditions related to Division 310 with an asterisk.]

Per the Initial Review, the applicant has submitted water right applications for both surface water withdrawals under S-88379 and a reservoir under R-88738. To ensure that state and federal water quality standards are met, diversion and impoundment construction and operation best practices must be implemented during all phases of the life of this project. This Division 33 review includes pertinent conditions and requirements that must be met in order to ensure compliance for both permit applications. The applicant must be notified that land-clearing activities or disturbance or impacts t10 wetlands or waters of the state may require a 1200-C permit from DEQ, a Removal/Fill permit from DSL and/or a 404 permit from the U.S. Army Corps of Engineers.

Additionally, the proximity of the reservoir to the Calapooia River could potentially have groundwater impacts. DEQ would like additional information regarding the dimensions of the reservoirs, and the depth-to-groundwater (the distance between the bottom elevation of the reservoir and the water table). DEQ would like to know whether this facility will be intercepting groundwater prior to its construction, and whether a groundwater right will be required if the facility is storing groundwater. In the event the water right permit holder does not want a permit for any potential groundwater, lining the pond to prevent interception could be an alternative solution. DEQ may recommend this condition depending on the information provided by the applicant.

Interagency consultation: [Describe any substantial interagency consultation. Who was contacted and what						
was discussed?]						
DEQ review prepared by: Roxann Nayar	Date complete: February 7, 2020					

ODA Review Request

ODA review requested: No Yes	Date review sent to ODA: January 31,2020
ODA reviewer: P. Measles/M. Matter	ODA review date: February 5, 2020
ODA comments	
[ODA: enter the results of your review here. Designate cond (a.) M. Matter: This type of proposed operation is likely to b and change volume.	

Antidegradation Policy:

The purpose of DEQ's Antidegradation Policy (OAR 340-041-0004(1)) is to guide decisions that affect water quality to prevent unnecessary further degradation from new or increased point and nonpoint sources of pollution, and to protect, maintain, and enhance existing surface water quality to ensure the full protection of all existing beneficial uses. Oregon's Antidegradation Policy allows exemptions and conditions for new or increased water use.

1. Temporary Use or Net Benefit

Does the applicant propose a temporary use in response to	an emergency, a	a restoration activity that the DEQ
has determined provides a net ecological benefit, or a temp	orary (lasting les	ss than six months) use to protect
human health and welfare, for which the applicant has dem	onstrated that t	hey will minimize adverse effects
to threatened and endangered species?	\boxtimes No	Yes

If yes, recommend approval of the application and identify conditions necessary to protect water quality for the habitat of ST&E fish species. You may skip to Question 7.

2. Outstanding Resource Water

Does the applicant propose withdrawing directly	from an Outstanding Reso	ource Water	with critical habitat
for ST&E fish species?	$oxtimes_{No}$	\square Yes	

If yes, then prior to permit issuance, the applicant must provide suitable flow mitigation. You may skip to question 7.

3. Water Quality Limited

Is this source Water Quality Limited or a tributary to a w	vater quality limit	ed water body? Note: limit
downstream review to 6th field HUC for parameters that	diminished flow	can affect (temperature, dissolved
oxygen, pH, etc.).	\square_{No}	⊠ _{Yes}

Integrated Report 303(d) List Summary Table

Water Body (Stream/Lake)	River Miles	Parameter	Season	Criteria	Beneficial Uses	Status
Calapooia River	0-69.2	Biological Criteria	Year round	Biocriteria	Aquatic Life	TMDL needed
Calapooia River	0.1-31.2	Dissolved Oxygen	Jan 1- May 15	Spawning	Resident trout spawning	TMDL needed

Calapooia River	0-42.2	E. Coli	Fall, Winter,		Water contact	TMDL
Calapoola Rivel	0-42.2	E. COII	Spring		recreation	approved
				Salmon and	Salmon and	TMDL
Calapooia River	0-35	Temperature	Year round	trout rearing	trout rearing	
				and migration	and migration	approved
			Sept 1- June	Salmon and	Salmon and	TMDL
Calapooia River	35.7-72.4	Temperature	15	steelhead	steelhead	approved
			13	spawning	spawning	арргочец
Calapooia River	35.7-78	Temperature	Year round	Core cold	Core cold water	TMDL
				water habitat	habitat	approved

Analysis: [If the answer to question 3 is yes, then describe how the use does or does not comply with existing state and federal water quality standards, and how the use may affect ST&E fish species habitat.] The Calapooia River is water quality limited for Biological Criteria, Dissolved Oxygen, E. Coli, and Temperature. The impairments that directly impact ST&E species include dissolved oxygen and temperature. Streamflow rates are known to strongly influence temperature, bacteria and hydrogen ion (measured as pH) concentrations. When streamflow rates are lowered, the remaining flow will have a lower heat capacity. Oxygen is less readily dissolved in warm water, and cooler water tends to have higher amounts of dissolved oxygen. Species that are adapted to cold water environments tend to require higher levels of dissolved oxygen. High water temperatures combined with low dissolved oxygen concentrations are among the strongest stressors to aquatic life. Temperature and dissolved oxygen impairments will be exacerbated by any stream-flow reduction associated with the proposed withdrawal. The capacity of a waterway to assimilate pollution is also flow dependent. In summary, reduced flows can harm or stress stream biota, increase the concentrations of bacteria, and extirpate cold-adapted species from areas where they have occurred historically.

Recommended Conditions: [Consider if water quality can be protected by limiting the rate and quantity of water used, period of use, or by including other permit conditions.]

Water Quality, Agricultural Water Quality Area Management Rules, Off-Channel Stored Water Releases

4. Total Maximum Daily Load Summary

Are there TMDLs established for parameters identified	as being affected b	by flow modification?	No Yes
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Analysis: [List TMDL, identify the load allocation, and if flow modification is a contributing factor. Describe how the use does or does not comply with existing state and federal water quality standards and how the use may affect ST&E fish species habitat.]

The Calapooia River is impaired for temperature. Oregon's stream temperature standards are based on the life cycle needs of salmonids and other resident fish and aquatic life. Stream temperatures that exceed the standards can disrupt the life cycle of sensitive, threatened or endangered (ST&E) fish species and may even cause death.

Surface water temperatures are warmed by anthropogenic activities, such as discharging heated water and water withdrawals. In waterbodies where temperatures are already known to exceed standards, further withdrawals from the stream will reduce the stream's heat capacity, causing greater fluctuations in daytime and nighttime stream temperatures. This results in the diminution of habitat for sensitive, threatened and endangered fish species.

There may be no more than a 0.3 degree Celsius increase between the water temperature immediately upstream of the reservoir and the water temperature immediately downstream of the spillway prior to the development of a Total Maximum Daily Load.

The Calapooia River is also impaired for dissolved oxygen. Fish and other aquatic species require minimum concentrations of dissolved oxygen based on their species and life history stage to grow and remain healthy. Oregon's dissolved oxygen standards are based on the most sensitive species and life history stage within a waterbody and season of concern. For this river, this season is January 1- May 15. In waterbodies where dissolved oxygen concentrations are known to be insufficient for the habitat of ST&E species, any actions or conditions that cause additional reduction in dissolved oxygen concentrations would result in the diminution of habitat.

Recommended Conditions: [Consider if water quality can be protected by limiting the rate and quantity of water used, period of use, or by including other permit conditions.]

Water Quality, Agriculture Water Quality Management Area Rules, Off-Channel Reservoir Releases

5.	Cumulative	e Withdrawa	ıls	Fffects

Is it likely that the proposed activity, together with existing	ng withdrawa	ls in the OWRD's W	ater Availability Basin
(WAB), will lower water quality and impair aquatic life?	☐ No		

Water Availability Summary Table

Percent of natural flow = (consumptive use/natural stream flow)*100. See Appendix for detailed instructions.

[Water Availability Basin]: Calapooia River > Willamette River > At mouth

Watershed ID	Exceedance Level	Month	Natural Stream Flow	Consumptive Use	Expected Stream Flow	Reserved Stream Flows	Instream Requirement	Net Water Available	Percent of Flow
76	50	JAN	1300	3.39	1300	0	20	1280	0
76	50	FEB	1260	3.34	1260	0	20	1240	0
76	50	MAR	996	2.28	994	0	20	974	0
76	50	APR	664	2.08	662	0	20	642	0
76	50	MAY	404	19	385	0	20	365	5
76	50	JUN	178	14.3	164	0	20	144	8
76	50	JUL	73.9	22.2	51.7	0	20	31.7	30
76	50	AUG	35.9	16.1	19.8	0	20	-0.205	45
76	50	SEP	34.9	8.35	26.6	0	20	6.55	24
76	50	ОСТ	58.1	2	56.1	0	20	36.1	3
76	50	NOV	449	2.39	447	0	20	427	1
76	50	DEC	1270	3.36	1270	0	20	1250	0
76	50	ANN	404000	6010	398000	0	14500	383000	1

Monthly flow in Cubic Feet per Second (CFS). Annual flow in Acre Feet (AF)). Highlight months that exceed 20% of percent of flow.

6. Flow Modification Compliance with State and Federal Water Quality Standards

Based on responses to questions 3, 4, and 5, is the use in compliance with state and federal water quality standards or can compliance with state and federal water quality standards be assured, and ST&E habitat loss

	prevented by limiting the amount diverted, period of use, or by imposing permit condition(s)? \square No \square Yes
	• If yes:
	Recommended Conditions: [If water quality can be protected by modifying or limiting the amount diverted, period of use, or other permit conditions, then select appropriate condition from the conditions list.]
	Water Quality, Agricultural Water Quality Management Area Rule, Off-Channel Stored Water Releases
	• If no, can flow mitigation ensure compliance with state and federal water quality standards and prevent loss of ST&E habitat?
7.	Compliance with other State and Federal Water Quality Standards ORS 468B.025 prohibits pollution of waters of the state. Are there additional water quality impairments that would result from this proposed used by degrading surface water or groundwater quality? No Yes
	If water quality can be protected by applying permit conditions, then select all appropriate conditions from the standardized menu of conditions.
	Recommended conditions: [List conditions]
	Ensuring that water diversion, storage and use does not impact the critical months needed by ST&E species for spawning, rearing and migration is a priority. Recommended conditions apply to reservoir operations as well:
	- Water Quality, Water Storage Construction, Agricultural Water Quality Management Area Rules - Off-Channel Stored Water Releases, Construction Activities, Riparian

PRE-PROPOSED FINAL ORDER ACTIONS

DEQ requests that the applicant provide suitable replacement water as mitigation for anticipated impacts to water quality and more specifically the habitat of sensitive, threatened, and endangered fish species. Additional mitigation may be required from other Interagency Review Team members (for example: OWRD may require mitigation for periods when water is not available). Surface water flow mitigation is unlikely to provide the same benefit that groundwater can provide to gaining stream reaches. However, if groundwater mitigation is unavailable within the same aquifer, surface water mitigation may provide suitable mitigation.

Flow Mitigation Obligation:

Prior to issuance of a Proposed Final Order, the applicant shall submit a mitigation proposal that is of no less volume and rate than the permitted use. The proposal shall include water that is sourced upstream of the point of diversion or appropriation, or the uppermost point on the stream at which the potential for surface water interference occurs. If a surface water right is used for mitigation, it shall be instream for the *month - month time* period and of similar water quality. The applicant should contact their OWRD caseworker to discuss flow mitigation options.

Riparian: If the riparian area is disturbed in the process of developing, modifying or repairing a point of diversion under this water use permit, the permittee shall be responsible for restoration and enhancement of such riparian area in accordance with the Oregon Department of Fish and Wildlife's Habitat Mitigation Policy described in Oregon Administrative Rule OAR Chapter 635-415. Prior to development, modification or repairs at the point of diversion, the permittee shall submit, to the Oregon Water Resources Department, either a Riparian Mitigation Plan approved in writing by Oregon Department of Fish and Wildlife (ODFW) or a written declaration from ODFW that riparian mitigation is not necessary. The permittee shall maintain the riparian area for the life of the permit and subsequent certificate per the approved Riparian Mitigation Plan. The permittee is hereby directed to contact the local Oregon Department of Fish and Wildlife Fish Biologist prior to development of the point of diversion.

Water Storage Construction: The applicant shall locate the reservoir outside of the stream's natural channel. identify waterbody and set back to prevent stream capture and justification for distance selected.

(Note to reviewer: The 1200C permit requires a 50-foot setback, which is cited from the National General Construction Permit OAR-660-023-0090(5). Requiring the storage reservoir to be outside of the mapped 100 year floodway may also be a protective buffer.)

STANDARIZED MENU OF CONDITIONS

Water Quality: All water use under this permit shall comply with state and federal water quality laws. The permittee shall not violate any state and federal water quality standards, shall not cause pollution of any waters of the state, and shall not place or cause to be placed any wastes in a location where such wastes are likely to escape or be carried into the waters of the state by any means. The use may be restricted if the quality of source stream or downstream waters decrease to the point that those waters no longer meet existing state or federal water quality standards.

Agricultural Water Quality Management Area Rules: The permittee shall comply with basin-specific Agricultural Water Quality Management Area Rules described in Oregon Administrative Rule Chapter 603-095. The permittee shall protect riparian areas, including through irrigation practices and the management of any livestock, allowing site capable vegetation to establish and grow along streams, while providing the following functions: shade (on perennial and some intermittent streams), bank stability, and infiltration or filtration of overland runoff.

Flow Restrictor: The permittee shall install a flow control valve on the diversion system to limit use to the permitted rate. The valve shall be in place, functional, and verified by the Certified Water Rights Examiner before a certificate is issued. The valve or a suitable replacement shall remain in place for the life of the water right.

Limit Rate: Water withdrawal shall be limited to *Enter CFS or AF for the defined period, or a month by month rate or volume*.

Limit Period of Use: Water use shall be limited to the period: *start date through end date*. (Note to reviewer: Do not split the irrigation season. Require mitigation if water is not available during the requested time period.)

Limit Diversion: The permittee shall not divert water under this water use permit unless streamflow in the waterbody name is at or above *CFS* cubic foot per second, as determined at **Gaging Station ID** .

Off-Channel Stored Water Releases: The permittee shall not release polluted water from this off-channel reservoir into waters of the state except when the release is directed by the State Engineer to prevent dam failure.

On-Channel Reservoir: The permittee shall design and operate the water storage facility such that all waters within and below the reservoir meet water quality criteria. The permittee shall develop a reservoir operations plan that details how water quality criteria and standards will be met. A Certified Water Rights Examiner shall verify that the reservoir operations are consistent with the plan before a certificate is issued. The reservoir operator shall maintain a copy of the plan and make it available for review upon request.

Restrict Reservoir Release: To prevent pollution downstream, the permittee shall not release water from the reservoir when the flow at Gaging Station ID (gage name) is below the Mean Daily Discharge of *CFS* (discharge which was equaled or exceeded for 90% percent of the time) except when the release is directed by the State Engineer to prevent dam failure.

Live Flow: Once the allocated volume has been stored, permittee shall pass all live flow downstream at a rate equal to inflow, using methods that protect instream water quality.

Lining: The permittee shall line the reservoir with *include material or allowable infiltration rate* to minimize seepage and protect groundwater quality per Oregon Administrative Rule 340-040. The liner is to be in place, inspected, and approved by the Certified Water Rights examiner prior to storage of water.* If the liner fails, the water user shall replace it within one calendar year.

Site-Specific Condition: The permittee shall

^{*} OAR 690-410-0010(2)(a), OAR 690-310-0120, OAR 690-310-0140

Appendix: General Overview, Instructions for Water Availability Analysis, and Process Flow Chart

General Overview

The purpose of OAR Chapter 690, Division 33 is to aid the Oregon Water Resources Department (OWRD) in determining whether a proposed use will impair or be detrimental to the public interest with regard to listed sensitive, threatened, or endangered (ST&E) fish species. Oregon's stream temperature, dissolved oxygen (DO), pH and several other water quality standards are based on the life cycle needs of salmonids and other resident fish and aquatic life. Exceeding the standards can disrupt the life cycle of a ST&E fish species and may cause death. In addition, OWRD must consider water quality impacts as part of a public interest review, OAR 690-310-0120. Water quality impacts and conditions unrelated to ST&E species should be noted as "Division 310" in the recommendations to OWRD. The DEQ's Water Right Application Review Procedures document contains a full description of the review process.

The two main categories of Division 33 reviews are based on the geographic distribution of ST&E fish species:

- o **For Proposed Uses in the Columbia River Basin,** reviews must determine whether a proposed use complies with existing state and federal water quality standards. Upper Columbia applications specifically require applicants to provide evidence that the proposed use complies with existing state and federal water quality standards. <u>Geographic scope</u>: Columbia River Basin (includes all waters that ultimately drain into the Columbia River).
- o **For Proposed Uses Statewide,** review is conducted under the "Statewide review" procedure. Statewide reviews must determine whether a proposed use may affect ST&E fish species habitat. The statewide review procedure is intended to identify permit conditions that can prevent the "loss" or "net loss" of essential habitat of ST&E fish species. When permit conditions cannot be identified that meet this standard, then the DEQ recommends denial of the permit. <u>Geographic scope</u>: all areas outside the Columbia River Basin where OWRD determines ST&E fish species are present.

Instructions for Populating the Water Availability Summary Table using data from OWRD's WAB (Section 5)

- Open OWRD's Water Availability Reporting System.
- Search for the water availability basin of interest. Select 50% exceedance. The 50% exceedance stream flow is the stream flow that occurs at least half of the time.
- The water availability analysis will display a nested list of watersheds that contain the POD. Select the highest nesting order WAB that contains the POD.
- Download to an Excel spreadsheet. Percent of flow is calculated using this equation:

$$Percent of Flow = \frac{Consumptive Use}{Natural Stream Flow} * 100$$

You may choose to add the proposed rate (or storage amount) to the consumptive use.

Instructions for Water Availability Analysis

To complete Section 6, review and consider the cumulative impact of consumptive withdrawals using the OWRD WAB. All water withdrawals and the following factors should be considered when conducting a water availability analysis.

• Instream Flow: Consider the percent of natural flow left instream in each month (see right-most column in Table 1). Based on best professional judgment, evaluate if the cumulative withdrawal is likely to cause

impairment to aquatic life or water quality. Water quality standards are established to protect aquatic life. In scientific literature, researchers have identified ecological harm occurring when flows are reduced by >6-35% of daily flow¹. Consider the seasonality of any listings and season of withdrawal to determine impact for each month of the year.

- Antidegradation: Rule 340-041-0004 applies: withdrawals cannot cumulatively increase a waterbody's temperature by more than 0.5 degrees Fahrenheit or cause a 0.1 mg/l decrease in dissolved oxygen from the upstream end of a stream reach to the downstream end of the reach so long as it has no adverse effects on threatened and endangered species. See OAR 340-041-0004(3)-(5) for a description in rule of activities that do not result in lowering of water quality.
- **Flow modification**: Consider if cumulative withdrawals are contributing to flow modification and a likely limiting factor in the waterbody at certain times of the year. Temperature and dissolved oxygen are flow-related parameters. When streamflow is reduced, assimilative capacity is reduced. As a waterbody heats up, dissolved oxygen concentrations decline. Reduced stream flows (including groundwater inputs to streamflow), exacerbate temperature and/or dissolved oxygen impairments.
- Temperature: Increases in temperature or a reduction in dissolved oxygen adversely impacts ST&E fish. Fish
 require different temperature and concentrations of dissolved oxygen based on species and life history stage.
 Oregon's temperature and dissolved oxygen limits are based on the most sensitive species and the life history
 stage of those species at the location and season of concern. Additional heat or reduction in dissolved oxygen
 concentrations will further impact these species habitat. Reduced flows can also increase the concentrations
 of phosphorous, bacteria, pesticides and metals.

¹ Richter BD, Davis MM, Apse C, Konrad C. 2011. Short Communication, A Presumptive Standard For Environmental Flow Protection. River Research and Applications. Published online in Wiley Online Library (wileyonlinelibrary.com), DOI: 10.002/rra.1551

DEQ Water Right Review Flow Chart

