

Tribal FishCo LLC
Fish Plant Operation 2021
Quality Assurance Project Plan
(QAPP) Rev.2



Prepared By:
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Tribal FishCo LLC Fish Plant
Fish Plant Operation 2021
QAPP

Prepared for:

Tribal FishCo LLC
White Salmon, WA

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Preface

Aqua-Terra Consultants (ATC) notified the Cities of White Salmon and Bingen on December 28, 2020 that Tribal FishCo (TFC) intended to operate the plant in 2021 and was prepared to sign an Industrial Users Agreement. Because of a variety of circumstances (the pandemic, City Hall shutdowns, staff shortages at City Hall), the agreement was not drafted in time. In 2015, the Cities authorized a Pilot Test by having TFC sign a temporary agreement with the Cities. The agreement had a Quality Assurance Project Plan (QAPP) prepared by ATC attached to the agreement. The QAPP contained the safeguards that TFC and their contractor would abide by in order to mitigate any risk to the operation of the Bingen Sewage Treatment Plant (STP).

TFC has signed an agreement with a contractor who intends to operate the plant for a 3 month period in the Summer / Fall of 2021. The contractor has a long history operating the plant including the Pilot Test in 2015. The bulk of the operation in 2021 will be fish offloading and transfer, and only a small percentage of the fish (10,000 – 12,000 pounds in total) will be headed and gutted onsite. The design tonnage for the plant is 50,000 pounds per day maximum and 20,000 pounds per day average.

The purpose of this document is to provide the details and safeguards for operating the fish plant so that the Cities and the Department of Ecology can issue a temporary approval to discharge to sewer for the 2021 season.

Production and Pollutant Load Assumptions

Table I summarizes the flow and load data for 2015 and the projections for 2021.

TABLE I

2015 Pilot: Offloading / Butchering / No Roe Recovery / No Filleting				
	TSS/TS Ratio	BOD lbs/ton	TS lbs/ton	gal / ton
	6.0%	1.59	3.44	414
				Based on 8 data points
2015 Pilot: Offloading Only				
TS, mg/l	COD, mg/l	BOD, lbs	TS, lbs	gallons
1,550	482	7	38	2,920
	COD/BOD	1.59		Based on 2 data points
2021 Estimated Flows and Loads Based on 2015 Ratios				
Production, lbs		BOD, lbs	TS, lbs	gallons
12,000		10	21	2,484

The contractor only intends to process about 12,000 pounds this season. The worst case scenario would be to process this tonnage in one day.

Table II summarizes the flow and production data for 2015:

Table II

2015 Pilot Test	
Round lbs Processed	Wastewater gallons
18,269	5,341
35,036	5,353
37,777	5,985
43,259	6,126
32,904	7,504
50,000	7,658
34,160	7,895
31,874	9,520

Based on 2015 data, 12,000 pounds should result in 2,484 gallons. This volume is substantially less than for any of the processing days in 2015. This volume will easily fit into either of the 6,900 gallon tanks that will be rented. One tank could easily hold the wastewater for two to three times the anticipated production tonnage for 2021.

If the fish are processed on one day, the predicted BOD of 10 pounds and the Total Solids of 21 pounds falls well short of the limits set by the Cities in Table III:

Table III

City Pollutant Load Limits for TFC		
	BOD	TS
	lbs.	lbs.
Week 1	75	100
Week 2	150	200

Clearly, the 2021 processing volume, even if processed on one day will fall well short of flow and loads that would exceed the limits set by the Cities in 2015. On offloading days only it should be evident that the flow and load should be lower and of even less concern. Because there were only two data points for offloading in 2015, additional data points will be collected in 2021 in order to continue to build a more accurate database for this operation.

Tribal FishCo will be contracting with an experienced fish processing company to equip the plant for the 2021 plant operations. The flow and pollutant load projections assume that the plant will be set up and operated in a similar fashion to the mode of operation in 2015:

1. Product delivered to the plant will be fresh and cold and a HACCP Plan will be in place to ensure product quality. Plant ice will be available to the fisherman.
2. Fish will be delivered in totes, on ice. No salted slush ice is allowed to be dumped or discharged in the plant. A meter will be used to measure the salinity before the tote is dumped. If the reading is less than 2 ppt, the tote will be accepted.

3. The fish and ice will be dumped onto a deicing / sorting table and/or the fish will be transferred to clean, iced totes. Any discarded ice cannot be dumped outside the plant and must be contained in the building.
4. The fish will be dumped on a deicing chute / table where the belly may be slit.
5. The fish will be manually fed to an automatic heading machine or headed manually. Heads will be dry conveyed into totes.
6. The fish will be transferred to butchering stations for manual evisceration and cleaning. Fish waste will be dry conveyed into totes. The body cavities will be manually cleaned in a rinse tank that will be filled and dumped approximately 4 times per day.
7. The headed and gutted fish will be sorted and iced for shipment.
8. Alternatively, the fish will be transferred whole to totes with fresh ice for trucking offsite.
9. Totes will be power washed as needed and recycled. This activity will be done in the plant. The tote washing area will be in close proximity to the channel drains so that the tote washing wastewater will drain to the in-plant sump and mixed with the other wastewaters (offloading, processing, etc.).
10. Best Management Practices (BMP) and water conservation measures will be implemented for keeping the floor clean. Solid waste on the floor will be squeegeed and shoveled into a waste tote. Floor grates will not be removed.
11. Clean up water use will be based on first dry cleaning the equipment and the plant, followed by wet cleaning and then sanitizing at the end of each production day. This procedure will ensure that as much of the solid waste as possible is sent

out for approved disposal and not discharged to sewer. Another benefit is that this will reduce the amount of water for cleaning and discharging to sewer. Sanitizers shall be approved for food plant use and sewer disposal and applied correctly. TFC will be using sanitizers and cleaners that are currently being supplied to other fish processing plants, some of which also discharge to their local sewer system. TFC has installed a foaming station that automatically mixes and dispenses the correct ratio of water to cleaning chemical. Since the clean up wastewater will be stored with the processing wastewater in the holding tanks, the small quantity of cleaning chemicals will be greatly diluted when mixed with the processing water and should not be an issue for the WWTP. Information on sanitizer ingredients and quantity used will be provided to the City of Bingen STP personnel.

12. The Hydrosieve will be intermittently power washed as needed. This ensures that the wire screen does not plug up and prevent the wastewater from being screened. The power washing will push the large solids into the screenings tote and the finer solids and water will pass through the screen and discharge into the screened wastewater tote and comingled with the other wastewaters (offloading, processing, etc.).

In order to accommodate the request from the Cities to limit the daily pollutant load discharged to the STP, the wastewater treatment system is configured per the last pilot test. Appendix A-1 contains the wastewater schematic. The only change is that the rental storage tanks have been sized for the expected discharge this year.

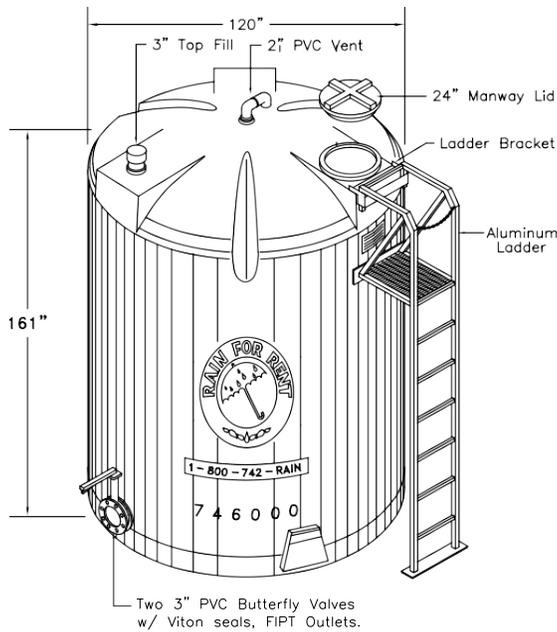
The discharge from the two storage tanks is plumbed so that one tank can fill while the other tank is discharging to the existing outside below ground sump. The sump pumps for this sump are operated by a float switch and pump the process and sanitary wastewaters to the City lift station.

A tote of Bioxide and a pump will be available to pump odor controlling chemicals into the existing outside above ground sump should there be odors in the sewer lines / lift stations due to the fish processing effluent. The City of Bingen and/or the City of White Salmon will notify TFC of odor issues as they arise.

Liquid Waste Disposal

The following is the proposed strategy for controlling the pollutant load to the STP:

1. Offloading and production is anticipated to start each day by mid-morning and end late afternoon. All of the process and clean up water will be screened and stored in the outside rental tanks:



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- For the first three weeks of production / offloading, samples of the wastewater at the end of clean up will be collected early evening using a Sludge Judge inserted through the Manway on the rental storage tank(s). This will provide a representative sample even if the tanks are stratified.
2. The wastewater from the tank(s) will be tested onsite for Total Solids and COD and the results will be available by 08:00 the following morning. BOD will be calculated from COD. Based on the total volume of wastewater in the tank(s) (as recorded by the existing flow meter) and the COD and Total Solids concentration, the pollutant load in the tank(s) will be calculated to ensure that the City permit limits are being met.
 3. Knowing the volume to discharge to sewer and the approximate time before the fish plant will start offloading again, the discharge rate from the storage tank(s) to the STP will be calculated (e.g. if 21,000 gallons are to be discharged to the STP in 8 hours, the flow rate from the tanks to sewer would need to be approximately 44 gpm). The total volume of wastewater and the pollutant load shared with the STP Manager. Once approved for discharge, ATC or the contractor manager will open the flow control valve on the line discharging from the storage tanks and adjust the flow by watching the flow rate displayed on the new flow meter on the discharge line. The maximum flow rate is limited to 60 gpm subject to revision by the Bingen Treatment Plant Manager based on any impacts to the treatment plant. As the level drops in the storage tank(s), the valve will be progressively opened as necessary. The totalizer on the meter will be recorded at the start and end of the discharge so that the exact volume of wastewater discharged to the STP can be calculated. As a backup, the hour meters on the outside below ground sump will be recorded and converted to gallons pumped (a sump draw down will be done before the start of the season in order to determine the pumping rates in gallons per minute). Additionally, a level logger will inserted into and retrieved from the tank each day to record the rate at which the tank emptied.

4. Prior to starting the discharge to the STP, the composite sampler will be programmed to collect a time paced composite sample (since the wastewater flow rate will be constant and the duration known). As soon as the ATC or the contractor manager opens the flow control valve to start draining the storage tanks, the composite sampler should be energized. A grab sample can be collected any time during the discharge. Wastewater samples collected will be prepared for shipment by courier to the outside lab the following day. Wastewater samples will be sent to the lab by ATC or TFC.

Testing and Monitoring

The fish plant is equipped with a mag flow meter installed on the pressure side of the in-plant sump pump piping. This meter will be recorded daily before the start of production in order to have a record of the fish offloading and processing wastewater generated per day and pumped to the outside storage tanks. The meter will be volumetrically verified before start-up.

The refrigerated composite sampler will be relocated near the discharge line from the storage tanks to the outside below ground sump. The sampler will be set up to collect time proportioned samples since the volume and discharge time will be known each day.

Table IV is a summary of the sampling, testing, and monitoring that will be done onsite and by a third part certified lab. Onsite testing and monitoring will be performed by ATC using approved methods. Onsite testing results will be shared with all parties as the results become available. Onsite testing will be performed daily for the first two weeks of operation on the samples collected from the storage tanks. Once weekly composite samples of the wastewater discharged to the STP will be sent to the outside lab. During the first two weeks, several samples of the composite sample will also be tested onsite for

COD and Total Solids to ensure that the core sample collected from the tanks before discharge to the STP is the same as the composite collected during the discharge.

TABLE IV

Analysis	Onsite? / Testing Time	Frequency	Outside Lab? / Turn around time	Frequency	Comments
BOD5	No		Yes, approx. 3 weeks	Once weekly	
COD	Yes, approx. 3 hrs.	Daily first 2 wks	No		Can be used to estimate BOD5
Total Solids, TS	Yes, prelim. 3 hours	Daily first 2 wks	Yes, approx. 3 weeks	Once weekly	
Total Suspended Solids, TSS	No		Yes, approx. 3 weeks	Once weekly	
Ammonia-Nitrogen, NH3-N	Yes, approx. 1 hr.	Daily first 2 wks	Yes, approx. 3 weeks	Once weekly	
Total Kjeldahl Nitrogen, TKN	No		Yes, approx. 3 weeks	Once weekly	
Total phosphorous, TP	No		Yes, approx. 3 weeks	Once weekly	
Oil and Grease	No		Yes, approx. 3 weeks	Once weekly	
pH	Yes, approx. 15 minutes	Daily first 2 wks	No		
Salinity	Yes, continuous and grab	Daily first 2 wks	Yes, approx. 3 weeks	Once weekly	Salinity logger and hand held conductivity meter
Flow	Yes	Daily	No		Meter installed onsite

Onsite COD testing will be used for immediate estimates for BOD using the COD/BOD ratio of 1.59:1 per the 2015 Pilot Test results.

A level / temperature / Salinity logger will be placed in the in-plant sump to monitor the fish processing effluent.

Sample logs, onsite testing bench notes, and chains of custody will be available for review.

Personnel at the wastewater treatment plant will be responsible for sampling, testing, and monitoring the influent to and effluent from the STP.

Solid Waste Disposal

Assuming a 65% recovery and 35% solid waste, the processing of 12,000 pounds of salmon will generate 4,200 pounds of solid waste. The contractor processing the fish will be responsible for hauling the waste for approved disposal.

Requirement to Halt Discharge

Based on prior Engineering Reports, the results from prior Pilot Tests, and the imposed discharge limits set by the Cities, the discharge to the STP is not expected to create any adverse impacts. However, should the STP operator determine that there is a harmful impact on the STP or conveyance system; there may be a need to temporarily halt or reduce the flow of fish processing wastewater. The fish plant has the necessary storage tanks and production flexibility in place to accommodate any unexpected issues.

STP Monitoring

During the time period when the fish plant is in operation, STP personnel will log data and sample per the routine procedures. Abnormal operating conditions and equipment break downs at the STP, should they occur, should be logged. If the STP is adversely affected when the fish plant is discharging to the STP, ATC will request permission to collect samples of the influent and effluent for analysis by ATC or an outside lab. The goal would be to determine whether the discharge from the fish plant is the source of the problem.

Odor Abatement

Bioxide and a metering pump will be onsite should odor abatement be required. The vender has recommended that it is best to inject the Bioxide upstream of where odors could develop. Injection at the outside Above ground sump would give adequate mixing and reaction time prior to discharge to the first lift station. The metering rate for Bioxide will be per the recommendations of Gray and Osborne. The City of Bingen and/or the City of White Salmon will notify TFC of odor issues as they arise.

Discharge Scheduling

The measured daily volume and pollutant load at the fish plant will be used to determine whether the wastewater can be routinely discharged.

TFC WASTEWATER SCHEMATIC 2021

TFC Flow Schematic 2021.vsd

APPENDIX A-1

