

State Water Resources Control Board
Office of Enforcement
Fraud, Waste, and Abuse Prevention Unit

Case Title: North Yuba Water District, Project No. 5810006-001P (Proposition 1 Planning Grant)

Subject of Report: Investigation Report

Reporting Official and Date: Jacques Lord, CEG; September 9, 2019

Proposition 1, the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (California Water Code sections 79700-79798) (Prop 1) authorizes \$7.545 billion in general obligation bonds for water projects including surface and groundwater storage, ecosystem and watershed protection and restoration, and drinking water protection. Section 79724 of Prop 1 allocates \$260 million for drinking water grants and loans for public water systems infrastructure improvements and related actions to meet safe drinking water standards, to ensure affordable drinking water, or both, through water conservation and water-use efficiency (Section 70743(b)). Prop 1 funds are administered by the State Water Resources Control Board's (State Water Board) Division of Financial Assistance (DFA) and Division of Administrative Services, in cooperation with the Division of Drinking Water (DDW) and the Office of Chief Counsel (OCC).

The North Yuba Water District (NYWD) is made up of a Board of Directors consisting of five elected members representing five different districts within the NYWD service boundaries, and a General Manager who works at the direction of the Board of Directors. On March 4, 2015, the NYWD submitted application documents for Prop 1 grant funding for a Forbestown Pipeline construction project located in Yuba and Butte Counties. DFA reviewed the application and notified NYWD that plans needed to be completed before a construction project could be approved. DFA revised the application to a Planning Grant requesting the maximum \$500,000 available.

On September 28, 2017, DFA entered into an agreement (Planning Grant Agreement D17-02033) with NYWD to fund a planning project to design upgrades for the Forbestown Pipeline (Project). The upgrades would replace the open ditch with a pipeline to convey Lost Creek and South Feather River waters 10 miles to the NYWD treatment plant in Brownsville, CA. The Planning Grant was intended to cover planning tasks including: Design Basis Memorandum, Pre-Design Geotechnical &

Surveying Report, Updated Engineering Report, California Environmental Quality Act and National Environmental Policy Act, Final Plans and Specifications, and Project Management. The completion date for the Project was June 2019.

The Complaints

In April 2019, DFA received several emails and phone calls from two concerned citizens and NYWD customers (complainants). The complainants alleged that the NYWD General Manager, Mr. Jeff Maupin, applied for Prop 1 grant money under false pretenses, including that he omitted relevant information and submitted false or inaccurate information in order to obtain grant funding. The Office of Enforcement's Fraud Waste, and Abuse (Fraud) Prevention Unit received the first email complaint on May 13, 2019 and includes it in this report as Attachment 1. A second email complaint was received from the same complainants on May 15, 2019 and it is included in this report as Attachment 2.

Allegations

The two complaints alleged that the NYWD General Manager intentionally submitted misleading statements in a grant application submitted to the State Water Board, specifically:

1. The relationship between NYWD and South Feather Water and Power Agency (SFWPA) was omitted in the application package and should have been included.
2. The statements describing aluminum in the raw ditch water as a source of contamination were false and manufactured by NYWD and their consultant Northstar Engineering, in order to create a sense of urgency for the pipeline grant approval.
3. The beneficiaries of the piping project would be irrigation customers and not drinking water users as misleadingly emphasized by the application documents, making the project ineligible for Prop 1 grant funding.

The Fraud Prevention Unit investigation consisted of a review of the application documents, related documents and materials provided by the complainants, DFA grant files for NYWD, public websites and blogs related to NYWD and their consultants, as well as interviews with the complainants, and a site visit to the NYWD treatment plant and office in Brownsville. The interviews and site visit took place on July 11, 2019 to collect information and to verify that the complainants' allegations against the NYWD General Manager had been accurately understood by the Fraud Prevention Unit. Both complainants expressed their confidence to the Fraud Prevention Unit investigators that their complaints had been received and understood.

NYWD Planning Grant Agreement (D17-02033)

The NYWD is a local, elected government which provides drinking water to the towns of Forbestown, Challenge-Brownsville, and Rackerby in northern Yuba County. According to the grant application, NYWD serves 3,105 domestic supply customers totaling 784 connections. The NYWD is considered a disadvantaged community based on the eligibility assessment review completed by DFA as part of the evaluation of the application. The NYWD applied for the grant in March of 2015, and the grant was awarded in September 2017.

South Feather Water & Power Authority

The South Feather Water & Power Authority (SFWPA) is the largest customer of the NYWD, using their purchased allotment primarily for power generation and irrigation customers. There is a formal 2005 contractual agreement between SFPWA and NYWD. This Contract includes a Quit Claim Deed agreement between NYWD and SFWPA (Section VI) in which SFWPA abdicates all responsibilities for maintenance and operation of the water conveyance system, including ditches, diversions, conduits, and the treatment facility, to the NYWD as of January 1, 2011. The executed Quit Claim dated January 1, 2011, was included as part of the March 2015 application and is included in this report as Attachment 3.

North Yuba Water Alliance

The North Yuba Water Alliance is a grassroots organization of community members in the NYWD region. Membership is reported to be over 500 people. The two email complaints (Attachments 1 and 2) include a footer identifying the North Yuba Water Alliance as the email sender/creator and the sender's email address is listed as info@northyubawateralliance.org.

Northstar Engineering

Northstar Engineering (Northstar) is the contractor hired by NYWD to perform the planning tasks funded by the Prop 1 grant. Northstar prepared much of the Prop 1 grant application, supporting scope documents and cost estimate. Northstar's Secretary of State business license is listed under M. A. P. Associates, California Secretary of State file number 1590052. Northstar is based in Chico, California, and has a 35-year history of doing civil engineering projects including with NYWD.

Forsgren Associates, Inc.

Forsgren Associates, Inc. is another contractor to NYWD and two Forsgren Associates, Inc. reports are included in the Prop 1 grant application for the Forbestown Pipeline. Forsgren Associates, Inc., is based in Salt Lake City, Utah, and has been a registered foreign corporation in California since

1999 under Secretary of State file Number C2170136. The lead authors and senior reviewer of the September 2015 Forsgren Aluminum Feasibility Study Report included with the NYWD Prop 1 Grant application are also registered civil engineers in the State of California.

Investigation Results

Allegation 1: The relationship between NYWD and SFWPA was omitted in the application package and should have been included.

The NYWD's application package was signed by Mr. Maupin on March 4, 2015 and submitted to the State Water Board. On Page 2 of the 5-page application form, the application asks "Please list other Federal and State agencies and local governments that have been involved in this project...(and) all other agencies that have an interest in this project..." The NYWD and Mr. Maupin responded "None" to both queries on the application.

The complainants were aware of these application entries and believed the NYWD was intentionally omitting an existing relationship with SFWPA. The complainants provided a copy to the DFA in April of 2019 of the 2005 contractual agreement between NYWD and SFWPA as documentation that the Grant applicant should have listed a local government that was involved in the project. DFA received Part VI, a formal Quit Claim agreement between NYWD and SFWPA, as part of the application package in March 2015. The 2005 contract required the Quit Claim to be executed in January of 2011. The 2011 Quit Claim is included in this report as Attachment 3. This Quit Claim gave complete authority over fiduciary and engineering obligations regarding the Forbestown conveyance ditch to the NYWD, and therefore no requirement to discuss SFWPA in the grant application exists. The Quit Claim agreement makes the relationship between NYWD and the SFWPA clear; NYWD accepted sole responsibility for maintenance of the Forbestown conveyance ditch, and the SFWPA formally turned over any financial interest and obligation in ditch projects to the NYWD. NYWD had no obligation to disclose a relationship with SFWPA because within the grant application process for a construction project, there was no material relationship with SFWPA for the purpose of this investigation.

Allegation 2. The discussion of aluminum in the raw ditch water as a contaminant was falsified in order to create a false sense of urgency for the pipeline's approval and construction.

Prop 1, Chapter 5, Section 79721 makes it clear that proposed projects applying for funding will be given priority if water quality can be improved and contamination reduced. The NYWD application package includes a Scope of Work Statement prepared by Northstar (Attachment 4). Task 3 of that Scope of Work Statement includes reviewing alternatives to mitigate water quality impacts from aluminum accruing into the ditch water as it is conveyed to the NYWD treatment plant.

In separate interviews with the complainants, both stated there was no evidence of aluminum in the ditch water being a contaminant. The complainants obtained data from SFWPA which demonstrated to their satisfaction that aluminum in the ditch water did not exceed the Maximum Contaminant Level (MCL) of 200 micrograms per liter (ug/L). The SFWPA aluminum in raw water data was provided to the State Water Board by the complainants and is included as Attachment 5.

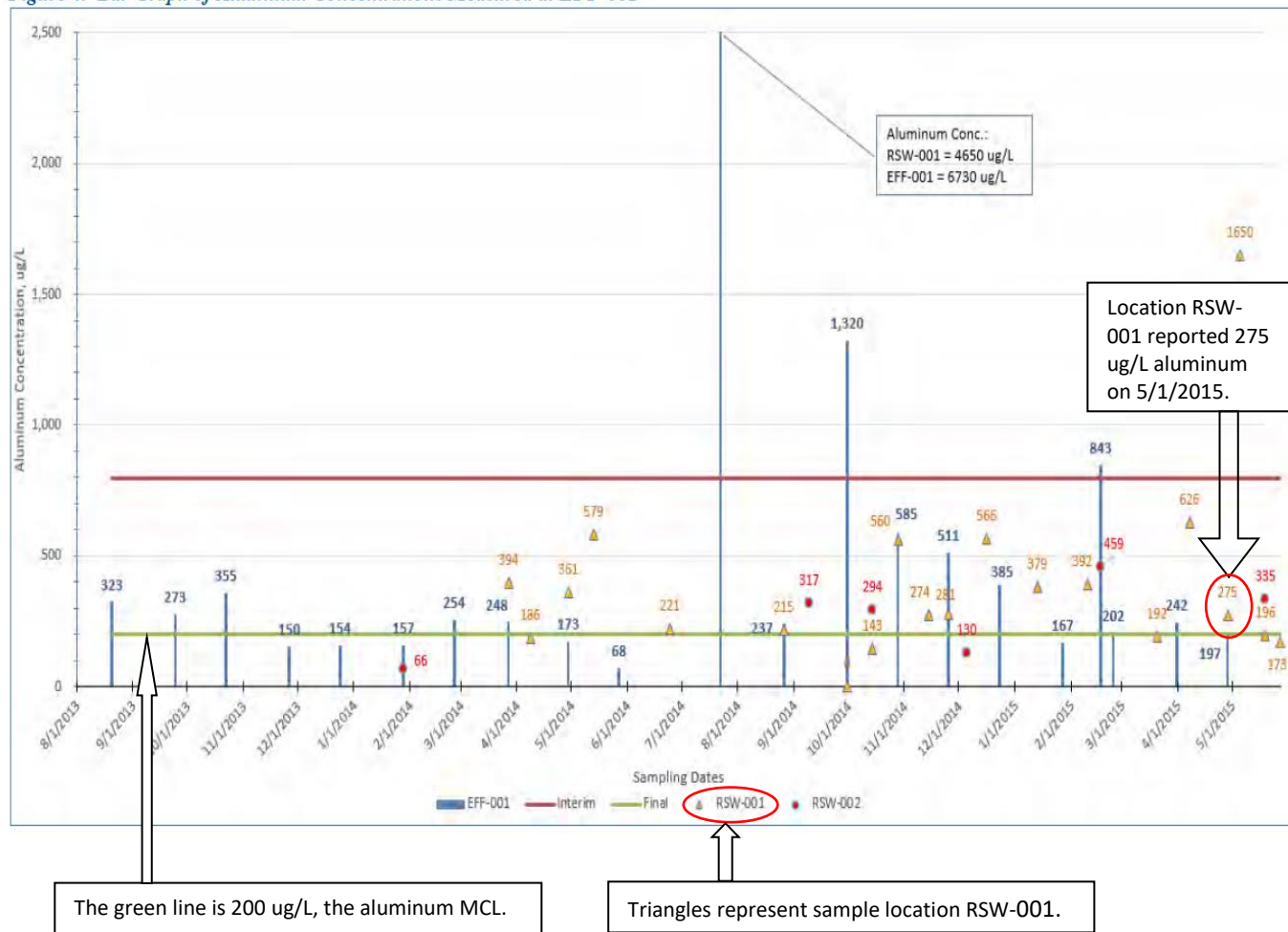
Aluminum in the Forbestown ditch water became an issue in 2014 when sampling at the NYWD Treatment Plant for National Pollutant Discharge Elimination System (NPDES) discharge permit compliance observed aluminum above the MCL in the discharge water being released from the treatment plant. This led to a study produced for the NYWD Board by Forsgren Associates, Inc., titled Aluminum Compliance Feasibility Study, July 22, 2015 (Aluminum Compliance Study Cover Page through page 11, Attachment 6). The Aluminum Compliance Study identified the raw ditch water as a potential source of the elevated aluminum being found in the treated water.

During the interviews with the complainants, both indicated that the SFWPA raw water data (Attachment 5) and the Aluminum Compliance Study (Table 5, page 10, Attachment 6) demonstrated aluminum was not a contaminant. Table 5 reports raw water samples taken at sampling locations along the ditch. The samples listed in Table 5 taken at the beginning of the Forbestown ditch, location SF-14, and the endpoint of the 10-mile ditch where the raw water enters the NYWD treatment plant, location RSW-001, show the results are below the MCL for aluminum. Table 5 samples collected May 27, 2015 do show an increase in aluminum concentrations in the ditch water as it flows the 10 miles from the initial diversion location to the NYWD treatment plant.

The Aluminum Compliance Study, Figure 4 (page 9, Attachment 6) represents aluminum in ditch water results from August 2013 to June 2015 and at four different locations around the NYWD treatment plant. The aluminum data for location SF-14 (the beginning of the ditch) and for 5 of 21 samples at location RWS-001 (the approximate delivery point to the NYWD treatment plant) report concentrations below the MCL of 200 ug/L. However, the same Figure 4 includes sample results for

16 of 21 aluminum concentrations in ditch water at location RWS-001 that are above the aluminum MCL. Figure 4 is included below. The table below Figure 4 summarizes the data points in Figure 4. Laboratory reports for some of the RSW-001 samples were obtained from the complainants and the lab reports appeared reliable. The Fraud Prevention Unit concludes that aluminum is leaching from weathered soil into the raw ditch water, and it has on at least 16 occasions been sampled at location RWS-001 and reported above the aluminum MCL.

Figure 4. Bar Graph of Aluminum Concentrations Measured at EFF-001



The Fraud Prevention Unit investigators visited the NYWD treatment plant July 11, 2019 and spoke with the licensed operator, Mr. Jeremy Dimmett. Mr. Dimmett showed the investigators where he believed the sampling point RSW-001 to be located (Photo 0621). A diagram from the Aluminum Feasibility Study shows sampling points around the NYWD treatment plant (Figure 2) is not to scale but indicates the sampling point is the influent PVC pipe in the storage reservoir (Photo 0624). Mr. Dimmett believed the sampling point was at the ditch diversion. Figure 3 in the Aluminum Feasibility Study (Attachment 6) shows RSW-001 and the text describes RSW-001 as the location where the ditch water enters the treatment plant and is stored in the raw water on-site reservoir.

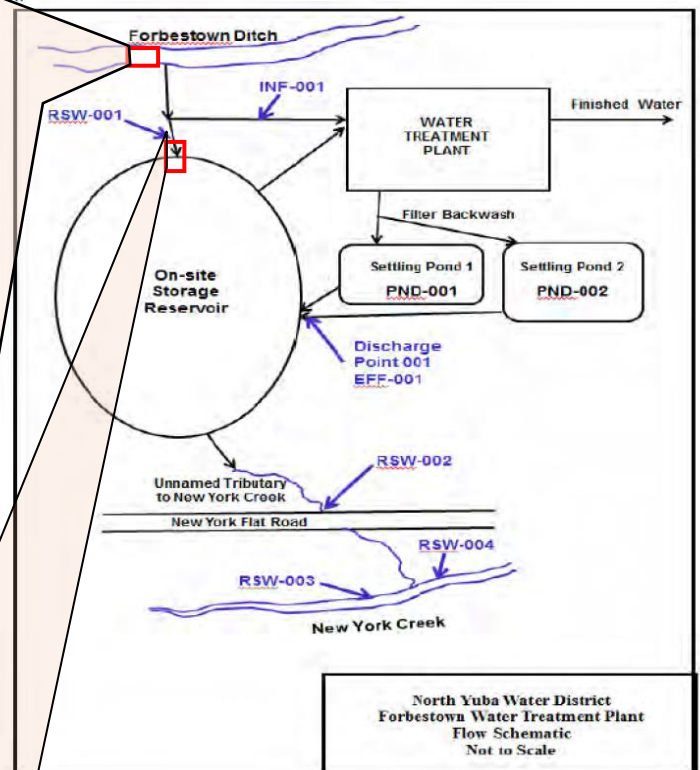


Photo 0621: Forbestown Ditch intake facing north; possible RSW-001 location. Photograph taken by State Water Board staff Jacques Lord, on July 11, 2019.



Photo 0624: Water from ditch emptying into NYWD reservoir; possible RSW-001 location. Photograph taken by State Water Board staff Jacques Lord, on July 11, 2019.

Figure 2. FWTP Flow Schematic



The DFA Project Manager for the grant application evaluation stated that the DDW and DFA did not give much emphasis to the issue of aluminum in the water when ranking the application. The DFA determined that the risks presented by contaminants in the ditch were negligible and the elimination of evaporation and infiltration losses were the primary benefits for funding the grant.

This investigation concludes that aluminum concentration does increase in the ditch water and it has been reported at concentrations over the MCL at location RSW-001 on numerous occasions.

Allegation 3. The beneficiaries of the piping project would be irrigation customers and not drinking water users as misleadingly emphasized by the application documents, making the project ineligible for Prop 1 grant funding.

In separate interviews with the complainants, both stated there was no need to provide State funds to augment drinking water supply or distribution. The complainants argued that NYWD drinking water customers haven't gone without water in recent memory. The pipeline project would eliminate evaporative and infiltration waste and increase the water available for irrigation customers. The complainants argued that this was not the intent of the Prop 1 drinking water grant program.

According to California Water Code section 79743 (Project Eligibility) paragraph (b), a proposed Prop 1 drinking water grant project is eligible if it provides water-use efficiency and water conservation. There is no explicit restriction in Prop 1 or the grant application guidance that the grant be applied to drinking water improvements exclusively, or that irrigation benefits are excluded from drinking water grant benefits. According to the DDW, water utilities that serve both drinking and irrigation needs from one system are not uncommon in rural California, and the State wants to provide Prop 1 assistance to all deserving rural water utility districts, so eligibility is broadly defined. Every grant applicant is required to identify the number of drinking water connections and population served by a water district applying for a Prop 1 grant as a part of the application evaluation criteria. NYWD identified in the grant application that they had a drinking water treatment plant with 784 connections to a population of 3,501 consumers. The State Water Board evaluated the application on its specific merits with respect to drinking water and not irrigation water usage. In other words, the State Water Board was aware of the irrigation benefits provided by the proposed pipeline project, but those irrigation benefits were not a consideration in the State Water Board ranking evaluation of the grant application compared to other applicants.

Part of the eligibility discussion focused on the estimates of water loss in the ditch due to evaporation and infiltration. The complainants felt this was misleading since the NYWD always had plenty of drinking water. The Fraud Prevention Unit observed different percentage estimates of loss

in the supporting documents included with the application package. These estimates ranged from 35-40% in a 2009 report by Kennedy/Jenks to 50-70% in the Forsgren 2015 Aluminum Feasibility Study, which was a concern since no calculations or measurements were offered to support either claim. The Fraud Prevention Unit investigators discussed this point with the NYWD Treatment Plant operator, Jeremy Dimmett. Mr. Dimmett provided a written statement that he knows the cubic feet per second (cfs) flow at the SF-14 diversion point and measures the cfs at the plant's ditch diversion intake point and calculates a volume of water loss which varies from 35 to 68% due to seasonal variables. Mr. Dimmett stated the average loss to infiltration and evaporation is approximately 50% (Attachment 7).

Conclusions

The investigation did not find credible evidence of an intentional omission of facts, misrepresentation, or fabrication of data that would alter the eligibility of the grant application. The Quit Claim relationship between NYWD and SFWPA was provided in the application. Reliable aluminum data showing exceedances of the MCL in the ditch water was provided by the NYWD in their application, and that data was not treated by the DFA as significant in ranking the application. The DFA acknowledged the benefit to irrigation water customers as well as to domestic users in their evaluation of the application prepared by Northstar and Mr. Maupin on behalf of the NYWD. The grant application was reviewed, in accordance with the DFA's standard practice, in a 19-step process documented in the application assessment package. The application package provided by NYWD was compliant with State Water Board requirements, and as a result the Forbestown Ditch Planning Project was determined to be eligible for funding.

Attachment 1
Complainant email from May 13, 2019

From: North Yuba Water Alliance <info@northyubawateralliance.org>
Subject: We would like to schedule a meeting to discuss an important matter
Date: May 13, 2019 at 8:06:53 AM PDT
To: secretary@resources.ca.gov

Good Morning Mr. Crowfoot,

Below is an announcement that our organization is preparing to release on social media and with local/State press outlets.

It summarizes our take on an alarming situation in which one of our local water districts, North Yuba Water District, engaged in fraudulent activity that allowed them to secure a grant via the Safe Drinking Water act.

We presented our data and information to several SWRCB officials (Dat Tran, Noel Gordon and Fabian Ramos) who are directly involved in the grant award and management. We asked for a public investigation into this matter.

Unfortunately, it fell on deaf ears and it's our belief that due to SWRCB's negligence and inefficiencies, a potential cover-up is now in play. We don't believe that the SWRCB had any direct involvement in the fraudulent activity, but we now question the lack of concern and transparency displayed by the SWRCB.

We'd appreciate meeting with you to discuss the situation more throughly in hopes that you will address the situation with a higher level of seriousness and accountability. Taxpayer's deserve valid answers on this matter, not lip service and avoidance.

You can contact me, one of the Water Alliances' core members, XXXX, to discuss and/or arrange a meeting. I can be reached at this email or at XXX.XXX.XXXX.

Thank you for your attention to this serious matter.

Respectfully,

XXXX

FOR IMMEDIATE RELEASE

NYWD MANAGER OMITTED INFORMATION ON GRANT APPLICATION MISLEADING STATE OFFICIALS, DEFRAUDING TAXPAYERS -

STATE WATER RESOURCES CONTROL BOARD NOW COMPLICIT DUE TO NEGLIGENCE AND POTENTIAL COVER-UP OF WRONGFULLY AWARDED GRANT

Brownsville, May 2019

Thanks to a whistle-blower, it's been discovered that North Yuba Water District's (NYWD) manager, Jeff Maupin, omitted critical information and misrepresented data on a 2017 grant application sent to the California State Water Resources Control Board (SWRCB). The impact of this situation is that CA taxpayers have already been defrauded \$500,000 and an application for a second grant would result in further defrauding taxpayers an additional \$5M.

The current \$500,000 planning grant funds were used to develop engineering plans for completely piping the Forbestown Ditch. The planning grant has the potential of phasing into a \$5M construction grant.

One of the most critical omissions relates to NYWD's contractual partner with the Forbestown Ditch, South Feather Water & Power Agency (SFWPA), who is mysteriously not mentioned in any of the application documentation. The grants are a result of Prop 1/Safe Drinking Water funds and are only to be used for domestic water purposes. Even though NYWD supplies domestic customers, both NYWD and SFWPA convey irrigation water in the Forbestown Ditch. It's calculated that the majority of water conveyed in the Forbestown Ditch is actually used for irrigation purposes, not domestic.

Any planning or piping of the ditch would benefit each agency's irrigation systems, a clear strike against awarding the Safe Drinking Water grant.

Additionally, NYWD-supplied data about contaminants in the Forbestown Ditch does not meet grant award technical parameters. During initial discussions, SWRCB officials agreed with the public's assessment about the misleading data. However, since it was the responsibility of the State Water Resources Control Board to have more thoroughly reviewed the data, and had they done so, they probably would not have awarded NYWD the grant. Given that the grant has already been awarded, SWRCB is now back-peddling and claiming they haven't done anything wrong and the grant was awarded correctly.

In a call with SWRCB last Friday, an official skirted around discussing the factual information supplied by the public and sounded confused and uninformed about the situation. Ultimately he stated that he, "could not talk about any investigations," leaving it unclear if the SWRCB is undertaking a formal, thorough investigation or not.

The team of community members committed to righting the wrongdoings of NYWD and exposing SWRCB's negligence and potential cover-up, is preparing to meet with senior State officials and to secure legal means to ensure CA taxpayer's money is used according to the law.

Residents, taxpayers and customers of NYWD want the piping of the Forbestown Ditch, but not through a scheme of defrauding CA taxpayers.

—
###



Your only reliable source for Foothill water information and news
info@northyubawateralliance.org

Attachment 2
Complainant email from May 15, 2019

From: North Yuba Water Alliance <info@northyubawateralliance.org>
Sent: Wednesday, May 15, 2019 8:59 AM
To: info@northyubawateralliance.org
Subject: SWRCB DIRTIES THE WATER

FOR IMMEDIATE RELEASE

Brownsville, CA 2019

SWRCB AWARDS TAXPAYER'S "SAFE DRINKING WATER" GRANT EARMARKED FOR DOMESTIC SYSTEMS TO "DIRTY WATER" IRRIGATION AGENCIES

The recent reactions from officials at the California State Water Resources Control Board (SWRCB) to validate their decision to grant North Yuba Water District (NYWD) a \$500,000 planning grant to develop engineering plans to pipe the Forbestown Ditch, has unearthed new questions and concerns.

SWRCB's negligence, and potential cover-up, show that taxpayer's money that's supposed to be earmarked for improving and protecting domestic water systems is actually being fraudulently and inappropriately used for funding irrigation systems.

For example, NYWD shares the use of the Forbestown Ditch with South Feather Water & Power Agency (SFWPA). All of the water (11 cfs) used by SFWPA is applied to irrigation purposes. NYWD must cover the losses to deliver the 11 cfs of water over the course of its ten-mile journey to SFWPA. NYWD also uses water from the Forbestown Ditch for their own irrigation customers. A minority amount of the water is actually used for NYWD's domestic purposes, especially since 400AF of the annual 800AF of water needed to run NYWD's domestic plant comes from Orleeva Creek, a tributary not part of the Forbestown Ditch. Yet, even with this information in hand, SWRCB awarded Safe Drinking Water funds to NYWD that essentially will help sustain and grow its irrigation services.

When SWRCB awarded the \$500,000 grant, and having not done the work to verify the full extent of the water used in the Forbestown Ditch, they were actually using Safe Drinking Water funds for improving two irrigation systems. Even after being shown data and information that proved that the grant money was fraudulently obtained, SWRCB, defended its actions. When asked if SWRCB now grants Prop 1/Safe Dinking (sic) Water funds for irrigation systems, SWRCB officials acted confused and wouldn't answer the question directly.

The Alliance is demanding a formal, transparent investigation into the \$500,000 grant awarded to NYWD. The Alliance is now considering launching an investigation into SWRCB, its negligence, obfuscation and potential cover-up. The public needs to know if this problem is pervasive and if other water districts have taken advantage of SWRCB's blind spot.

—
###



info@northyubawateralliance.org

Attachment 3
2011 executed Quit Claim between NYWD and SFWPA
(From the Grant Application)

Recording Requested By
And When Recorded Return to:

NORTH YUBA WATER DISTRICT
P.O. Box 299
Brownsville, California 95919

QUIT CLAIM DEED

SOUTH FEATHER WATER AND POWER AGENCY, hereafter called "SFWPA", a public agency, and an irrigation district formed in accordance with the provisions of Division 11 of the Water Code of the State of California, hereby quit claims, without general or specific warranty, to North Yuba Water District, a public agency formed and existing in accordance with the provisions of Division 12 of the Water Code, hereafter called "NYWD," all of SFWPA's right, title and interest in and to that certain water conveyance facility known as the Upper Forbestown Ditch, within the counties of Butte and Yuba, extending from its point of beginning at, but not including, SFWPA's outlet valve known as SF14 located at the top of Woodleaf Powerhouse Penstock, and continuing 10.6 miles, more or less, to its termination point at, and including, SFWPA's flow-gauging station known as WD-6, immediately downstream of the diversion from said Upper Forbestown Ditch to NYWD's water treatment plant, generally within the community of Forbestown, California, together with the Oroleve Creek Ditch that transports water diverted from Oroleve Creek to the Upper Forbestown Ditch.

SFWPA further quit claims to NYWD, without general or specific warranty, its claimed pre-1914 water rights in Oroleve Creek and in any other natural streams which are currently diverted by SFWPA into the Upper Forbestown Ditch..

SFWPA further quit claims, without general or specific warranty, all of its right, title and interest in and to those roads accessing said Upper Forbestown Ditch, that have been regularly traversed by SFWPA and regularly used for purposes of access,

operation and maintenance of the Upper Forbestown Ditch, excluding the Woodleaf Tunnel Road which is used by SFWPA for purposes of access, operation and maintenance of its project facilities other than the Upper Forbestown Ditch.

NYWD agrees that, except as stated herein, this quit claim deed will not be deemed to constitute a grant or dedication to NYWD of any water or land to which SFWPA has vested rights, or to vest any right or easement in NYWD whatsoever other than as specifically herein provided, or a warranty of the title or fitness of the Upper Forbestown Ditch or the pre 1914 water rights conveyed herein.

This quit claim also includes the right, title and interest in and to any gates, gauges, structures, and other facilities appurtenant to and part of said Upper Forbestown Ditch and Oroleve Creek Ditch.

NYWD has inspected and accepts the Upper Forbestown Ditch and the Oroleve Creek Ditch, together with said gates, gauges, structures and appurtenant facilities, "as is" and shall, from and after January 1, 2011, be solely and wholly responsible for the use, control, operation, and maintenance of them.

The Upper Forbestown Ditch and the Oroleve Creek Ditch are further generally described in Exhibit "A" attached hereto, and depicted on Exhibit "B," attached hereto.

The provisions hereof shall inure to the benefit of and bind the successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the GRANTORS have executed this instrument this 24th day of May, 2011.

SOUTH FEATHER WATER AND POWER AGENCY

James L. Edwards

James L. Edwards, President, Board of Directors

Attest:

Michael C. Glaze

Michael C. Glaze, Secretary, Board of Directors

4

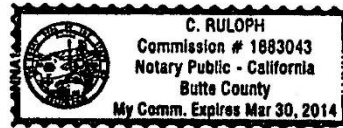
STATE OF CALIFORNIA }
COUNTY OF BUTTE } ss.

On this 24th day of May in the year 2011 before me, C. Ruloph, a Notary Public, personally appeared James L. Edwards, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/~~she~~ executed the same in his/her authorized capacity, and that by his/~~her~~ signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under penalty of perjury under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

C. Ruloph
Notary Public, State of California



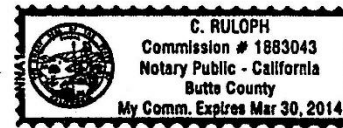
STATE OF CALIFORNIA }
COUNTY OF BUTTE } ss.

On this 24th day of May in the year 2011 before me, C. Ruloph, a Notary Public, personally appeared Michael C. Glaze, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/~~she~~ executed the same in his/her authorized capacity, and that by his/~~her~~ signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under penalty of perjury under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

C. Ruloph
Notary Public, State of California



Attachment 4
Scope of Work Statement Prepared by Northstar
(From the Grant Application)



EXHIBIT "A"
SCOPE OF SERVICES (Rev. 4/19/2017)

Consultant agrees to perform the following services:

Task No.	Scope of the Project
<p>Task 1</p>	<p>Project Evaluation & Pre-Design Engineering</p> <ul style="list-style-type: none"> ○ NorthStar will review the Technical Memorandum/Preliminary Engineering Evaluations prepared by Forsgen Associates. ○ NorthStar will review NYWD Forbestown Ditch Improvements Feasibility Study prepared by Kennedy/Jenks Consultants. ○ NorthStar will conduct a field review/site visit. ○ In consultation and coordination with the NYWD General Manager, staff and sub consultants, NorthStar will develop a Design Basis Memorandum identifying existing problems. The problems will then be ranked relative to their highest probable cost benefit ratios. <p>Deliverable: Design Basis Memorandum</p>
<p>Task 2</p>	<p>Pre-Design Geotechnical & Surveying</p> <p><i>Subtask 2a: Geotechnical Evaluation</i></p> <ul style="list-style-type: none"> ○ Perform pre-design preliminary geotechnical explorations at 10-12 key locations along the Forbestown Ditch to provide background geotechnical data and corresponding report that can be used to verify pre-design design approaches to piping the ditch. <p><i>Subtask 2b: Topographic Surveying</i></p> <ul style="list-style-type: none"> ○ NorthStar's Surveying Department will perform pre-design level topographical and mapping services at 10-12 key locations along the Forbestown Ditch to provide background survey and mapping data that can be used to verify pre-design design approaches to piping the ditch. <p>Assumptions for Task 2a and b:</p> <ul style="list-style-type: none"> ○ Detailed geotechnical analysis and topographic surveys are <u>not</u> necessary for the entire length of Forbestown Ditch or at every pipe access catch basin location which are expected to be placed every 1,000 feet. ○ Key locations as noted in 2a are expected to include: sites of notable geotechnical instability and proposed flume or structure construction requiring foundation design. ○ The majority of the pipeline plans will reference typical details and specifications only. However, key locations as noted in 2b, specific areas will require plans incorporating detailed engineering design. These areas are expected to include; flume construction sites and transition structures between the proposed pipe and existing flumes, siphons, structural steel plate arch pipe sections and culverts.



<p>Task 2 (continued)</p>	<ul style="list-style-type: none"> ○ A section of the Forbestown Ditch extending from a point approximately 2.2 miles downstream of the Woodleaf siphon to a point approximately 0.4 miles upstream of the Costa Creek siphon is locally known as the "Falls" or "Cascade" section. Over the approximately 0.3 miles of this section the ditch experiences a change in elevation of approximately 400 vertical feet. This "Falls" or "Cascade" portion of the existing Forbestown ditch will remain unimproved and will only require detailed engineering design associated with terminal structures at the upper and lower ends. <p>Deliverable: Pre-Design Geotechnical & Surveying Report.</p>
<p>Task 3</p>	<p>Preliminary Engineering Update & Engineering Report</p> <ul style="list-style-type: none"> ○ Review feasible alternatives for mitigating leakage/evaporation losses and water quality impacts accruing from aluminum along the alignment of the Forbestown Ditch. ○ Review the best option or combination of options to address the ranked problems identified in Task 1, Design Basis Memorandum. ○ Review identified pipe material and placement alternatives for the design and construction of transition structures between the proposed pipe and existing flumes, siphons, structural steel plate arch pipe sections, culverts and the cascade section terminal structures. ○ Provide engineering review of pre-design geotechnical & surveying (Task 2) efforts to determine if those data impact Task 1, findings of the Design Basis Memorandum. ○ Prepare and submit an updated engineering report to include summary of alternatives evaluated, selection of preferred alternative and proposed construction project, basis of design, conceptual design, and opinion of probable construction cost for the selected construction project. <p>Assumption:</p> <ul style="list-style-type: none"> ○ All existing structures including flumes, siphons or structural steel plate arch culverts are adequate and only minor conform modifications will be required. ○ Existing ditch will be enclosed with pipe of various materials, installation methods and alignments. No structural design of flumes, siphons or structural steel plate arch culverts will be required. <p>Deliverable: Updated Engineering Report with summary of evaluated alternatives and selected construction project.</p>
<p>Task 4</p>	<p>CEQA/NEPA</p> <p><i>Subtask 4a: CEQA Documentation – Notice of Exemption</i></p> <ul style="list-style-type: none"> ○ Review project for possible CEQA Exemptions ○ Prepare Notice of Exemption <p><i>Subtask 4b: CEQA/NEPA Contingency</i></p> <p><i>4b.1-CEQA/NEPA Documentation</i></p> <ul style="list-style-type: none"> ○ Prepare required environmental documents; assumes only biological (4b.2) and cultural (4b.3) surveys could be needed to identify potential mitigation measure requirements, if any. ○ Prepare CEQA Documents for selected construction project to ensure compliance with CEQA and other State and Federal environmental requirements



<p>Task 4 (continued)</p>	<ul style="list-style-type: none"> ○ If deemed necessary, CEQA documentation will be revised and converted into the applicable NEPA format, which depends on funding source/lead agency requirements. ○ Additional environmental topics, as applicable and per federal requirements, will be added to NEPA documentation. <p><i>Subtask 4b.2: Biological Resources Assessment/Biological Assessment</i></p> <ul style="list-style-type: none"> ○ NorthStar will conduct biological field surveys and habitat assessments (as deemed necessary) for the project alignment. The resulting documentation will be a Biological Resources Assessment, to be incorporated into the IS/MND and included as an appendix. In addition, if there are any identified federally listed threatened or endangered species (including plant or wildlife species) that are located within the biological study area, NorthStar will prepare a Biological Assessment to be used for Endangered Species Act, Section 7 consultation, if deemed necessary. <p><i>Subtask 4b.3: Archaeological Resources Assessment</i></p> <ul style="list-style-type: none"> ○ NorthStar sub consultants will conduct an Archaeological Resources Assessment for the Forbestown Ditch. The Report will be prepared in compliance with both CEQA and Section 106 of National Historic Preservation Act (in the event that Federal funding is obtained for the project). Specifically, the Archaeological Resources Assessment will include: request Records Searches from and pay fees to the North Central Information Center and the Northeast Information Center; consultation with the Native American Heritage Commission (NAHC) for Sacred Lands; consultation with parties listed by the NAHC; pedestrian field survey, complete coverage, intensive-level; prepare site forms for newly identified sites. <p>Assumptions:</p> <ul style="list-style-type: none"> ○ Assumes that if the project does not fall under a CEQA Categorical Exemption that the preparation of an Initial Study/Mitigated Negative Declaration (IS/MND) would be required and that the project would not result in the need for an Environmental Impact Report (EIR). ○ NorthStar will coordinate with the North Yuba Water District to determine possible subsequent funding sources and will determine the appropriate NEPA documentation that may be necessary. Based on the type of funding, i.e., SRF Loan, NorthStar will prepare the appropriate NEPA documentation. ○ NorthStar assumes that for the purposes of NEPA, if applicable, that the project would result in the preparation of either a CEQA Plus document (for SRWQCB SRF Loan funds), or an Environmental Assessment resulting in a Finding of No Significant Impact (FONSI). <p>Deliverable: CEQA/NEPA required documents.</p>
<p>Task 5</p>	<p>Plans, Specifications and Estimates (PS&E)</p> <ul style="list-style-type: none"> ○ Prepare 95% Plans and Specifications for selected construction project ○ Cost estimate ○ Final design and bid package, ready to advertise for construction contract <p>Deliverable: Draft (95%) and Final Plans, Specifications, and Cost Estimate.</p>



Civil Engineering
 Architecture
 Environmental
 Planning
 Surveying
 Water Resources

Task 6	Project Management <ul style="list-style-type: none"> ○ Organize and lead project kickoff meeting to collect data and relevant guidelines. ○ Monitor and track scope, budget and schedule. ○ Coordinate sub-consultants. ○ Provide quality assistance/ quality control. ○ Coordinate with SWRCB, DWR, etc. to work towards securing planning funding for this project. ○ Project management and coordination including maintaining project schedule and budget, preparation of invoices and reports, responses to comments by North Yuba Water District, SWRCB on PS&E drawings, etc.
---------------	--

Attachment 5
SFWPA Aluminum in Ditch Water at Location SF-14
(Provided to the State Water Board by the Complainants)

SOUTH FEATHER WATER & POWER AGENCY

RATH MOSELEY, GENERAL MANAGER

2310 ORO-QUINCY HIGHWAY
OROVILLE, CALIFORNIA 95966
530-533-4578, EXT. 109
RMOSELEY@SOUTHFEATHER.COM



June 13, 2019

Re: Aluminum Testing Forbestown Ditch

Dear :

This letter is to acknowledge you're e-mail request for documents dated June 12, 2019 ("Request") and received on that same date. The Request is for all reports and/or data regarding testing for aluminum in the Forbestown Ditch conducted by SFWPA in 2017-2019.

Pursuant to Government Code section 6253, subdivision (c), this letter serves to advise you that it appears that the Request seeks copies of disclosable public records in the possession of the Agency, as provided by the Public Records Act.

The Agency will identify and provide you with the requested documents, and will do so in the format in which the information is stored (Gov. Code § 6253.9).

Attached to this letter are the requested documents scanned from the originals.

Sincerely,
South Feather Water and Power Agency

A handwritten signature in black ink, appearing to read "Rath Moseley".

Rath Moseley, General Manager



www.basiclab.com

2218 Railroad Avenue
Redding, California 96001

voice 530.243.7234
fax 530.243.7494

3860 Morrow Lane, Suite F
Chico, California 95928

voice 530.894.8966
fax 530.894.5143

Report To: SOUTH FEATHER WATER & POWER
2310 ORO QUINCY HIGHWAY
OROVILLE, CA 95966
Attention: JOHN SHIPMAN
Project: GENERAL TESTING
Description: SF-14 DITCH (Grab)

Lab ID: 19E0620-01

Lab No: 19E0620
Reported: 05/29/19
Phone: 533-4578
P.O. # 2019-20391

Sampled: 05/09/19 12:00

Matrix: Water

Received Temp (C): 14.0

Received: 05/09/19 16:08

Metals - Acid Soluble

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
Aluminum	ug/l	36.6		1.6	5.0	EPA 200.8	05/23/19	05/23/19	B9E1429

Quality Control Data

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

Metals - Acid Soluble

Batch B9E1429 - EPA 200 Series

Blank										
Aluminum	ND	5.0	ug/l							
LCS										
Aluminum	1030	5.0	ug/l	1000		103	85-115			
Duplicate Source: 19E0729-02										
Aluminum	53.2	5.0	ug/l		52.7			1.08	20	
Matrix Spike Source: 19E0729-02										
Aluminum	1030	5.0	ug/l	1000	52.7	97.3	75-125			

Approved By
Basic Laboratory Inc
California ELAP Cert #1677 and #2718



www.basiclab.com

2218 Railroad Avenue voice 530.243.7234
Redding, California 96001 fax 530.243.7494

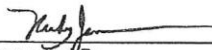
3860 Morrow Lane, Suite F voice 530.894.8966
Chico, California 95928 fax 530.894.5143

Report To: SOUTH FEATHER WATER & POWER
2310 ORO QUINCY HIGHWAY
OROVILLE, CA 95966
Attention: JOHN SHIPMAN
Project: GENERAL TESTING

Lab No: 19E0620
Reported: 05/29/19
Phone: 533-4578
P.O. # 2019-20391

Notes and Definitions

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the detection limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- < Less than reporting limit
- ≤ Less than or equal to reporting limit
- > Greater than reporting limit
- ≥ Greater than or equal to reporting limit
- MDL Method Detection Limit
- RL/ML Minimum Level of Quantitation
- MCL/AL Maximum Contaminant Level/Action Level
- mg/kg Results reported as wet weight
- TTLC Total Threshold Limit Concentration
- STLC Soluble Threshold Limit Concentration
- TCLP Toxicity Characteristic Leachate Procedure
- Note 1 Received Temperature - according to EPA guidelines, samples for most chemistry methods should be held at ≤6 degrees C after collection, including during transportation, unless the time from sampling to delivery is <2 hours. Regulating agencies may invalidate results if temperature requirements are not met.
- Note 2 According to 40 CFR Part 136 Table II, the following tests should be analyzed in the field within 15 minutes of sampling: pH, chlorine, dissolved oxygen, and sulfite.



Approved By
Basic Laboratory Inc
California ELAP Cert #1677 and #2718

ALUMINUM SAMPLES ug/l

	2014	2015	2016	2017
JAN	4.0	11.2	16.9	11.3
FEB	5.1	4.1	21.0	29.5
MAR	8.4	13.1	13.1	9.6
APR	14.2	6.6	12.3	14.2
MAY	11.6	4.3	7.5	15.3
JUN	5.4	**	9.6	16.6
JUL	6.3	**	7.3	20.8
AUG	3.7	5.4	10.3	26.7
SEP	4.6	3.3	5.7	13.7
OCT	7.6	5.3	7.8	8.4
NOV	19.7	2.5	13.9	6.0
DEC	8.6	2.5	10.0	

**Recycle testing was performed in 2015 to observe the effects on the process prior to project.
2017 results are higher due to Kelly power house valve issues.

Attachment 6
Front Cover to Page 11 from the
Forsgren 2015 Aluminum Feasibility Study
(green highlighting by the Complainant)

***North Yuba Water District
Water Treatment Plant Effluent -
Aluminum Compliance
Feasibility Study***



Prepared for

NORTH YUBA WATER DISTRICT
8691 La Porte Road,
Brownsville, CA 95919
(530) 675-2567

Prepared By

FORSGREN
Associates Inc.

July 22, 2015

NYWD Water Treatment Plan Effluent
Aluminum Compliance Feasibility Study

Introduction 1

Project Goals and Objectives1

Background.....1

 Water Supply and Needs1

 Forbestown Water Treatment Plant Facility Description2

 On-site Raw Water Storage Reservoir2

 Treatment Operations (Up-flow Clarifiers and Multimedia Filters)3

 Solids Dewatering Lagoons (Settling Ponds)3

Regulatory Requirements4

 NPDES Waste Discharge Requirements for the FWTP Effluent4

 Monitoring Plan6

 Recent Sampling Results6

Feasibility Study 10

Sources of Aluminum10

 Raw Water Source10

 Aluminum Based Coagulant Aid.....11

2014 Work Plan Alternatives11

Current Operation.....11

 Solids Production Evaluation (from Backwash Operation)13

 Backwash Waste Volume Evaluation14

Operational Near-Term Alternatives16

 Alternative 1 - Install Surface Boom at Discharge Pipe:.....16

 Alternative 2 - Install Decant Structure16

 Alternative 3 - Remove Solids More Frequently17

 Alternative 4 - Operate Backwash Ponds Simultaneously (operate ponds in parallel)17

 Alternative 5 - Dual Use of Backwash Settling Ponds (operate Ponds in series):.....19

Long-Term Modifications:.....19

 Alternative 6 - Process Modifications – Evaluate Alternative Primary Coagulant Chemicals20

 Alternative 7 - Removal of Backwash Effluent at EFF-00120

 Alternative 8 - Source Analysis21

 Alternative 9 - Convert Forbestown Ditch to Closed Pipeline System23

Cost and Benefit Analysis23

 Operational Near-Term Alternatives23

 Alternative 4 – Operate Backwash Ponds Simultaneously (Operate Ponds in Parallel)23

 Alternative 5 – Dual Use of Backwash Settling Ponds (Operate Ponds in Series)24

 Work Plan Long-Term Modifications25

 Alternative 8 – Source Analysis25

 Alternative 9 – Convert Forbestown Ditch to a Closed Pipeline System26

 Cost and Benefit Comparison27

Recommended Compliance Alternative27

NYWD Water Treatment Plan Effluent
Aluminum Compliance Feasibility Study

Near-Term Recommendation28
Long-Term Recommendation28

Appendix A – 2013 and 2014 Monitoring Results

Appendix B – FWTP Operational Data

Appendix C – Calculations and Cost Estimates

List of Tables

Table 1. Forbestown Ditch’s Raw Water Supply Allocation..... 2
Table 2. FWTP Major Wastewater Flow Summary 3
Table 3. FWTP Effluent’s Interim and Final Effluent Limitations for Aluminum..... 4
Table 4. District’s FWTP Effluent Method of Compliance Schedule for Aluminum 8
Table 5. Aluminum Concentrations from Raw Water Samples Collected along Forbestown Ditch..... 10
Table 6. FWTP Settling Ponds Design Criteria 13
Table 7. 2013 Operational Data and Estimated Total Solids Produced (based on dry solids basis)..... 13
Table 8. Estimated Pond Area Needed for Gravity Dewatering (based on 2013 Total Solids Produced).. 14
Table 9. 2013 FWTP Backwash Waste Volume (sent to settling ponds) 14
Table 10. FTWP Backwash Operation Data for July 2013 (Peak Month)..... 15
Table 11. Alternative 7 - Proposed Design Criteria 21
Table 12. Alternative 4 (Operate Ponds in Parallel) Estimated Capital and O&M Costs..... 24
Table 13. Alternative 5 (Operate Ponds in Series) Estimated Capital and O&M Costs 25
Table 14. Alternative 8 (Source Analysis) Estimated O&M Costs 26
Table 15. Alternative 9 (Convert the Forbestown Ditch to a Closed Pipeline) Estimated Capital Costs.. 26
Table 16. Cost and Benefit Comparison of the Recommended Alternatives..... 27

List of Figures

Figure 1. Forbestown Ditch Plan View from SF-14 Diversion through FWTP Diversion..... 2
Figure 2. FWTP Flow Schematic..... 5
Figure 3. FWTP Site Map with Monitoring Locations 7
Figure 4. Bar Graph of Aluminum Concentrations Measured at EFF-001 9
Figure 5. Locations of Aluminum Sampling Along Forbestown Ditch..... 10
Figure 6. FWTP Settling Ponds 1986 Design Drawings – Cross Sectional Views 12
Figure 7. Photo of FWTP Settling Pond No. 1 Overflow Pipe 15
Figure 8. Photo of FWTP Settling Pond No. 2 Overflow Pipe 16
Figure 9. Proposed Interconnection of Overflow Pipes between Both Settling Ponds..... 18
Figure 10. Alternative 7 - Proposed Process Schematic. 21
Figure 11. Proposed Raw Water Sampling Locations along Forbestown Ditch..... 22

INTRODUCTION

Project Goals and Objectives

This feasibility study will consider the following potential modifications:

- The additional sampling results from the on-going monitoring program.
- Feasibility of achieving an aluminum limit of 200 ug/l.
- Estimated Costs, cost-benefit results, and schedule for the feasible and preferred alternatives

On July 26, 2013, the Regional Water Quality Control Board (RWQCB) adopted the District's current Waste Discharge Requirements - Order R5-2013-0108, NPDES CA0084824 (Order), which updated Order R5-2007-0078. The feasibility study will meet the requirements of the Order's Method of Compliance Report that needs to be completed and submitted within two years of the permit effective date (i.e., by July 26, 2015). The feasibility study will include a recommendation for a compliance project that results in meeting the Order's final aluminum limit of 200 ug/L (annual average).

To facilitate any needed engineering design, the feasibility study also includes preliminary design criteria and schematics for the recommended modification.

Background

The North Yuba Water District (District) provides treated and irrigation water to rural customers primarily within Yuba County with a small portion of its service area located within Butte County. The District provides treated drinking water service to a population of approximately 3000 people (approximately 800 connections) in the communities of Forbestown, Sharon Valley, Brownsville, Challenge, Rackerby, and Cummings Ranch. The District also serves raw water to approximately 100 agricultural connections.

WATER SUPPLY AND NEEDS

The District receives surface water diverted from the Feather River's South Fork and conveyed via the Forbestown Ditch. The ditch receives water from South Feather Power Project (SFPP) through the Woodleaf Turnout SF-14 diversion, which is the start of the Forbestown Ditch. Figure 1 is an overview of the Forbestown Ditch from the SF-14 diversion through the diversion to the FWTP.

Flows in this ditch provide water to the District's domestic and irrigation customers. Table 1 summarizes Forbestown Ditch's raw water supply allocation. The ditch is the sole source of raw water to the Forbestown Water Treatment Plant (FWTP), which is located about 10 miles southwest of the diversion point. The District operates the FWTP under a Drinking Water Supply Permit issued by the California State Water Resources Control Board's Division of Drinking Water (DDW).

The existing Forbestown Ditch was constructed in 1865 in native soils and in a forested area. In addition to the open nature of the ditch, an approximately three-quarter-mile segment of the ditch was constructed in a steep downhill area (cascade section) that has led to considerable down-cutting caused by channel erosion. Due to the high velocity of the water along this stretch of the ditch, down-cutting is anticipated to continue, leading to high silt loads during periods of substantial use, which occur annually.

The vegetation in the vicinity of the ditch adds to the total pollutant loading by contributing pine needles and other humic substances, and animal waste to the water. The natural soils underlying the unlined ditch allow substantial water losses over the approximately 10-mile length of the ditch.

Figure 1. Forbestown Ditch Plan View from SF-14 Diversion through FWTP Diversion.

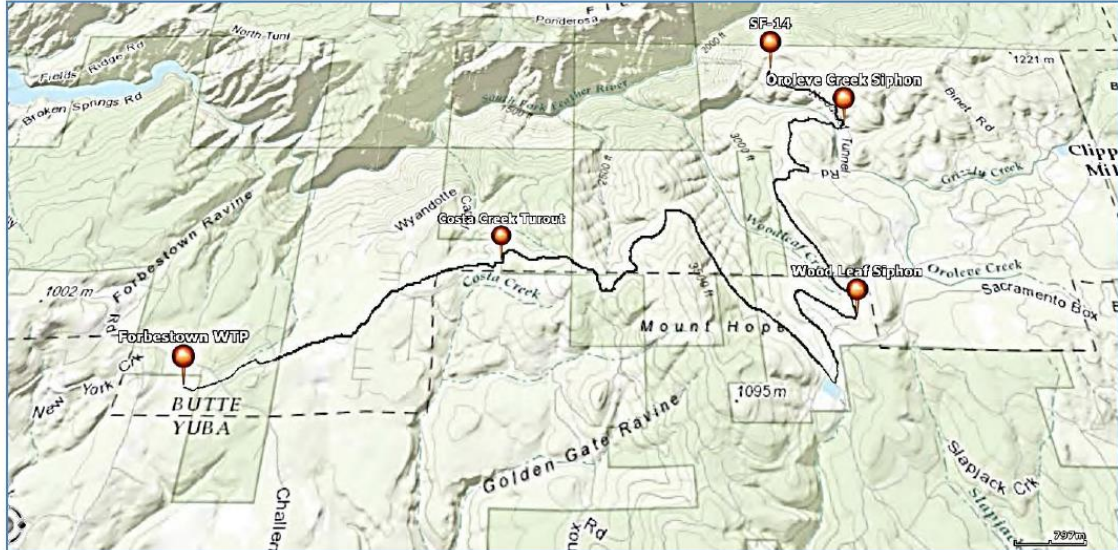


Table 1. Forbestown Ditch’s Raw Water Supply Allocation.

Consumer	Raw Water Capacity
South Feather Water and Power Authority (SFWPA)	11.0 cfs (7.1 mgd)
Domestic Water Supply ¹	1.6 cfs (1.0 mgd)
Irrigation Water Supply ²	11.4 cfs (7.4 mgd)
TOTAL	24.0 cfs (15.5 mgd)

1. Domestic water supply based on design daily average capacity of the FWTP.
 2. Estimated raw water supply for irrigation if Forbestown Ditch has no water losses
 3. mgd = million gallons per day

The domestic water distribution system includes a 500,000 gallon steel storage tank at the FWTP and approximately 33 miles of pipeline. Some of this water is used for agricultural purposes for small family farms in the area and for typical outdoor uses associated with residential use. The areas in the communities in the southern region of the District do not have a public water system, and rely on groundwater wells for potable water. When sufficient raw water supply is available, the irrigation operation is 24-hours per day and 7-days per week for six months each year (from April 15 through October 15).

FORBESTOWN WATER TREATMENT PLANT FACILITY DESCRIPTION

On-site Raw Water Storage Reservoir

Flows from the Forbestown Ditch may directly feed the FWTP treatment operation or be diverted to the on-site raw water storage reservoir. During the period from May through September (summer), when water demand is the highest, the raw water for the FWTP treatment operation comes directly from the Forbestown Ditch. During the non-peak period from September to May (fall, winter, and spring), the on-

site storage reservoir is used as the raw water source via the fine-slotted intake screen (to remove large debris and leaves) and raw water pump. The exact date in the spring and fall for the switch in the FWTP source water (from either the ditch or on-site reservoir) is dependent on domestic water demand.

As needed, the on-site reservoir is filled with flows from the Forbestown Ditch to maintain a full reservoir without overflowing to the unnamed tributary to the New York Flat Creek. Because of the Forbestown Ditch’s aging infrastructure, the ditch periodically requires shut-down for routine maintenance and emergency repair. Historically, ditch repairs have lasted up to five days to complete. Following each shut-down, the ditch operation may require up to two days to reach full operation. To ensure a more reliable water supply for District’s operations, emergency, and fire needs, the District currently maintains a full on-site raw water reservoir (30.9 acre-feet or 10 million gallons). At this full-capacity, the District estimates it has a 10-day raw water storage (based on one treatment train operating at 1-mgd).

As noted below, the on-site reservoir also receives overflows from the FWTP’s two backwash waste settling ponds. Therefore, overflows from the on-site reservoir is a mixture of raw water (from the ditch) and FWTP backwash waste water. When needed, the District uses an algaecide suitable for potable water reservoirs and with 9% copper to control aquatic weeds in the on-site reservoir. The MSDS sheet for the algaecide is included in Appendix B – FWTP Operational Data.

Treatment Operations (Up-flow Clarifiers and Multimedia Filters)

The FWTP’s design average daily flow is 2.0 mgd. The treatment facility includes two process trains where each train includes an up-flow absorption clarifier and multimedia filtration unit. The treatment capacity of each train is 1.0 mgd. The raw water is pre-chlorinated and pre-treated with an aluminum based coagulant to condition the solids immediately before the clarifier tanks, which use mixing, flocculation, and clarification (all in a single process step) to remove heavier raw water solids. Next, the multimedia filtration units use synthetic beads and mixed media (sand, anthracite, and gravel) to capture particulate and fine materials. Finally, the treated water is post-chlorinated and sent to the on-site treated water storage tank prior to distribution to domestic water customers.

The adsorption clarifier tank media is cleaned using an air scour and water flush process. This process uses vigorous mixing and scouring to separate the media and solid waste, which is then backwashed. The multimedia filters are also backwashed to clean the media. The flushing and backwashing operations are based on the pressure differential across the clarifier/filter. Table 2 summarizes the FWTP’s major wastewater stream flows:

Table 2. FWTP Major Wastewater Flow Summary

Operation	Criteria
Clarifier Flushing Waste ¹	6,500 gallons/flush
Filter Backwash Waste ²	19,800 gallons/backwash
Emergency Generator Cooling Water (when operating)	21,160 gpd

1. During peak-use period, flushing 0 to 3 times per day average. During non-peak use, flushing 0 to 2 times per day average.
2. During peak-use period, backwashing typically 1-2 times per day but up to 3 times per day. During non-peak use, backwashing occurs every other day.

Solids Dewatering Lagoons (Settling Ponds)

All flush and backwash waste flows, cooling water, and other minor wastewater flows are sent to one of two solids dewatering lagoons (settling ponds) located behind the treatment facility building. A common

pipe receives all waste flows and sends flows to a splitter box that controls flows to either one of the settling ponds. These ponds are designed to allow solids to settle and are dewatered by gravity underdrains and evaporation. Currently, the District alternates use of the ponds on a yearly basis, with one in use for settling and dewatering while the other in use for drying accumulated solids. The ponds are cleaned on a yearly basis. The solids removed from the active pond are dried on site and transported to a landfill for disposal.

Each pond includes an overflow pipe. When the water surface level in each ponds exceeds Elevation 2739.5 feet, the decanted overflow is sent to the on-site storage reservoir at Discharge Point 001 (EFF-001 in the District’s NPDES permit and shown in Figure 2 below.). The flow from Discharge Point 001 is not directly measured. Therefore, the NPDES permit estimates the flow from the ponds to be equivalent to 0.07 mgd, the design dry weather maximum flow from the FWTP’s filter backwash wastewater system.

Regulatory Requirements

NPDES WASTE DISCHARGE REQUIREMENTS FOR THE FWTP EFFLUENT

The discharge location covered by this order is where the settling ponds’ overflow pipes daylight into the on-site reservoir. The Order contains final effluent limitations for aluminum (equivalent to the Secondary Drinking Water maximum contaminant level of 200 ug/L as an annual average per calendar year). District’s compliance with this final effluent is not consistently achievable. Therefore, an interim effluent limitation for aluminum is included in the Order. Table 3 summarizes the Order’s interim and final FWTP effluent limitations for aluminum.

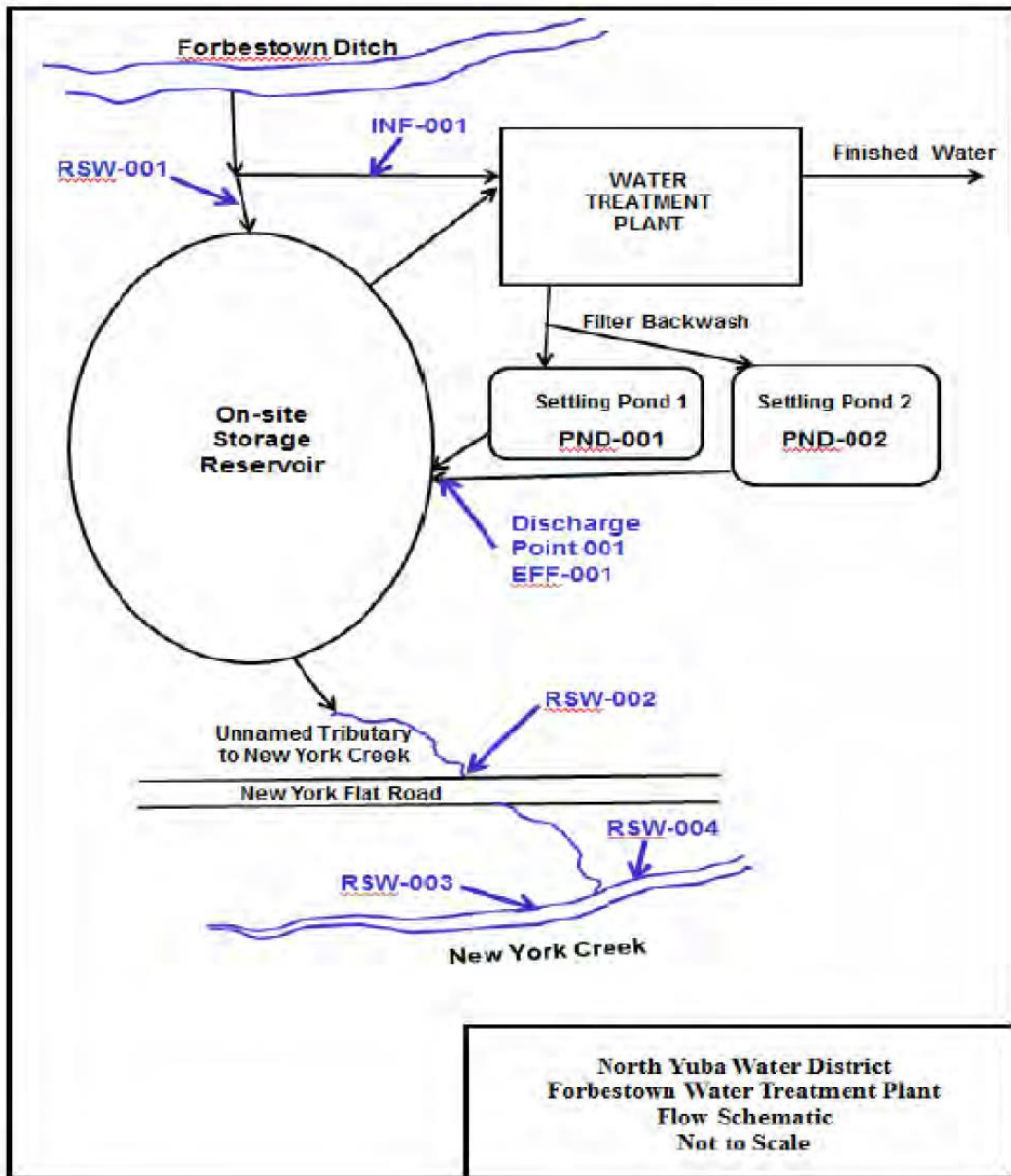
Table 3. FWTP Effluent’s Interim and Final Effluent Limitations for Aluminum

Constituent	Units	Interim (Annual Average)	Final Limit (Annual Average)
Aluminum	ug/L	798	200

Under this Order, the District was required to submit a Method of Compliance and Work Plan (2014 Work Plan) within one-year of the Order’s effective date (July 26, 2014). This 2014 Work Plan outlined the District’s corrective action plan and implementation schedule to assure compliance with the final effluent limitations for aluminum by July 26, 2018, five years from the adoption of the Order. The 2014 Work Plan also identified two probable sources of aluminum that are affecting the compliance of the Order’s permitted aluminum levels:

- Raw Water source (Forbestown Ditch)
- Aluminum based coagulant aid used in the treatment operation

Figure 2. FWTP Flow Schematic



MONITORING PLAN

Historical aluminum data are limited. As noted in the 2014 Work Plan, the District began monitoring the water discharges as required under the Order and will continue monitoring based on the requirements of the Order. Under the Order, monitoring is required when discharge occurs. Currently, monitoring consists of the following sample locations described below and shown on Figure 3.

- **RSW-001 and INF-001:** This is a sampling location that exists at the discharge of the exiting closed conduit transporting water from the Forbestown Ditch to the FWTP and on-site raw water reservoir. Since INF-001 redirects water into the FWTP near the same location as RSW-001, RSW-001 will also be used for its sample as it flows into the treatment plant and is chemically treated. The Order requires monitoring at INF-001 for electrical conductivity (once per year minimum) and hardness as CaCO₃ (once per year minimum)
- **PND-001 and PND-002:** These samples consist of the backwash water from the water treatment process in each respective pond.
- **EFF-001:** This sample point is located at the end of either drainage pipes directing overflows from the ponds to the raw water storage reservoir. Currently, the District uses only one basin at a time. The Order requires the District to monitor Discharge Point 001 at EFF-001 when there is discharge to the on-site reservoir from the settling ponds. Regarding the total recoverable aluminum parameter, the Order requires once a month grab sampling at EFF-001.
- **RSW-002:** This sample location exists along the unnamed tributary of New York Flat Creek after water has exited the raw water storage reservoir. After sufficient monitoring time, if the data shows that the unnamed tributary to New York Creek being a possible source of aluminum contamination, a second sample can be taken at the reservoir overflow as it enters the unnamed tributary stream.
- **RSW-003 and RSW-004:** These sample locations exist upstream and downstream of where the unnamed tributary connects with New York Creek respectively. Sampling before and after this connection allows NYWD to monitor the aluminum contamination in New York Creek resulting from the FWTP.

RECENT SAMPLING RESULTS

Since August 20, 2013, the District has conducted testing on water samples collected at:

- **EFF-001** (FWTP effluent discharge into the on-site reservoir) where samples are collected monthly.
- **RWS-001** when water is received from the Forbestown Ditch and stored at the on-site raw water storage reservoir
- **RWS-002** when water is discharged from the on-site reservoir storage site and into the unnamed tributary to New York Creek.

The District has continued to monitor and collect samples at EFF-001 each month throughout the compliance period. Samples collected were analyzed by Cramer Engineering, Inc. Total recoverable aluminum were tested using EPA 200.7 analytical methods. The EFF-001 samples were also tested for Calcium, Magnesium, Total Suspended Solids, recoverable hardness as CaCO₃, settleable matter, etc.

Figure 3. FWTP Site Map with Monitoring Locations

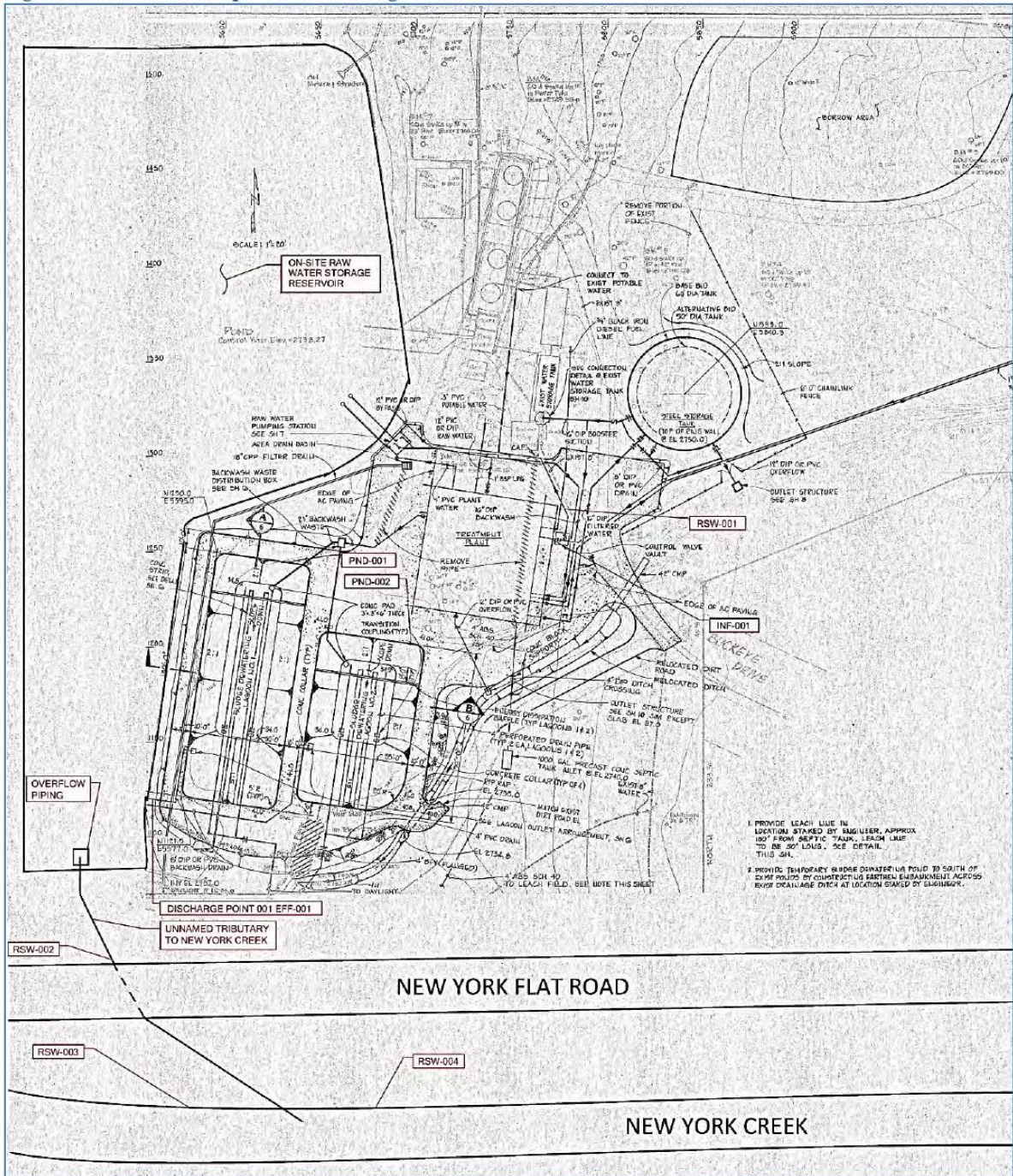


Figure 4 summarizes the total recoverable aluminum measured in the EFF-001 samples collected from August 20, 2013 through May 27, 2015. This figure also compares the sample results with respect to the Order's final and interim aluminum limits. In addition to the EFF-001 sampling, the figure shows the total recoverable aluminum amounts detected at the RSW-001 and RSW-002 locations.

As seen in Figure 4, except for a few outliers, most of the EFF-001 samples were below the interim limit for aluminum. For samples above the interim limit, the District acknowledged that the samples were unusually high as compared to the other sample results and attributed the outlying results to errors. With respect to the final limit of 200 ug/L, the EFF-001 samples had aluminum concentrations below the final limit during the early winter and late spring periods.

As also seen in Figure 4, the high EFF-001 aluminum results tended to exceed the 200 ug/L final limit when the RSW-001 samples also exceeded 200 ug/L. As noted above RSW-001 samples are only taken when water from the Forbestown Ditch is stored in the on-site reservoir. This observation supports the theory that the Forbestown Ditch is the primary source of aluminum at the FWTP facility.

Schedule for Compliance

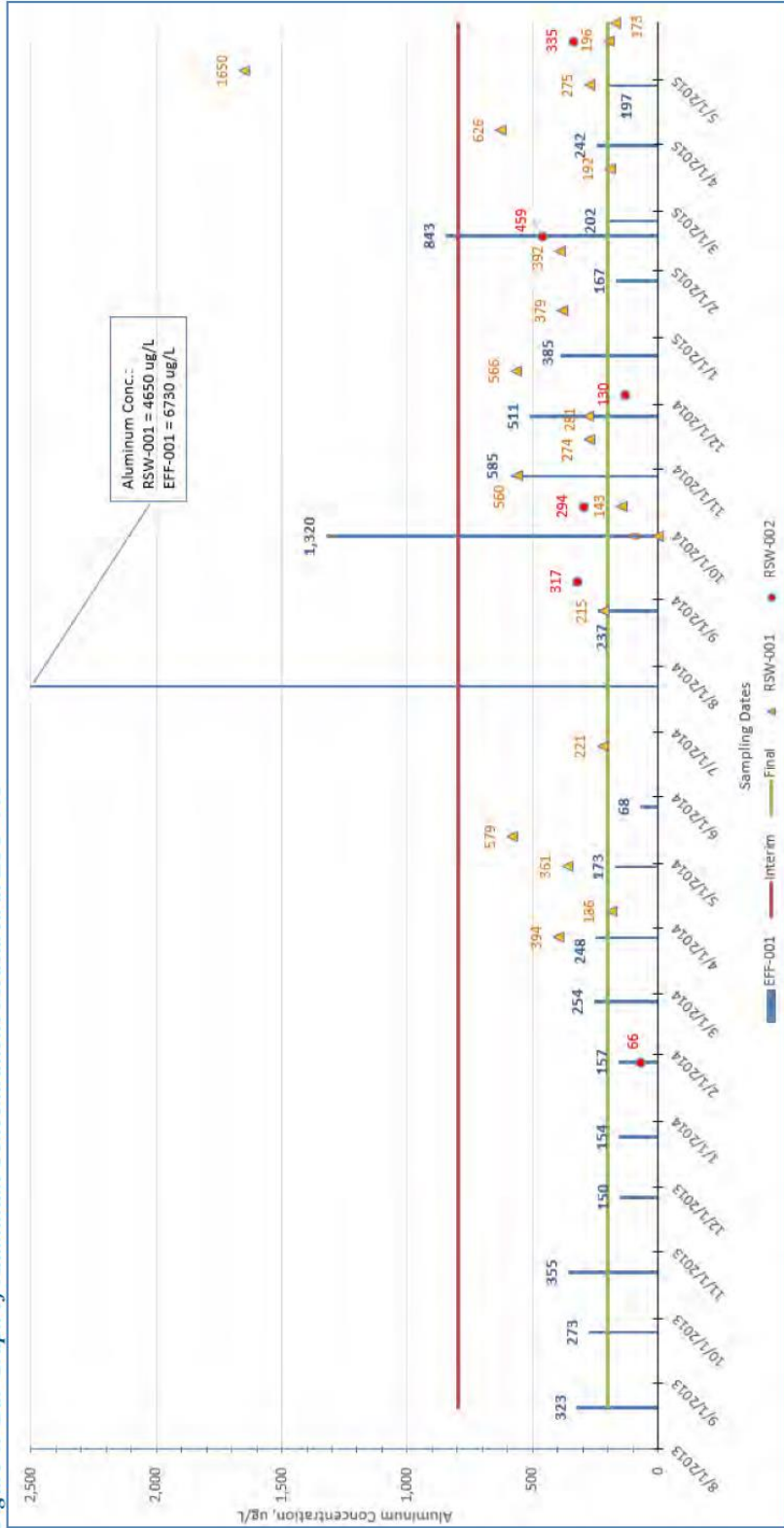
As noted in Table F-14 of the Order, any compliance project should begin within 3 years after the permit effective date (i.e., by July 26, 2016). Therefore, any design or engineering design should be completed by May 2016 to allow sufficient time for contractor bidding and mobilization (if needed).

An estimated time schedule for implementing the actions was described in the 2014 Work Plan and is present in Table 4. The proposed schedule is based on the District maintaining compliance with the Order's interim aluminum limit during the Phase I and II of the 2014 Work Plan. Progress on actions described in the 2014 Work Plan will be provided in the Method of Compliance Work Plan Progress Reports submitted to the RWQCB annually by January 31, after approval of the 2014 Work Plan. The progress reports shall detail the steps that have been implemented towards achieving compliance with the Order, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance with the final effluent limitations.

Table 4. District's FWTP Effluent Method of Compliance Schedule for Aluminum

Task	Approximate Completion Date
Implement Monitoring Program	Ongoing
Method of Compliance Work Plan Progress Report	January 31, annually
Complete Feasibility Study (Method of Compliance Report) and Submit to RWQCB	July 26, 2015
Complete Preliminary and Final Engineering Designs (if needed)	May 2016
Begin Compliance Project (e.g., construction)	July 26, 2016
Full Compliance with Final Aluminum Limit	July 26, 2018

Figure 4. Bar Graph of Aluminum Concentrations Measured at EFF-001



FEASIBILITY STUDY

Sources of Aluminum

As noted in the District's Pollution Prevention Plan, the FWTP's two sources of aluminum are the raw water source and the aluminum based coagulant aid used in the treatment operation.

RAW WATER SOURCE

The District monitors the raw water quality based on guidance from the California DDW under the requirements of the Water Supply Permit, which does not require measurement of the influent aluminum concentration. Aluminum is a naturally occurring metal and is known to be present in the raw water originating in the District's and other Sierra watersheds. Figure 5 shows the locations where recent aluminum samples were collected by the District along Forbestown Ditch. The Table 5 summarizes the total recoverable aluminum concentrations from these raw water samples.

Figure 5. Locations of Aluminum Sampling Along Forbestown Ditch

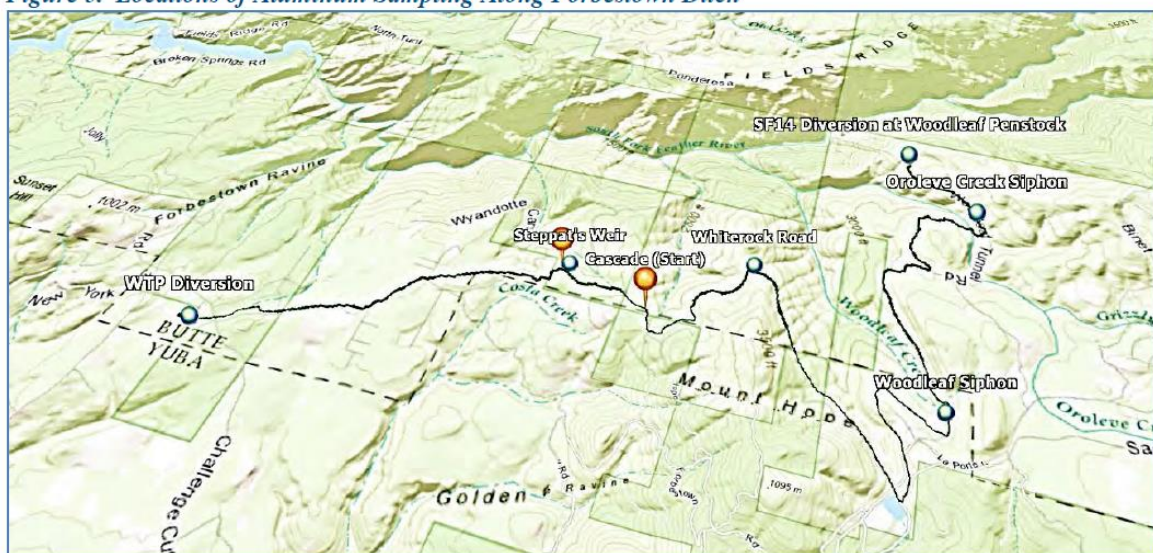


Table 5. Aluminum Concentrations from Raw Water Samples Collected along Forbestown Ditch

Sample Date	SF-14	Oroleve Junction	Woodleaf Siphon	Whiterock Road	Steppats Weir	RWS-001 at FWTP
4/8/14	111	84	71	No Sample	122	186
5/27/15	ND	57	89	123	190	173

Note: Total recoverable aluminum concentration as reported in ug/L

Recent sampling shows that the raw water aluminum concentrations are below the Order's final limit of 200 ug/L. At the Forbestown Ditch source water diversions (i.e., SF-14 and Oroleve Junction), the aluminum concentrations are significantly lower than from RWS-001 samples (collected at the FWTP, upstream of on-site reservoir).

Figure 5 also shows the Forbestown Ditch's cascade section starting point (downstream of Whiterock Road) and ending point (near Steppats Weir). In this section, the ditch is unlined and the water is significantly turbulent due to an 11-percent elevation drop over 1800-feet of ditch followed by a 2.8-percent elevation drop over 2500-feet. The May 27, 2015 samples showed a significant increase in Aluminum concentrations between the Whiterock Road and Steppats Weir sampling locations. Therefore, recent sampling supports that the unlined Forbestown Ditch are contributing significant levels of aluminum to the FWTP raw water supply.

ALUMINUM BASED COAGULANT AID

The District uses a proprietary aluminum based coagulant aid manufactured by NTU Technologies. This coagulant enhances coagulation of colloidal particles and improves settling and filtration properties. Samples of the FWTP treated water verify that the current treatment operations remove both the coagulant and naturally occurring aluminum to levels below the Drinking Water maximum contaminant levels.

2014 Work Plan Alternatives

The 2014 Work Plan included considerations of near-term and long-term modifications to the FWTP's backwash system to:

- Improve water quality of the settling pond discharge (i.e., overflows from settling ponds)
- Reduce solids carryover to section of pond near the overflow pipe (during discharge into the settling ponds)
- Collect additional data to estimate the feasibility of reducing solids and aluminum loads.
- Reduce discharge from the backwash waste settling ponds into the on-site raw water reservoir.

Since the District is nearly compliant with the Order's final aluminum limit, the 2014 Work Plan proposed that the feasibility study consider *both* the near-term and long-term modifications to achieve the final aluminum limits. Recent monitoring results continue to show that the District is in compliance with the interim aluminum limit. Therefore, the near-term modifications may be sufficient for full compliance with the Order's requirements.

Current Operation

The feasibility study evaluated 2013 and 2014 FWTP operational data provided by the District to estimate the solids loading contributed by the raw water and coagulant sources. Because of the historical drought conditions in California, 2014 was the first year that the District restricted Forbestown Ditch flows to SFPWA and FWTP only. Therefore, 2013 represented the last year with typical operation of the Forbestown Ditch and FWTP. The feasibility study's evaluations focused on using FWTP operational data from 2013.

As noted previously, the District alternates between the two settling pond on a yearly cycle. Based on conversations with staff at the FWTP, the ponds are able to produce 20% dry solids cake within one week of drying. The FWTP's 1986 Water Treatment Plant Improvements Project drawings showed that each settling pond was designed with two 4-inch diameter perforated polyethylene drain pipes running along the bottom of each pond to facilitate gravity drainage. The cross sectional view of the settling ponds' design are shown in Figure 6. Table 6 summarizes the design criteria for each settling pond.

Attachment 7

**Email from NYWD to Fraud Prevention Unit
dated 7/12/2019 Regarding Ditch Water Loss Percentages**

Lord, Jacques@Waterboards

From: email nywd.org <email@nywd.org>
Sent: Friday, July 12, 2019 3:44 PM
To: Lord, Jacques@Waterboards
Subject: water loss percentages

Dear Mr. Lord,

This is in response to your e-mail from earlier today. The way I come up with an average of 50% losses is I take the winter months every 10 day water order of 8 CFS of which we receive 2.5 CFS, that equals to a 68.75% loss. Right now we are ordering 20 CFS continually and are receiving 13 CFS. The losses are thus 35%. This roughly averages out to 50% losses.

I genuinely hope this is helpful in your investigations. If there are any questions or concerns, please don't hesitate to contact me.

Sincerely,
Jeremy Dimmett
North Yuba Water District
530 675-2567
email@nywd.org