

RECORD OF PROCEEDINGS

MINUTES OF A REGULAR MEETING OF THE BOARD OF DIRECTORS OF THE GREATROCK NORTH WATER AND SANITATION DISTRICT HELD NOVEMBER 3, 2015

A regular meeting of the Board of Directors (referred to hereafter as "Board") of the Greatrock North Water and Sanitation District (referred to hereafter as "District") was convened on Tuesday, November 3, 2015 at 5:30 P.M., at United Power, 500 Cooperative Way, Brighton, Colorado. The meeting was open to the public.

ATTENDANCE

Directors In Attendance Were:

Robert W. Fleck
John D. Wyckoff
Jeffrey Polliard
Brian K. Rogers
Dave Lozano

Also In Attendance Were:

Lisa A. Johnson; Special District Management Services, Inc.

Jennifer Gruber Tanaka, Esq.; White Bear Ankele Tanaka & Waldron, P.C.

Brad Simons, TZA Water Engineers

Alan Matlosz; George K. Baum & Company (for a portion of the meeting).

Bob Hines, Resident – 16410 Rayburn Street (for a portion of the meeting).

DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST

Disclosures of Potential Conflicts of Interest: Ms. Johnson advised the Board that, pursuant to Colorado law, certain disclosures may be required prior to taking official action at the meeting. Ms. Johnson confirmed that disclosures of conflicts of interest were filed with the Secretary of State's Office and the Board at least 72 hours prior to the meeting for those Directors with potential conflicts of interest. The Board reviewed the Agenda for the meeting, following which, Directors Fleck, Polliard, Lozano and Wyckoff each confirmed that they had no additional conflicts of interest in connection with any of the matters listed on the Agenda. Director Rogers disclosed that he is the majority owner of Red Line Transport, LLC. The Board will consider approval of an Independent Contractor Agreement with this company later in the meeting.

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ADMINISTRATIVE MATTERS

Agenda: Ms. Johnson distributed for the Board’s review and approval a proposed Agenda for the District’s regular meeting.

Following discussion, upon motion duly made by Director Polliard, seconded by Director Lozano and, upon vote, unanimously carried, the Agenda was approved as amended.

Board of Directors’ Report: Director Wyckoff reported that the irrigation systems at all three facilities have been winterized. Director Wyckoff and Director Polliard reported that they recently met with Mr. Simons and Ms. Johnson to review the scope of services included in the independent contractor agreement with Ramey Environmental Compliance (“REC”). Ms. Johnson has requested a meeting with REC to present the information discussed at that meeting.

Manager’s Report: Ms. Johnson presented and the Board reviewed the November Manager’s Report. A copy of the report is attached hereto and incorporated herein by this reference.

COMMUNITY COMMENTS

Community Comments: Bob Hines inquired about additional details regarding the type of building planned to house the Altela project. Mr. Simons explained the type of building planned in more detail. Mr. Hines also wanted to confirm that the \$20 per month Availability of Service Fee that he paid prior to building his home was accurately billed. Ms. Johnson confirmed the billing and explained the process to him.

CONSENT AGENDA

Consent Agenda: The Board considered the following actions:

- Approve Minutes of the October 6, 2015 regular meeting.
- Ratify approval of payment of claims through the period ending October 10, 2015, as follows:

| | |
|------------------------------|----------------------------|
| General Fund | \$ 58,572.21 |
| Debt Service Fund | \$ -0- |
| <u>Capital Projects Fund</u> | <u>\$ -0-</u> |
| Total Claims: | <u>\$ 58,572.21</u> |

- Accept cash position schedule and unaudited financial statements through the period ending September 30, 2015.
- Review operations and maintenance update and monthly work orders.

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- Review monthly water quality report.
- Approval of First Addendum to the Independent Contractor Agreement with Special District Management Services, Inc.
- Approval of Second Addendum to the Independent Contractor Agreement with Elite Industries, Inc.
- Approval of Continued Engagement Letter with White, Bear, Ankele, Tanaka and Waldron
- Approval of and Engagement Letter with Kutak Rock Arbitrage Consulting LLC
- Approval of renewal of Engagement Letter with Schilling & Co. for EDOP Financial Analysis Financial Reporting Services
- Approval of renewal of Independent Contractor Agreement with Bishop-Brogden Associates, Inc. for Renewable Water Supply Acquisition Services
- Approval of renewal of Independent Contractor Agreement with Rocky Mountain Power Generation for Generator Preventative Maintenance Services
- Approval of renewal of Independent Contractor Agreement with Dan's Custom Construction, Inc. for General Contracting Services
- Approval of renewal of Independent Contractor Agreement with Northern Colorado Constructors Inc. for On-Call and Emergency Repairs Services
- Approval of Completion of Services and Termination of Agreement for the following:
 - Timber Line Electric & Control Corp. – Greatrock North Power Failure Monitoring and SCADA Work - Electrical Repairs from Preventative Maintenance Analysis
 - Premier Industries – Landscape Maintenance Services
 - Instrument & Supply West, Inc. – Pump Station Control Valve Maintenance and Inventory Services
 - Redman Pothole Services, LLC – Rocking Horse Farms Potholing Services and Curb Stop Repair Services – Rocking Horse Farms and Box Elder Creek Ranch and Greatrock North Curb Stop Inspection

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and Exercising Services

High Plains Engineering & Design, LLC – Geotechnical Engineering Services for Greatrock North Pump Station Project

PWSI, Inc. – Survey Services for Greatrock North Pump Station Project

Pure Water Solutions, Inc. – Reverse Osmosis System Inspection Services

Following discussion, upon motion duly made by Director Rogers, seconded by Director Polliard and, upon vote, unanimously carried, the Board approved the consent agenda items with the elimination of the Completion of Services and Termination of Agreement letter to Generator Source LLLP d/b/a Diesel Service & Supply.

FINANCIAL MATTERS

2015 Audit: The Board entered into discussion regarding the engagement of Schilling & Co. to perform the 2015 Audit for an amount not to exceed \$5,200.

Following discussion, upon motion duly made by Director Fleck, seconded by Director Polliard and, upon vote, unanimously carried, the Board approved the engagement of Schilling & Co. to perform the 2015 Audit for an amount not to exceed \$5,200.

2015 Budget Amendment Hearing: Ms. Johnson noted that there was no need for a 2015 budget amendment.

2016 Budget Hearing: Director Fleck opened the public hearing to consider the proposed 2016 Budget and discuss related issues.

It was noted that the notice of public hearing stating that the Board would consider adoption of the 2016 Budget and the date, time and place of the public hearing was made in a newspaper having general circulation within the District. No written objections were received prior to this public hearing.

No public comments were received and the public hearing was closed.

Ms. Johnson reviewed the estimated 2015 expenditures and the proposed 2016 expenditures.

The Board discussed the ability to impose the Consumer Price Index increase pursuant to the agreement between the District and Box Elder Creek Ranch Water Company and determined not to impose the increase for 2016.

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Following discussion, the Board considered the adoption of Resolution No. 2015-11-01 to Adopt the 2016 Budget and Appropriate Sums of Money and Resolution No. 2015-11-02 to Set Mill Levies, for the General Fund at 28.340 mills and the Debt Service Fund at 18.500 mills, for a total mill levy of 46.840 mills, upon motion duly made by Director Fleck, seconded by Director Wyckoff and, upon vote, unanimously carried, the Resolutions were adopted, as discussed, and execution of the Certification of Budget and Certification of Mill Levies was authorized, subject to receipt of final Certification of Assessed Valuation from the County on or before December 10, 2015. Ms. Johnson was authorized to transmit the Certification of Mill Levies to the Board of County Commissioners of Adams County and the Division of Local Government, not later than December 15, 2015. Ms. Johnson was also authorized to transmit the Certification of Budget to the Division of Local Government not later than January 30, 2016. Copies of the adopted Resolutions are attached to these minutes and incorporated herein by this reference.

Resolution No. 2015-11-04, Resolution Concerning the Imposition of Various Fees, Rates, Penalties and Charges for Water Services and Facilities: The Board entered into discussion regarding the adoption of Resolution No. 2015-11-04, Resolution Concerning the Imposition of Various Fees, Rates, Penalties and Charges for Water Services and Facilities. The Board reviewed the water rate model presented by Mr. Simons. The model indicates that a water service charge increase from \$46 per month to \$48 per month is necessary in order to collect sufficient revenue to pay the approved expenditures for 2016.

Following discussion, upon motion duly made by Director Wyckoff, seconded by Director Polliard and, upon vote, unanimously carried, the Board adopted Resolution No. 2015-11-04, Resolution Concerning the Imposition of Various Fees, Rates, Penalties and Charges for Water Services and Facilities as discussed with an increase in the water service charge from \$46 per month to \$48 per month effective January 1, 2016. A copy of Resolution No. 2015-11-04 is attached hereto and incorporated herein by this reference.

Resolution No. 2015-11-05 Resolution Establishing Guidelines for the Processing and Collection of Delinquent Fees and Charges: Attorney Tanaka presented Resolution No. 2015-11-05 Resolution Establishing Guidelines for the Processing and Collection of Delinquent Fees and Charges.

Following discussion, upon motion duly made by Director Wyckoff, seconded by Director Polliard and, upon vote, unanimously carried, the Board adopted Resolution No. 2015-11-05 Resolution Establishing Guidelines for the Processing and Collection of Delinquent Fees and Charges. A copy of Resolution No. 2015-11-05 is attached hereto and incorporated herein by this reference.

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WATER MATTERS

Pending Water Court Cases: There was nothing new to report.

ENGINEER'S REPORT

Engineer's Report: Mr. Simons presented the Engineer's Report to the Board. A copy of the report is attached hereto and is incorporated herein by this reference.

Altela Project: Mr. Simons gave an update on the continuing effort to research the Altela project as a viable option to manage the concentrate water.

Mr. Matlosz presented general information regarding three financing options associated with the project. The Board discussed the options. The Board would like to see options to finance in which the mill levy and/or water rates would remain the same with no increase if possible. Once the final estimate of cost for the project has been determined, Mr. Matlosz can provide this analysis.

The Board then discussed the potential to acquire additional property adjacent to the Box Elder Creek Ranch Facility. The Board determined to discuss this again if the Altela project is approved.

Independent Contractor Agreement with Red Line Transport, LLC: The Board discussed the scope of services received to transport concentrate water to the Altela facility in Albuquerque, NM for testing purposes.

Following discussion, upon motion duly made by Director Polliard, seconded by Director Wyckoff, and, upon vote, unanimously carried, with Director Rogers abstaining, the Board approved an Independent Contractor Agreement with Red Line Transport, LLC to transport concentrate water to the Altela Facility in Albuquerque, NM.

OPERATIONS/ MAINTENANCE MATTERS

GIS Mapping: Discussion was deferred.

LEGAL MATTERS

2016 Annual Administrative Matters Resolution: Attorney Tanaka presented and discussed with the Board Resolution No. 2015-11-06: 2016 Annual Administrative Matters.

Following discussion, upon motion duly made by Director Wyckoff, seconded by Director Polliard and, upon vote, unanimously carried, the Board adopted Resolution No. 2015-11-06: 2016 Annual Administrative Matters. A copy of the Resolution is attached hereto and incorporated herein by this reference.

Resolution No. 2015-11-07 Resolution Regarding Election Matters: Attorney Tanaka presented and discussed with the Board Resolution No. 2015-11-07 Resolution Regarding Election Matters.

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Following discussion, upon motion duly made by Director Wyckoff, seconded by Director Polliard and, upon vote, unanimously carried, the Board adopted Resolution No. 2015-11-07: Resolution Regarding Election Matters. A copy of the Resolution is attached hereto and incorporated herein by this reference.

OTHER BUSINESS

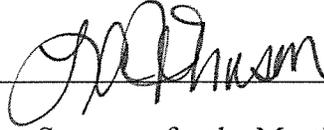
Other Business: There was no other business to discuss.

ADJOURNMENT

There being no further business to come before the Board at this time, upon motion duly made, seconded and, upon vote, unanimously carried, the meeting was adjourned.

Respectfully submitted,

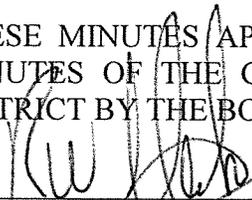
By



Secretary for the Meeting

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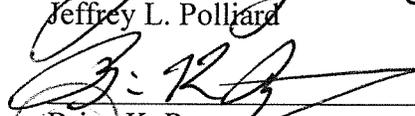
THESE MINUTES APPROVED AS THE OFFICIAL NOVEMBER 3, 2015
MINUTES OF THE GREATROCK NORTH WATER AND SANITATION
DISTRICT BY THE BOARD OF DIRECTORS SIGNING BELOW:



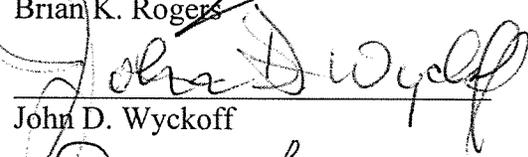
Robert William Fleck



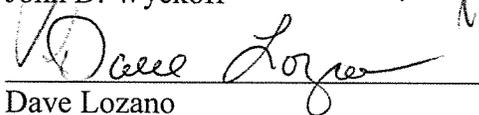
Jeffrey L. Polliard



Brian K. Rogers



John D. Wyckoff



Dave Lozano



Date: October 27, 2015
To: Greatrock North Water and Sanitation District, Board of Directors
From: Lisa A. Johnson, District Manager
Re: November 3, 2015 Manager's Report

Agenda Action Items

II.A. Consent Agenda

1. Review and approve the Minutes of the October 6, 2015 regular meeting
2. Consider ratifying approval of payment of claims through the period ending October 10, 2015
3. Operations and Maintenance update and monthly work orders
4. Review monthly water quality report
5. Review and consider approval of the First Addendum to the Independent Contractor Agreement with Special District Management Services, Inc.
6. Review and consider approval of the Second Addendum to the Independent Contractor Agreement with Elite Industries, Inc
7. Review and consider approval of a continued engagement letter with White, Bear, Ankele, Tanaka and Waldron
8. Review and consider approval of an engagement letter with Kutak Rock Arbitrage Consulting LLC

9. Review and consider renewal of engagement of Schilling & Co. Agreement for EDOP Financial Analysis Financial Reporting Services (no change in fees or services).
10. Review and consider renewal of Independent Contractor Agreement with Bishop-Brogden Associates, Inc. for Renewable Water Supply Acquisition Services (pending confirmation of any rate changes).
11. Independent Contractor Agreement with Rocky Mountain Power Generation, Inc., for Generator Preventative Maintenance Services (no change in scope or fees).
12. Independent Contractor Agreement with Dan's Custom Construction, Inc., for General Contracting Services (no change in scope or fees).
13. Independent Contractor Agreement with Northern Colorado Constructors, Inc., for On-Call and Emergency Repairs Services (no change in scope or fees).
14. Review and consider approval of Completion of Services and Termination of Agreement for the following:
 - Timber Line Electric & Control Corporation – Greatrock North Power Failure Monitoring and SCADA Work and Electrical Repairs from Preventative Maintenance Analysis
 - Premier Industries – Landscape Maintenance Services
 - Instrument & Supply West, Inc. – Pump Station Control Valve Maintenance and Inventory Services
 - Redman Pothole Services, LLC – Rockinghorse Farms Potholing Services and Curb Stop Repair Services – Rocking Horse Farms and Box Elder Creek Ranch and Greatrock North Curb Stop Inspection and Exercising Services
 - High Plains Engineering & Design, LLC – Geotechnical Engineering Services for Greatrock North Pump Station Project
 - PWSI, Inc. – Survey Services for Greatrock North Pump Station Project
 - Pure Water Solutions, Inc. – Reverse Osmosis System Inspection Services

-Generator Source LLLP d/b/a Diesel Service & Supply – Radiator Repair Services

I recommend approval of the consent agenda items.

III.A. 2015 Audit

Staff has solicited a proposal from Schilling & Co. to prepare and present the 2015 audit. I will present the engagement letter at the meeting.

III.B. 2015 Budget Amendment

The Budget Committee has reviewed the estimated 2015 expenditures through year-end. At this point it does not appear as though expenditures will exceed the amount budgeted and therefore a 2015 budget amendment is not needed at this time.

III.C. 2016 Budget

Staff will present the final draft budget for 2016. Expenditures were moved from the operations line items to the capital reserve and replacement line item based on discussions at our October meeting.

I recommend adoption of the 2016 Budget and associated resolutions.

III.D. Resolution Concerning the Imposition of Various Fees, Rates, Penalties, and Charges for Water Services and Facilities

Staff will present the water rate model at the meeting. In reviewing the model, it appears as though a slight rate increase (3% or so) to the monthly service fee is in order.

I recommend adoption of Resolution 2015-11-04, Resolution Concerning the Imposition of Various Fees, Rates, Penalties and Charges for Water Services and Facilities.

III.E. Resolution Establishing Guidelines for the Processing and Collection of Delinquent Fees and Charges

Attorney Tanaka will present Resolution No. 2015-11-05 Resolution Establishing Guidelines for the Processing and Collection of Delinquent Fees and Charges.

V.A.2. Altela Financing Options

Mr. Matlosz will attend the meeting to discuss the different financing options available regarding the Altela project.

Review of monthly Water Resumes and Other Water Related Matters

Attorney Poznanovic reviewed the August resume, and did not find any cases that he thinks the District would have an interest in opposing.

4 QTR Facility Inspection

- Discussed the Altela project
 - Planned how to fill totes
 - Determined to replace the membranes prior to testing
 - Discussed location of new facility

- Discussed erratic SCADA monitoring at the Box Elder Creek Ranch Tank Flow Meter
 - Cleaned the probes on the unit and put unit back in service – erratic readings continued
 - REC will provide a proposal to replace the flow meter

- Valve Inserts will be completed by year end

- Annual valve exercising and hydrant flushing services will be completed by year end

- Pre-filter housing drain was leaking and was repaired at the meeting

- Chlorine feed needs to be replaced at R.O. Facility

- Report to be included in board packet that illustrates any and all meter replacements and the reason why.



Ramey Environmental Compliance, Inc.
Management and Operation Solutions for
Water and Wastewater Treatment
303-833-5505

PO Box 99, Firestone, Colorado 80520
email: contact.us@RECinc.net
www.RECinc.net

**Greatrock North W & S District
Monthly Activities
September 21st – October 26th**

9/21/15: Regular checks and readings. Ran the RO to check for flow fluctuation. None were observed. Completed a water service line inspection at: 16290 Queensview St. Completed a locate at: 31455 E 162nd Ave.

9/23/15: Regular checks and readings. Completed a locate at: 28285 E 163rd Pl.

9/25/15: Regular checks and readings. Clean in place the RO and installed new prefilters.

9/28/15: Regular checks and readings. Completed a locate at 29850 E 167th Pl.

9/30/15: Regular checks and readings.

10/2/15: Regular checks and readings. Completed a water service line re-inspection at: 16290 Queensview St.

10/5/15: Regular checks and readings.

10/7/15: Regular checks and readings. Completed a locate at 16520 Umpire St. Earl, with Worth Hydro Chem, and Jeff Rabas onsite to evaluate the RO filters.

10/9/15: Regular checks and readings. Checked the fluid levels on all generators. Checked the phones at all well houses. The phone at Rocking Horse Farms was not working. Tried to close the RO high pressure bypass line valve due to continued large fluctuations in flow rate from 152gpm to 175gpm. Completed a locate at: 16520 Umpire St.

10/12/15: Regular checks and readings.

10/14/15: Regular checks and readings. Collected and delivered monthly samples and total hardness and TDS samples. Completed a water service line inspection at: 31310 E 164th Ave.

10/16/15: Regular checks and readings. Completed a locate at 31485 E 162nd Ave.

10/19/15: Regular checks and readings.

10/21/15: Regular checks and readings.

10/23/15: Regular checks and readings.

10/26/15: Regular checks and readings. Collected and delivered concentration pond samples. Cleaned the chlorine injector.

Operations Maintenance issues:

Status of valve box inserts and markers project – *still in progress*

September 21st – October 26th

| | |
|--------------------------------------|-----------------|
| RO Run Time Hrs | 248.0 hrs |
| RO Concentrate Flow – 1 pond (North) | 491,040 gallons |

9/9/15

| Monthly Testing | TDS(mg/L) | Calcium (mg/L) | Magnesium (mg/L) | Total Hardness(mg/L) |
|-----------------|-----------|----------------|------------------|----------------------|
| BE | 470 | 46.9 | 8.6 | 152.6 |
| RHF | 471 | 50.8 | 9.1 | 164.3 |
| GRN | 495 | 48.7 | 8.9 | 158.4 |

10/14/15

| Monthly Testing | TDS(mg/L) | Calcium (mg/L) | Magnesium (mg/L) | Total Hardness(mg/L) |
|-----------------|-----------|----------------|------------------|----------------------|
| BE | 414 | 41.3 | 7.5 | 134.1 |
| RHF | 406 | 36.1 | 6.6 | 117.2 |
| GRN | 385 | 36.8 | 6.5 | 118.7 |

Completed Work Order List Report

10/26/2015

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| Completed | Equipment Number | Task | Priority | WO# | Type |
|------------|----------------------|---------------------------|----------|--------|-----------|
| 10/14/2015 | Boxelder Pump Buildi | TDS and Hardness | 1 | 558.01 | Scheduled |
| 10/14/2015 | GRN Pump Building | TDS and Hardness | 1 | 558.03 | Scheduled |
| 10/14/2015 | RHF Building | TDS and Hardness | 1 | 558.02 | Scheduled |
| 10/9/2015 | BOX BP1 VFD | Clean Eqp Clean Equipment | 5 | 559.01 | Scheduled |
| 10/9/2015 | BOX BP2 VFD | Clean Eqp Clean Equipment | 5 | 560.01 | Scheduled |
| 10/9/2015 | BOX BP3 VFD | Clean Eqp Clean Equipment | 5 | 561.01 | Scheduled |
| 10/9/2015 | BOX Generator | Ck Fuel Check Fuel Level | 5 | 562.01 | Scheduled |
| 10/9/2015 | GN Generator | Ck Fuel Check Fuel Level | 5 | 563.01 | Scheduled |
| 10/9/2015 | RHF Generator | Ck Fuel Check Fuel Level | 5 | 565.01 | Scheduled |
| 10/8/2015 | Water Sampling | Bacti Bacti Sampling(069) | 1 | 566.01 | Scheduled |
| 9/25/2015 | BOX RO system | CIP Clean in place | 1 | 549.01 | Scheduled |

**GREATROCK NORTH WATER AND SANITATION DISTRICT
ENGINEER'S REPORT
OCTOBER 25, 2015**

Concentrate Management Options

As noted at the April 2015 Board meeting, we have shifted our attention from concentrate disposal to concentrate management and are looking at several options. The GridBee mixing equipment to enhance evaporation has been tabled due to questionable case history and additional cost considerations. The beneficial reuse applications by Industrial Water Permitting and Recycling have been placed on hold in light of limited use of any State approvals. In August of 2015, the Board and Altela, Inc. executed a Letter of Intent for establishing a Charter Customer Relationship with respect to the site development, installation, and related systems integration of an AltelaRain Reserve Osmosis Wastewater Concentrator Asset Recovery Facility.

Based upon the Letter of Intent, dated August 7, 2015, and executed by Altela, Inc. on August 17, 2015, the District has initiated efforts on a number of fronts, including:

- Application for a Preliminary Effluent Limitation (PEL) Determination – The PEL request was submitted to the Water Quality Control Division (Division) via e-mail on September 2, 2015, and a hard copy mailed to the Division that day. The Division acknowledged receipt of the hard copy on September 8. The District received an invoice from the Division for the PEL determination on September 22. Payment was remitted on September 24. The Division's intent is to prepare the PEL within 45 days, beginning with receipt of a complete application and receipt of payment. On October 23, a representative of the Division, Jennifer Charles, and I spoke regarding the PEL request and I provided her with information regarding the District's 8 ground water wells.
- Application for an Industrial Individual Wastewater Discharge Permit – The application was submitted to the Division on September 24. On September 28, the Division acknowledged receipt of a complete application via e-mail.
- Conceptual Floorplan Revisions – I have produced a more detailed conceptual floor plan, taking into consideration an office/meeting room, an operations office, a small lab, a restroom, a chemical room, a room for the distribution pumps, a boiler room, and floor space for two (2) reverse osmosis units, and two (2) AltelaRain units. WE are getting a variety of cost estimates (\$30 to \$50 per square foot) from the structure/concrete associated with the conceptual building. We will need to refine the costs estimates, and account for the costs of doors, windows, interior finishes, mechanical/electrical, etc.

LAMP RYNEARSON COMPANIES

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- Water Testing – Shipping costs from Red Line Transport have been quoted and are more favorable than Altela's shipping company. Altela has indicated the shipping totes do have salvage value, but the District needs to determine if it wants to keep the totes. Brad spoke with Altela regarding offloading/tankage arrangements and we will need to coordinate the delivery. Three (3) 330-gallon totes have been procured and are being cleaned by John at his house. Brad will coordinate the water collection and shipping arrangements with Ramey, Red Line, and Altela pending installation and operation of the new RO membranes.
- Adams County Planning Department/Building Department Requirements – Based upon a September 18, 2015 telephone conversation with Adams County Planning, the proposed facility will require a major amendment to the PUD. The vacation of the lot line between Tracts C and F will require a plat correction. Both of these will require a public hearing but can be processed concurrently.

As for the evaporation ponds, attached is a memo from Lauren Goecke summarizing the evaporation pond activity, including a graph of documented pond levels in 2014 and 2015.

Greatrock North Pump Station Improvements

The design of the Greatrock North Pump Station Improvements has been put on temporary hold and may be combined for bidding purposes with the new water treatment facility being contemplated.

Alluvial Well Flow Meter Verifications

On September 4, 2015, TZA Water Engineers tested the accuracy of the flow meters for the two (2) alluvial wells. Copies of the reports to be filed with the Division of Water Resources have been provided to Jeff Rabas. Copies of the signed reports are attached.

2016 Water Rates

TZA Water Engineers has conducted a review of the District's water rates as part of the 2016 budget process, and has updated the model based upon the revised budget. I will present my recommendations to the District Manager in advance of the November Board meeting.

Other Activities

Water Quality and Hardness – TZA is tracking the water production data and water quality results from a series of sampling events. Attached is a memo from Lauren Goecke summarizing the water production data, water quality results, and water treatment plant observations.

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Reverse Osmosis Condition Assessment – Pure Water Solutions conducted a condition assessment on May 27, 2015 and presented its findings and recommendations to the District on June 12. Those recommendations were discussed at the July Board meeting and my recommendation was that we delay any action on their recommendations pending receipt of additional information from Pure Water Solutions. In response to my request for additional information, Pure Water Solutions indicated the following:

- The sensors are the windows into the system and the replacements are a suggestion. However, maintaining the sensor calibrations helps document the overall RO unit operation.
- They do not have confidence in the current anti-scale chemical and dosing system.
- New membranes will make all the difference in the world.
- Accurate process readings, along with correct chemical and dosing, will help improve on over-all recovery, but the exact percentages are to-be-determined.
- Lead times on membranes vary from in-stock to 8-10 weeks.

TZA recently accompanied Jeff Rabas and Worth Hydrochem on an inspection of the RO water treatment plant. Based upon the on-site meeting with the Worth Hydrochem representative, the District is changing its anti-scalant product and will be procuring and installing new membranes per the attached memo, dated September 23, 2015.

Storage Tank Rule – The Water Quality Control Division has adopted a new version of the Colorado Primary Drinking Water Regulations (Regulation 11). Effective April 1, 2016, the District will be required to have a written plan for finished water storage tank inspections. In addition to quarterly periodic (visual) inspections, the District will need comprehensive inspections to be scheduled at least every five years. Jeff Rabas has been securing proposals for the comprehensive inspections.

New Chlorine Residual Requirements – The Water Quality Control Division has adopted a new version of the Colorado Primary Drinking Water Regulations (Regulation 11). Effective April 1, 2016, the District will be required to maintain a minimum of 0.20 milligrams per liter chlorine residual throughout the distribution system. Ramey Environmental Compliance will record chlorine residuals at the extents of the distribution system for each subdivision on a periodic basis throughout the remainder of 2015, and Jeff Rabas and I will review the data in November of this year.

Warranty Inspections – Ramey Environmental Compliance is tracking the 11-month warranty inspections for the following projects:

- Rocking Horse Farms Pump Station – The warranty inspection was conducted by Jeff Rabas on July 18, 2014.
- Box Elder Creek Ranch Pump Station – The warranty inspection was conducted by Brad Simons on January 26, 2015.

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- Rocking Horse Farms Tank Repainting – The improvements were inspected and accepted on June 11, 2014. A preliminary warranty inspection was conducted by Ramey Environmental Compliance on April 24, 2015 and Coblaco addressed some minor surface rust and some isolated coating repairs on August 5, 2015.

Utility Billings and Energy Costs – TZA is tracking the United Power utility bills and associated water operations on a monthly basis. Attached is a memo from Lauren Goecke summarizing the monthly comparisons for July each year, as well as a summary of the eight-month periods for 2014 and 2015.

Curb Stop Box Specification – The recent issues with curb stop boxes witnessed by Director Wyckoff resulted in a review of the District's Rules and Regulations and the boxes specified. TZA's previous recommendations for a screw-style Buffalo-style box having an arch pattern base and an inside diameter of 2.5 inches has been further reinforced with the recommendation the pending revisions to the Rules and Regulations specify a 6500 Series Screw Type curb box, as manufactured by Castings, Inc. (970-243-3032), having a minimum internal diameter of 2.25 inches, or an approved equal. The part number is "C.I. 95-E" and includes a 30" top section and a 39" bottom section allowing for a bury depth of 41 inches to 64 inches. For deeper installations, Castings Inc. offers extensions in 9" (Item 151), 16" (Item 152), 28" (Item 153), and 30" (Item 154) heights.

Well, Pump, and Motor Replacements – The District has initiated efforts to better understand its well infrastructure and the potential need for replacement of pumps and motors, as well as the well structures themselves. As a part of that effort, TZA Water Engineers will need to work with Bishop-Brogden Associates to compile the historical aspects of the wells constructed, the pumps installed, and any other improvements (i.e. water level measuring devices) integrated at each site. This information will be used to evaluate the benefits of a pump, motor, and well maintenance program to detect changes in well performance. Early detection of deterioration in well performance will allow less expensive repairs, rehabilitation, or treatment procedures in order to maximize production capacity. This preventative maintenance program will be discussed with the District's Manager, and a formal proposal will be brought to the Board if deemed appropriate.

Engineer's Report
October 25, 2015
Page Five

Control Valves Evaluation – During the 3rd Quarter Operational Review Meeting, conducted on August 17, 2015, it was determined the District should develop a control valve evaluation plan. As the Board may recall, the District contracted with iSiWest in 2014 (July 14-15 and September 19), to inspect and service five (5) control valves, including one (1) at the Box Elder Creek Ranch Pump Station, one (1) at Rocking Horse Farms Pump Station, and three (3) at the Greatrock North Pump Station. On March 6, 2015, the District contracted with Ramey Environmental Compliance's Equipment Services Division to service one (1) pressure relief valve at the Box Elder Creek Ranch Water Treatment Plant. Since the District has an assortment of valves in a variety of locations throughout the District, REC will update the valve inventory in the Allmax software and work with Lisa Johnson, TZA, and the budget committee to prioritize the efforts for 2016 and beyond. A sample of the valves that could be addressed in the Box Elder Creek Ranch Pump Station are tabulated below.

| Valve Location | Valve Type | Valve Size |
|---------------------------|-------------------------|------------|
| UKA-3 Check | Cla-Val Hytrol | 2" |
| UKA-3 Air/Vacuum | Val-Matic | 1/2" |
| UKA-3 CRL | Cla-Val Pressure Relief | 1/2" |
| LFH-3 Check | Cla-Val Hytrol | 3" |
| LFH-3 Pressure Relief | Cla-Val Series 50 | 1-1/2" |
| LFH-3 CRL | Cla-Val Pressure Relief | 1/2" |
| LFH-3 Air/Vacuum | Cla-Val Series 35 | 1/2" |
| Alluvial Wells Air/Vacuum | Cla-Val Series 35 | 2" |

MEMORANDUM

To: Lisa Johnson, District Manager
 From: Lauren Goecke, EI
 Date: October 23, 2015
 Re: Greatrock North Water and Sanitation District – Concentrate Management
 Project No.: 0414018.01-002

Evaporation Pond Summary: The south pond elevation was at 4.66 feet on May 11, 2015 – an estimated 6 inches from overtopping the pond. The valve between the ponds was opened on May 12, 2015 to transfer water from the south pond to the north pond. The south pond was isolated on May 20, 2015 with a water elevation of 3.86 feet and the concentrate flows were directed to the north pond. The elevations in the south pond are tabulated below. Jeff Rabas is also providing the north pond elevations from visual observations of a temporary staff gauge, also tabulated below.

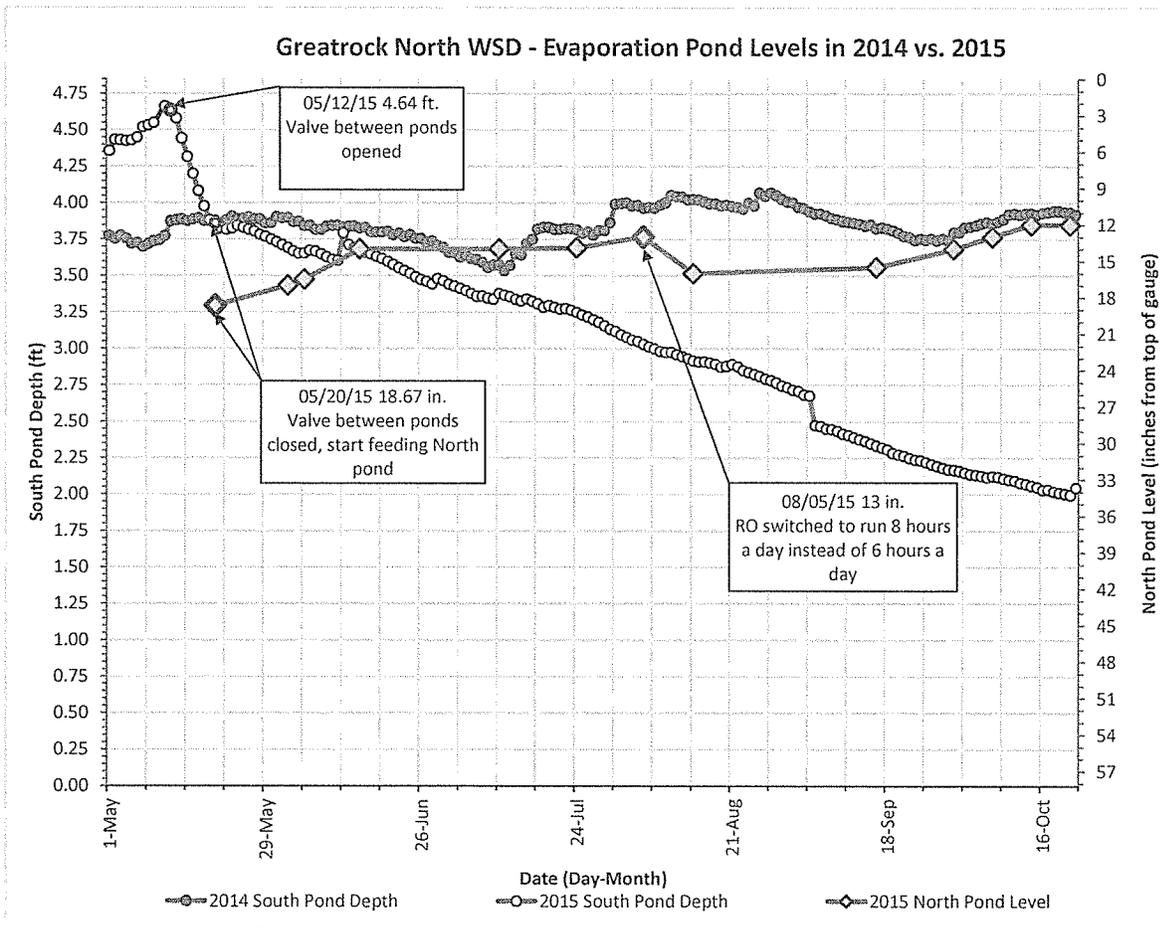
| Date | South Pond Depth (feet, from daily SCADA report) |
|--------------------|--|
| May 25, 2015 | 3.83 |
| June 29, 2015 | 3.48 |
| July 27, 2015 | 3.20 |
| August 23, 2015 | 2.85 |
| September 20, 2015 | 2.27 |
| October 22, 2015 | 2.04 |

| Date | North Pond Measurement (inches, from top of gauge) |
|--------------------|---|
| May 20, 2015 | 18"(+) |
| June 3, 2015 | 17" |
| June 8, 2015 | 16.5" |
| June 15, 2015 | 14" |
| July 10, 2015 | 14" |
| July 24, 2015 | 13.9" |
| August 5, 2015 | 13" |
| August 14, 2015 | 16" |
| September 16, 2015 | 15.5" |
| September 30, 2015 | 14" |
| October 7, 2015 | 13" |
| October 14, 2015 | 12" |
| October 21, 2015 | 12" |

The graph on the following page shows a comparison of the south pond levels in 2014, the south pond levels in 2015, and the north pond levels in 2015.

LAMP RYNEARSON COMPANIES





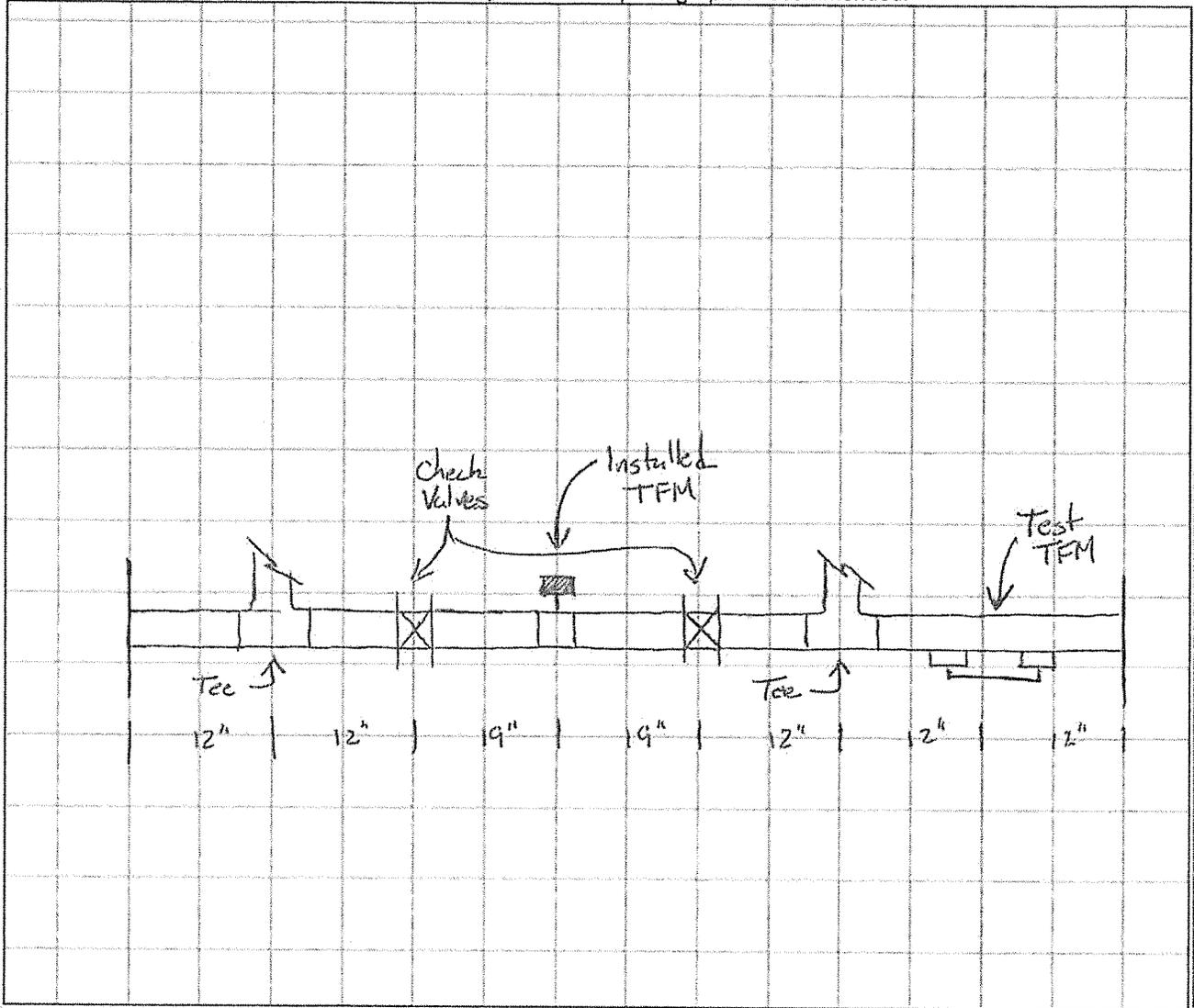
| | | |
|---|---|---|
| Form 3.1 06/15/2014 | S. Platte River – Division 1 970-352-8712 Fax 970-392-1816 810 9 th Street, 2 nd Floor, Greeley, CO 80631 dnr_div1spgwm@state.co.us Republican River – Division 1 970-352-8712 Fax 970-392-1816 810 9 th Street, 2 nd Floor, Greeley, CO 80631 dnr_div1rrgwm@state.co.us Arkansas River – Division 2 719-542-3368 Fax 719-544-0800 310 E. Abriendo, Suite B, Pueblo, CO 81004 Rio Grande River – Division 3 719-589-6683 Fax 719-589-6685 P.O. Box 269, 301 Murphy Drive, Alamosa, CO 81101 Designated Basins – Division 8 303-866-3581 Fax 303-866-2223 1313 Sherman St. Rm. 818, Denver, CO 80237 | For Office Use Only <input type="checkbox"/> Passed <input type="checkbox"/> Failed <input type="checkbox"/> Variance Approved Date of variance _____ |
|  www.water.state.co.us | | |
| NOTICE OF TOTALIZING FLOW METER RE-VERIFICATION, INSTALLATION OR REPLACEMENT | | |
| Check appropriate box | | |
| <input type="checkbox"/> To be filed in Compliance with Rule 16.5 of the Rules Governing the Measurement of Tributary Ground Water Diversions in the Republican River Basin (Complete pages 1-6) | | |
| <input type="checkbox"/> To be filed in Compliance with Rules 3.1 of the Amended Rules Governing the Measurement of Tributary Ground Water Diversions in the Arkansas River Basin (Complete pages 1-5) | | |
| <input type="checkbox"/> To be filed in Compliance with Rule 3.1 of the Rules Governing the Measurement of Tributary Ground Water Diversions in the Rio Grande River Basin (Complete pages 1-5) | | |
| <input type="checkbox"/> To be filed in Compliance with the Ground Water Commission Rules Governing Designated Basins (Complete pages 1-5) | | |
| <input checked="" type="checkbox"/> To be filed in Compliance with Rule 3.1 of the Rules Governing the Measurement of Tributary Ground Water Diversions in the South Platte River Basin (Complete pages 1-5) | | |
| Reason for meter verification (Check all that apply): | | |
| <input checked="" type="checkbox"/> Re-Verify Previously Verified TFM | | The following MUST be provided for new & replaced meters |
| <input type="checkbox"/> New TFM (No previous meter) | | Date New TFM installed: _____ |
| <input type="checkbox"/> Replacing Previous TFM (also complete area at right) | | Date Previous TFM removed: _____ |
| <input type="checkbox"/> Previous TFM Serial No.: _____ | | Previous TFM Reading (Estimate required if not readable): _____ |
| <input type="checkbox"/> Change in Measurement Method from: | Hour Meter <input type="checkbox"/> | Slave Meter <input type="checkbox"/> |
| | Power Co Meter <input type="checkbox"/> | Previous Meter SN _____ |
| <input type="checkbox"/> Register seal replaced due to: | New Seal No. _____ | Old Seal No. _____ |
| | | TFM Reading _____ |
| | | K-Factor (Test req'd. if changed) _____ |
| <input type="checkbox"/> Sensor / meter seal replaced due to: | New Seal No. _____ | Old Seal No. _____ |
| | | TFM Reading _____ |
| Contact Information: | | |
| Well Owner Name <i>Greatrack North Water + Sanitation Dist.</i> | | User (if not same as well owner) Name _____ |
| Mailing Address <i>141 Union Blvd., Ste. 150</i> | | Mailing Address _____ |
| City <i>Lakewood</i> | State <i>CO</i> | Zip <i>80228</i> |
| | | City _____ |
| | | State _____ |
| | | Zip _____ |
| Phone _____ | Email _____ | Phone _____ |
| | | Email _____ |
| Well Information and Location (Provide Permit No. and/or Case or Decree No. if no WDID exists or is not known) | | |
| Visit Aquamap to find well information: http://water.state.co.us/DataMaps/GISandMaps/AquaMap/Pages/default.aspx | | |
| WDID <i>0109983</i> | Permit No. <i>63024-F</i> | Water Court Case No. _____ |
| | | Location (¼, ¼, Sec., T., R., PM) <i>NW, SE, 1, 1S, 65W, 6^m</i> |
| | | Well GPS Coordinates must be in NAD83, UTM Zone 12/13N |
| | | Northing <i>4426804</i> |
| | | Easting <i>533125</i> |
| Power Supply | | |
| <input checked="" type="checkbox"/> Electric <input type="checkbox"/> Artesian <input type="checkbox"/> Solar <input type="checkbox"/> Windmill <input type="checkbox"/> Fossil Fuel <input type="checkbox"/> Other (describe): _____ | | |
| Provide the following if the well's power supply is electric: | | |
| Power Company Name <i>United</i> | Power Company Service No. <i>1546692</i> | Meter Manufacturer <i>Elter</i> |
| | | Manufacturer's Serial No. <i>18318991</i> |
| Power Company Meter Reading on Date of Test (including all rotating and leading zeroes): <i>02578</i> | Multiplier <i>1</i> | Number of Rotating Digits: <i>5</i> |
| Uses on power company meter: | | |
| Does the same Power Company Meter serve other devices, including other wells/pumps? If yes, describe system. | | |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Provides power to both Greatrack North alluvial wells</i> | | |

| INSTALLED TFM INFORMATION | | | | |
|--|-----------------------|---|---|----------------------------|
| Manufacturer | <u>McCrometer</u> | Model No. | — | |
| Sensor/Meter | Serial No. | Reading on Test Date | Meter GPS Coordinates (if not same as wall coordinates) NAD83 UTM Zone 12/13N | |
| Register | <u>Mx05-0490</u> | <u>1521940</u> | Northing: | |
| Meter Type | Meter Size | Multiplier | No. of recording digits | |
| <u>Magnetic</u> | <u>3"</u> | <u>1</u> | <u>7</u> | |
| Meter Units | | | | |
| <input checked="" type="checkbox"/> Gallons <input type="checkbox"/> Acre Feet <input type="checkbox"/> Cubic Feet <input type="checkbox"/> Other, describe: | | | | |
| Meter Orientation | | Diameters of Straight Pipe | | Diameter of Discharge Pipe |
| <input checked="" type="checkbox"/> Horizontal | | Upstream | Downstream | ID |
| <input type="checkbox"/> Vertical | | <u>6</u> | <u>6</u> | <u>2.86"</u> |
| OD <u>3.50"</u> | | | | |
| Is the meter installed to manufacturer's specifications? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, explain: <u>no enough straight run upstream</u> | | | | |
| TEST METER INFORMATION | | | | |
| Test Meter Manufacturer: | | Test Meter Serial Number: | | Date of Last Calibration: |
| <u>SIEMENS</u> | | <u>019516</u> | | <u>9/11/2014</u> |
| Meter Orientation | Pipe Wall Thickness | Diameters of Straight Pipe | | Diameter of Discharge Pipe |
| <input checked="" type="checkbox"/> Horizontal | | Upstream | Downstream | ID |
| <input type="checkbox"/> Vertical | <u>0.32"</u> | <u>4</u> | <u>4</u> | <u>2.86"</u> |
| OD <u>3.50"</u> | | | | |
| Verification of Installed Meter (if more than one meter tested for same discharge, show all tests. Use second sheet if necessary): | | | | |
| Date of Test: | Time of Test (Begin): | Length of time pump has been running prior to Tester's arrival: | | |
| <u>9/4/2015</u> | <u>1:30 pm</u> | <u>1:30</u> (HH:MM) | | |
| Test Meter Calculations (Show All Work) | | | Installed Meter Calculations (Show All Work) | |
| Collins Gauge: GPM Factor: _____ Stop Clamp Settings: _____ Ultrasonic Transducer Space Settings: <u>0.41"</u> | | | start: <u>1521940</u> gal x 100 stop: <u>1521963</u> gal x 100 $\Delta V = 2300 \text{ gal}$ $\Delta t = 15 \text{ min}$ $\frac{\Delta V}{\Delta t} = \frac{2300 \text{ gal}}{15 \text{ min}} = 153.33 \text{ gpm}$ | |
| start: <u>46.77</u> kgal stop: <u>49.26</u> kgal $\Delta V = 2490 \text{ gal}$ $\Delta t = 15 \text{ min}$ $\frac{\Delta V}{\Delta t} = \frac{2490 \text{ gal}}{15 \text{ min}} = 166 \text{ gpm}$ | | | Existing K-factor _____ Adjusted K-factor _____ Flow rate with Collins tube removed: _____ | |
| (Show Q to the nearest 0.00 GPM) Avg QT: <u>166.00</u> | | | (Show Q to the nearest 0.00 GPM) Avg QI: <u>153.33</u> | |
| Correction Factor = $\frac{\text{AVG QT}}{\text{AVG QI}} = \frac{166.00}{153.33} = 1.083$ Shown to the nearest 0.000 | | | | |

| If Correction Factor is: | Div. 1, Div. 2 and Republican River Correction Factor Policies | Div. 3 Correction Factor Policies |
|--|--|--|
| 0.950 to 1.050 | Test will be valid for a maximum of four years. The installed TFM is in accurate working condition. <i>No Request for Variance is required.</i> No Correction Factor is Applied to determine diversions. | |
| 0.920 to 0.949 OR 1.051 to 1.080 | Test will be valid for a maximum of four years. The Variance Request to Use Correction Factor portion of this Form must be completed and signed by the Owner/User. *Note: A Correction Factor will be applied to determine diversions. | May grant a request for a variance to allow the use of a Correction Factor. Test will be valid for one year from the date of the test. A variance will be allowed for a maximum of three years, after which the TFM must be repaired or replaced AND a new Test conducted. That Test must confirm accuracy within $\pm 5.0\%$. The Variance Request to Use Correction Factor for TFM portion of this Form must be completed and signed by the Owner/User. *Note: A Correction Factor will be applied to determine diversions. |
| 0.900 to 0.919 OR 1.081 to 1.100 | Test will be valid for one year only. No later than one year from the date of this Test the installed TFM must be repaired or replaced AND a new test conducted that confirms an accuracy of within $\pm 5.0\%$. The Variance Request to Use Correction Factor portion of this Form must be completed and signed by the Owner/User. *Note: A Correction Factor will be applied to determine diversions. | Test will be rejected and the installed TFM must be repaired or replaced AND a new Test conducted. The second Test must confirm an accuracy of within $\pm 5.0\%$. If TFM fails test and is re-calibrated (k-factor modified), show failed Test, indicate below k-factor before and after, AND show new test on additional duplicate page (include failed and passed test page 3). |
| <0.900 OR >1.100 | Test will be rejected and the installed TFM must be repaired or replaced AND a new Test conducted. | |
| Uses through this totalizing flow meter: | | |
| Does well have multiple discharges measured through TFM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Check all that apply: <input type="checkbox"/> Open <input checked="" type="checkbox"/> Pressure <input type="checkbox"/> Artesian <input type="checkbox"/> Other | | |
| Use this space to describe all discharges <u>Well discharges to Greentrock North RO plant</u> | | |
| Meter Testing: | | |
| How was the well/meter tested with test equipment (open discharge, pressure, or more than one way)? | | |
| Show information in detailed sketch on next page or as an attachment <u>Meter was tested with a SIEMENS clamp-on ultrasonic test meter.</u> | | |

Detailed Sketch:

Show total system from pump to discharge, other pumps in the same well, and electrical system including other devices on the same meter. Show where test meter and pressure gauge were placed and how system was modified to perform test. Show measurements. In addition to sketch, an attached photograph is recommended.



Detailed description of system under normal operating conditions. (Example: One well pumps to two sprinklers. Each sprinkler has an end gun that operates when the sprinkler is operating.) Include number of irrigated acres.

One well pumps to an RO plant.

Tester Verification

I, the undersigned, state that I am currently a person approved by the State Engineer to conduct well tests pursuant to the Rules Governing the Measurement of Ground Water Diversions as indicated on page 1 of this form. I have determined the installed Totalizing Flow Meter to either be in accurate working condition as defined by the Rules indicated on page 1 of this form OR have advised the Owner/User to complete the Variance Request below of this form.

I understand that "accurate working condition" is determined when the indicated flow through the Installed Meter is within plus or minus 5% of an independent field measurement made using Calibrated Test Equipment. I understand that falsifying the accuracy and/or condition of a Totalizing Flow Meter can subject me to a fine of up to \$500.00.

Signature of Tester: Nathan T Baker Date 9/4/2015

Tester Name, Company, Phone, Email

| | |
|-----------------------------|--|
| Name: <u>Nathan T Baker</u> | Company Name: <u>TZA Water Engineers</u> |
| Phone: <u>303-971-0030</u> | Email: <u>nbaker@tza4water.com</u> |

VARIANCE REQUEST TO ALLOW A CORRECTION FACTOR To be used when calculating use with the installed TFM:

I request a Variance to allow the use of the Correction Factor. I understand that a Variance WILL NOT be issued to allow a Correction Factor for a Totalizing Flow Meter (TFM) if the inaccuracy is due to the TFM or appurtenances being intentionally damaged or modified by the owner and/or user of the well/meter.

I understand that the Correction Factor as computed by the above Qualified Well Tester will be verified by or revised by the Division of Water Resources and that final Correction Factor will be applied to ALL use records until the TFM is repaired/replaced and/or a new test conducted for this Well.

I understand and agree to the required conditions of the variance as indicated below:

Division 1, Division 2 or Republican River Basin (Check only one)

- If Correction Factor is between 0.920 to 0.949 or is between 1.051 to 1.080, the Test will be valid for no more than four years. The Correction Factor will be applied to determine diversions from the well.
- If Correction Factor is between 0.900 to 0.919 or is between 1.081 to 1.100, the Test will be valid one year. No later than one year from the date of this Test, a new Measurement Test must be conducted and the accuracy of the new Test must be within $\pm 5.0\%$. The Correction Factor will be applied to determine diversions from the well. Further, I acknowledge that repair and/or replacement of this Meter and/or portions of the Discharge System is required within that one year AND I agree to make the necessary changes within that time.

Division 3

- If Correction Factor is between 0.920 to 0.949 or 1.051 to 1.080, and Division 3 approves this Variance Request, the Test will be valid for no more than one year. A new variance including new correction factor computed by a Qualified Well Tester shall be required each year thereafter. A variance will only be allowed for TFM for a maximum of three years. After three years the TFM must be repaired or replaced and working within the required $\pm 5\%$. The Correction Factor will be applied to determine diversions from the well.

For Electrically Powered Wells/Pumps, I agree to the release of information pertaining to my Electric Service and Use, including Current Transformer Factor (Ct), Voltage/Potential Transformer Factor (Pt) and Electric Meter Readings, to the Colorado Division of Water Resources by my electric supplier for the purposes of determining or verifying Water Use from the Well/Pump.

The above information is true to the best of my knowledge. I understand that falsifying the accuracy and/or condition of a Totalizing Flow Meter can subject me to a fine of up to \$500.00. If any Variance is requested on my behalf to apply a Correction Factor to my TFM, I agree to such Variance.

I am the Well Owner OR Well User
 Signature of Well Owner/User: Jeff Reinos Date 9/10/15
 Print Name of Well Owner/User: Jeff Reinos

| | | |
|--|--|---|
| Form 3.1 06/15/2014 | S. Platte River – Division 1 970-352-8712 Fax 970-392-1816 810 9 th Street, 2 nd Floor, Greeley, CO 80631 dnr_div1spgwm@state.co.us Republican River – Division 1 970-352-8712 Fax 970-392-1816 810 9 th Street, 2 nd Floor, Greeley, CO 80631 dnr_div1rgwm@state.co.us Arkansas River – Division 2 719-542-3368 Fax 719-544-0800 310 E. Abriendo, Suite B, Pueblo, CO 81004 Rio Grande River – Division 3 719-589-6683 Fax 719-589-6685 P.O. Box 269, 301 Murphy Drive, Alamosa, CO 81101 Designated Basins – Division 8 303-866-3581 Fax 303-866-2223 1313 Sherman St. Rm. 818, Denver, CO 80237 | For Office Use Only |
|  COLORADO Division of Water Resources Department of Natural Resources www.water.state.co.us | | <input type="checkbox"/> Passed <input type="checkbox"/> Failed <input type="checkbox"/> Variance Approved Date of variance _____ |

NOTICE OF TOTALIZING FLOW METER RE-VERIFICATION, INSTALLATION OR REPLACEMENT

Check appropriate box

- To be filed in Compliance with Rule 16.5 of the Rules Governing the Measurement of Tributary Ground Water Diversions in the **Republican River Basin (Complete pages 1-6)**
- To be filed in Compliance with Rules 3.1 of the Amended Rules Governing the Measurement of Tributary Ground Water Diversions in the **Arkansas River Basin (Complete pages 1-5)**
- To be filed in Compliance with Rule 3.1 of the Rules Governing the Measurement of Tributary Ground Water Diversions in the **Rio Grande River Basin (Complete pages 1-5)**
- To be filed in Compliance with the Ground Water Commission Rules Governing **Designated Basins (Complete pages 1-5)**
- To be filed in Compliance with Rule 3.1 of the Rules Governing the Measurement of Tributary Ground Water Diversions in the **South Platte River Basin (Complete pages 1-5)**

Reason for meter verification (Check all that apply):

| | | | | | |
|-------------------------------------|--|---|---|--|-----------------------------------|
| <input checked="" type="checkbox"/> | Re-Verify Previously Verified TFM | The following MUST be provided for new & replaced meters | | | |
| <input type="checkbox"/> | New TFM (No previous meter) | Date New TFM installed: | | | |
| <input type="checkbox"/> | Replacing Previous TFM (also complete area at right) | Date Previous TFM removed: | | | |
| | Previous TFM Serial No.: | Previous TFM Reading (Estimate required if not readable): | | | |
| <input type="checkbox"/> | Change in Measurement Method from: | Hour Meter <input type="checkbox"/> | Slave Meter <input type="checkbox"/> | Power Co Meter <input type="checkbox"/> | Previous Meter SN |
| <input type="checkbox"/> | Register seal replaced due to: | New Seal No. | Old Seal No. | TFM Reading | K-Factor (Test req'd. if changed) |
| <input type="checkbox"/> | Sensor / meter seal replaced due to: | New Seal No. | Old Seal No. | TFM Reading | |

Contact Information:

| | | | | | |
|---|-----------------|------------------|---------------------------------------|-------|-----|
| Well Owner Name <i>Greatrock North Water & Sanitation Dist.</i> | | | User (if not same as well owner) Name | | |
| Mailing Address <i>141 Union Blvd., Ste. 150</i> | | | Mailing Address | | |
| City <i>Lakewood</i> | State <i>CO</i> | Zip <i>80228</i> | City | State | Zip |
| Phone | Email | Phone | Email | | |

Well Information and Location (Provide Permit No. and/or Case or Decree No. if no WDDID exists or is not known)

Visit Aquamap to find well information: <http://water.state.co.us/DataMaps/GISandMaps/AquaMap/Pages/default.aspx>

| WDDID | Permit No. | Water Court Case No. | Location (¼, ¼, Sec., T., R., PM) | Well GPS Coordinates must be in NAD83, UTM Zone 12/13N | |
|---------------|----------------|----------------------|-----------------------------------|--|---------------|
| | | | | Northing | Easting |
| <i>0K9984</i> | <i>67146-F</i> | <i>04CW247</i> | <i>SW, NE, 1, 1S, 65W, 6th</i> | <i>4427104</i> | <i>533324</i> |
| | | | | | |

Power Supply

- Electric Artesian Solar Windmill Fossil Fuel Other (describe):

Provide the following if the well's power supply is electric:

| | | | |
|---|--|-------------------------------------|---|
| Power Company Name <i>United</i> | Power Company Service No. <i>1546692</i> | Meter Manufacturer <i>Elster</i> | Manufacturer's Serial No. <i>18318791</i> |
| Power Company Meter Reading on Date of Test (including all rotating and leading zeroes): <i>02578</i> | Multiplier <i>1</i> | Number of Rotating Digits: <i>5</i> | |

Uses on power company meter:

Does the same Power Company Meter serve other devices, including other wells/pumps? If yes, describe system.

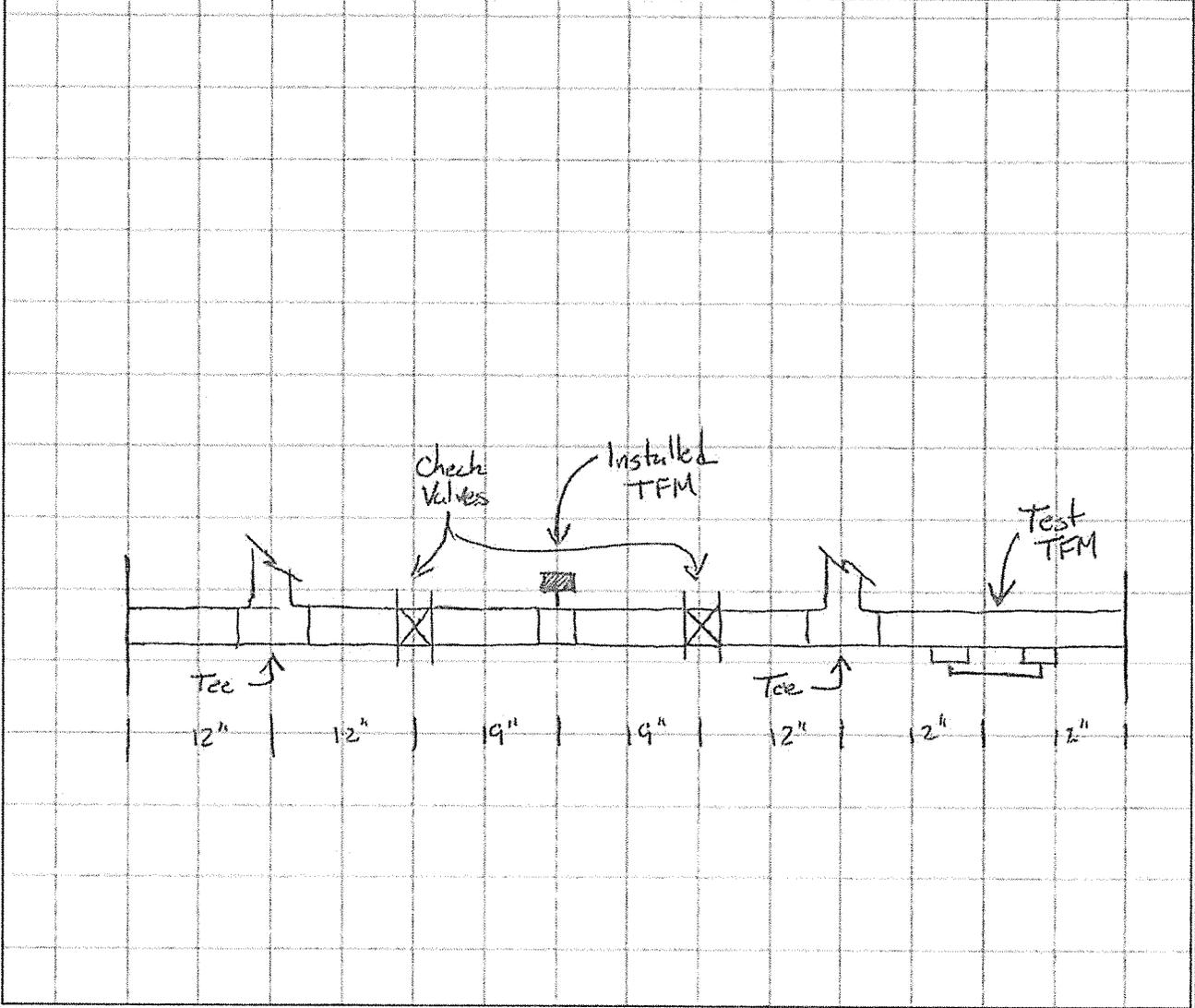
- Yes No *Provides power to both Greatrock North alluvial wells*

| INSTALLED TFM INFORMATION | | | | |
|--|-----------------------|---|--|--|
| Manufacturer | ABB | Model No. | — | |
| Sensor/Meter | Serial No. | Reading on Test Date | | Meter GPS Coordinates (if not same as well coordinates) NAD83 UTM Zone 12/13N |
| | 3K62000003949 | 77656630 | | Northing: |
| Register | | | | Easting: |
| Meter Type | Magnetic | Meter Size | 3" | Multiplier |
| | | | 1 | No. of recording digits |
| 8 | | | | |
| Meter Units | | | | |
| <input checked="" type="checkbox"/> Gallons <input type="checkbox"/> Acre Feet <input type="checkbox"/> Cubic Feet <input type="checkbox"/> Other, describe: | | | | |
| Meter Orientation | | Diameters of Straight Pipe | | Diameter of Discharge Pipe |
| <input checked="" type="checkbox"/> Horizontal | | Upstream | Downstream | ID |
| <input type="checkbox"/> Vertical | | 6 | 6 | 2.96" |
| | | | | OD |
| | | | | 3.5" |
| Is the meter installed to manufacturer's specifications? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, explain: | | | | |
| TEST METER INFORMATION | | | | |
| Test Meter Manufacturer: | | Test Meter Serial Number: | | Date of Last Calibration: |
| SIEMENS | | U19596 | | 9/11/2014 |
| Meter Orientation | Pipe Wall Thickness | Diameters of Straight Pipe | | Diameter of Discharge Pipe |
| <input checked="" type="checkbox"/> Horizontal | 0.32" | Upstream | Downstream | ID |
| <input type="checkbox"/> Vertical | | 4 | 4 | 2.86" |
| | | | | OD |
| | | | | 3.50" |
| Verification of Installed Meter (if more than one meter tested for same discharge, show all tests. Use second sheet if necessary): | | | | |
| Date of Test: | Time of Test (Begin): | Length of time pump has been running prior to Tester's arrival: | | |
| 9/4/2015 | 12:00 pm | 0 : 15 | | |
| | | (HH:MM) | | |
| Test Meter Calculations (Show All Work) | | | Installed Meter Calculations (Show All Work) | |
| Collins Gauge: GPM Factor: _____ Stop Clamp Settings: _____ | | | start: 77656630 gal stop: 77658890 gal $\Delta V = 2260 \text{ gal}$ $\Delta t = 20 \text{ min}$ $\frac{\Delta V}{\Delta t} = \frac{2260 \text{ gal}}{20 \text{ min}} = 113 \text{ gpm}$ | |
| Ultrasonic Transducer Space Settings: 0.41" | | | | |
| start: 43.96 kgal stop: 46.19 kgal $\Delta V = 2230 \text{ gal}$ $\Delta t = 20 \text{ min}$ $\frac{\Delta V}{\Delta t} = \frac{2230 \text{ gal}}{20 \text{ min}} = 111.5 \text{ gpm}$ | | | | |
| | | | | |
| Existing K-factor _____ | | | Adjusted K-factor _____ | |
| Flow rate with Collins tube removed: | | | | |
| (Show Q to the nearest 0.00 GPM) Avg QT: 111.50 | | | (Show Q to the nearest 0.00 GPM) Avg QI: 113.00 | |
| Correction Factor = $\frac{\text{AVG QT}}{\text{AVG QI}} = \frac{111.50}{113.00} = 0.987$ Shown to the nearest 0.000 | | | | |

| If Correction Factor is: | Div. 1, Div. 2 and Republican River Correction Factor Policies | Div. 3 Correction Factor Policies |
|--|--|---|
| 0.950 to 1.050 | <p>Test will be valid for a maximum of four years. The installed TFM is in accurate working condition. <i>No Request for Variance is required.</i> No Correction Factor is Applied to determine diversions.</p> | |
| 0.920 to 0.949 OR 1.051 to 1.080 | <p>Test will be valid for a maximum of four years.</p> <p>The Variance Request to Use Correction Factor portion of this Form must be completed and signed by the Owner/User.</p> <p>*Note: A Correction Factor will be applied to determine diversions.</p> | <p>May grant a request for a variance to allow the use of a Correction Factor.</p> <p>Test will be valid for one year from the date of the test. A variance will be allowed for a maximum of three years, after which the TFM must be repaired or replaced AND a new Test conducted. That Test must confirm accuracy within $\pm 5.0\%$.</p> <p>The Variance Request to Use Correction Factor for TFM portion of this Form must be completed and signed by the Owner/User.</p> <p>*Note: A Correction Factor will be applied to determine diversions.</p> |
| 0.900 to 0.919 OR 1.081 to 1.100 | <p>Test will be valid for one year only. No later than one year from the date of this Test the installed TFM must be repaired or replaced AND a new test conducted that confirms an accuracy of within $\pm 5.0\%$.</p> <p>The Variance Request to Use Correction Factor portion of this Form must be completed and signed by the Owner/User.</p> <p>*Note: A Correction Factor will be applied to determine diversions.</p> | <p>Test will be rejected and the installed TFM must be repaired or replaced AND a new Test conducted. The second Test must confirm an accuracy of within $\pm 5.0\%$.</p> <p>If TFM fails test and is re-calibrated (k-factor modified), show failed Test, indicate below k-factor before and after, AND show new test on additional duplicate page (include failed and passed test page 3).</p> |
| <0.900 OR >1.100 | Test will be rejected and the installed TFM must be repaired or replaced AND a new Test conducted. | |
| Uses through this totalizing flow meter: | | |
| <p>Does well have multiple discharges measured through TFM? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Check all that apply: <input type="checkbox"/> Open <input checked="" type="checkbox"/> Pressure <input type="checkbox"/> Artesian <input type="checkbox"/> Other</p> | | |
| <p>Use this space to describe all discharges <u>Well discharges to Greatrock North RO plant.</u></p> | | |
| Meter Testing: | | |
| <p>How was the well/meter tested with test equipment (open discharge, pressure, or more than one way)?</p> <p>Show information in detailed sketch on next page or as an attachment <u>Meter was tested with a SIEMENS ultrasonic meter.</u></p> | | |

Detailed Sketch:

Show total system from pump to discharge, other pumps in the same well, and electrical system including other devices on the same meter. Show where test meter and pressure gauge were placed and how system was modified to perform test. Show measurements. In addition to sketch, an attached photograph is recommended.



Detailed description of system under normal operating conditions. (Example: One well pumps to two sprinklers. Each sprinkler has an end gun that operates when the sprinkler is operating.) Include number of irrigated acres.

One well pumps to an RO plant.

Tester Verification

I, the undersigned, state that I am currently a person approved by the State Engineer to conduct well tests pursuant to the Rules Governing the Measurement of Ground Water Diversions as indicated on page 1 of this form. I have determined the installed Totalizing Flow Meter to either be in accurate working condition as defined by the Rules indicated on page 1 of this form OR have advised the Owner/User to complete the Variance Request below of this form.

I understand that "accurate working condition" is determined when the indicated flow through the Installed Meter is within plus or minus 5% of an independent field measurement made using Calibrated Test Equipment. I understand that falsifying the accuracy and/or condition of a Totalizing Flow Meter can subject me to a fine of up to \$500.00.

Signature of Tester: Nathan T Baker Date 9/4/2015

Tester Name, Company, Phone, Email

| | |
|-----------------------------|--|
| Name: <u>Nathan T Baker</u> | Company Name: <u>TZA Water Engineers</u> |
| Phone: <u>303-971-0030</u> | Email: <u>nbaker@tza4water.com</u> |

VARIANCE REQUEST TO ALLOW A CORRECTION FACTOR To be used when calculating use with the installed TFM:

I request a Variance to allow the use of the Correction Factor. I understand that a Variance WILL NOT be issued to allow a Correction Factor for a Totalizing Flow Meter (TFM) if the inaccuracy is due to the TFM or appurtenances being intentionally damaged or modified by the owner and/or user of the well/meter.

I understand that the Correction Factor as computed by the above Qualified Well Tester will be verified by or revised by the Division of Water Resources and that final Correction Factor will be applied to ALL use records until the TFM is repaired/replaced and/or a new test conducted for this Well.

I understand and agree to the required conditions of the variance as indicated below:

Division 1, Division 2 or Republican River Basin (Check only one)

- If Correction Factor is between 0.920 to 0.949 or is between 1.051 to 1.080, the Test will be valid for no more than four years. The Correction Factor will be applied to determine diversions from the well.
- If Correction Factor is between 0.900 to 0.919 or is between 1.081 to 1.100, the Test will be valid one year. No later than one year from the date of this Test, a new Measurement Test must be conducted and the accuracy of the new Test must be within ±5.0%. The Correction Factor will be applied to determine diversions from the well. Further, I acknowledge that repair and/or replacement of this Meter and/or portions of the Discharge System is required within that one year AND I agree to make the necessary changes within that time.

Division 3

- If Correction Factor is between 0.920 to 0.949 or 1.051 to 1.080, and Division 3 approves this Variance Request, the Test will be valid for no more than one year. A new variance including new correction factor computed by a Qualified Well Tester shall be required each year thereafter. A variance will only be allowed for TFM for a maximum of three years. After three years the TFM must be repaired or replaced and working within the required ± 5%. The Correction Factor will be applied to determine diversions from the well.

For Electrically Powered Wells/Pumps, I agree to the release of information pertaining to my Electric Service and Use, including Current Transformer Factor (Ct), Voltage/Potential Transformer Factor (Pt) and Electric Meter Readings, to the Colorado Division of Water Resources by my electric supplier for the purposes of determining or verifying Water Use from the Well/Pump.

The above information is true to the best of my knowledge. I understand that falsifying the accuracy and/or condition of a Totalizing Flow Meter can subject me to a fine of up to \$500.00. If any Variance is requested on my behalf to apply a Correction Factor to my TFM, I agree to such Variance.

I am the Well Owner OR Well User

Signature of Well Owner/User: Jeff Raab Date: 9/18/15
 Print Name of Well Owner/User: JEFF RAAB

MEMORANDUM

To: Greatrock North Water and Sanitation District
From: TZA Water Engineers
Date: October 26, 2015
Re: Water Quality and Hardness Results

Water Quality and Hardness – Below are tables of water quality data from a series of sampling events:

| Month | RO Permeate | Unfiltered UKA Water | Unfiltered ALV Wells |
|----------------------|-------------|----------------------|----------------------|
| October (10/25/15) | 25% | 36% | 39% |
| September (09/20/15) | 17% | 34% | 49% |
| August (08/24/15) | 10% | 33% | 57% |
| July (07/19/15) | 17% | 35% | 48% |
| June (06/28/15) | 23% | 37% | 40% |
| May (05/25/15) | 39% | 42% | 19% |
| April (04/27/15) | 37% | 39% | 24% |
| March (03/22/15) | 41% | 40% | 19% |

| Total Dissolved Solids (TDS) | | | |
|------------------------------|------------|----------|----------|
| Date | BECR Tanks | RHF Tank | GN Tank |
| 10/14/15 | 414 mg/l | 406 mg/l | 385 mg/l |
| 09/09/15 | 470 mg/l | 471 mg/l | 495 mg/l |
| 08/19/15 | 469 mg/l | 500 mg/l | 482 mg/l |
| 07/10/15 | 417 mg/l | 449 mg/l | 468 mg/l |
| 06/11/15 | 369 mg/l | 350 mg/l | 341 mg/l |
| 05/11/15 | 401 mg/l | 347 mg/l | 366 mg/l |
| 04/13/15 | 386 mg/l | 326 mg/l | 322 mg/l |
| March 2015 | 274 mg/l | 324 mg/l | 302 mg/l |
| 02/02/15 | 350 mg/l | 394 mg/l | 383 mg/l |
| 01/14/15 | 350 mg/l | 394 mg/l | 417 mg/l |
| 12/03/14 | 417 mg/l | 552 mg/l | 511 mg/l |
| 10/01/14 | 538 mg/l | 603 mg/l | 594 mg/l |
| 07/11/14 | 565 mg/l | 597 mg/l | 599 mg/l |
| 03/05/14 | 586 mg/l | 543 mg/l | 566 mg/l |
| 01/08/14 | 553 mg/l | 559 mg/l | 575 mg/l |
| 10/28/13 | 677 mg/l | 643 mg/l | 594 mg/l |

LAMP RYNEARSON COMPANIES



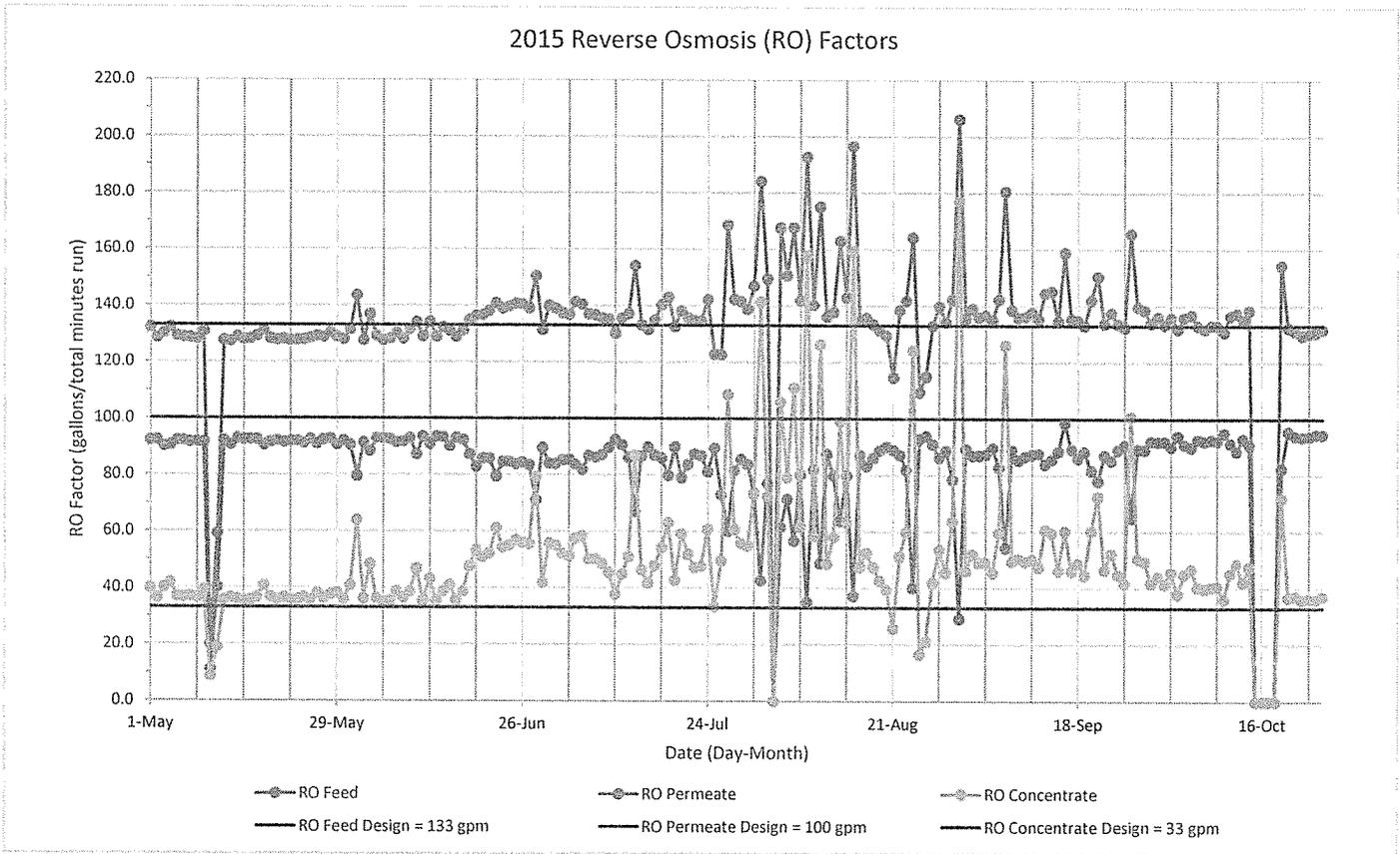
The total hardness results tabulated below reflect a moderately hard to hard water:

| Total Hardness (as CaCO ₃) | | | |
|--|------------|------------|------------|
| Date | BECR Tanks | RHF Tank | GN Tank |
| 10/14/15 | 134.1 mg/l | 117.2 mg/l | 118.7 mg/l |
| 09/09/15 | 152.6 mg/l | 164.3 mg/l | 158.4 mg/l |
| 08/19/15 | 159.1 mg/l | 175.6 mg/l | 173.1 mg/l |
| 07/10/15 | 136.2 mg/l | 158.8 mg/l | 156.5 mg/l |
| 06/11/15 | 92.0 mg/l | 78.0 mg/l | 80.1 mg/l |
| 05/11/15 | 84.8 mg/l | 72.6 mg/l | 73.9 mg/l |
| 04/13/15 | 99.6 mg/l | 67.7 mg/l | 68.6 mg/l |
| March 2015 | 53.7 mg/l | 68.3 mg/l | 59.1 mg/l |
| 02/02/15 | 83.4 mg/l | 113.8 mg/l | 104.6 mg/l |
| 01/14/15 | 105.2 mg/l | 123.0 mg/l | 111.7 mg/l |
| 12/03/14 | 115.3 mg/l | 194.5 mg/l | 169.8 mg/l |
| 10/01/14 | 188.8 mg/l | 231.7 mg/l | 225.6 mg/l |
| 07/11/14 | 221.5 mg/l | 222.7 mg/l | 220.4 mg/l |
| 05/16/14 | 165.2 mg/l | 209.6 mg/l | 198.1 mg/l |

For comparison, hardness values are generally classified as:

| Classification | Mg/l |
|-----------------|-----------|
| Soft | 0 – 60 |
| Moderately hard | 61 – 120 |
| Hard | 121 – 180 |
| Very hard | GTE 181 |

The RO production rates since June 18, 2015 have been very inconsistent with the design for the RO system. See the following figure for a graph of the RO feed, permeate, and concentrate so far this summer versus the design points of the system. Jeff Rabas indicated on September 21, 2015 that Mike Atwood is reviewing the data for a better understanding of the reporting and inconsistencies.



MEMORANDUM

To: Lisa Johnson, District Manager
From: Lauren Goecke, EI
Date: September 23, 2015
Re: Reverse Osmosis Membrane and Antiscalant Research
Greatrock North Water and Sanitation District
Project No.: 0414018.01-002

TZA has researched reverse osmosis (RO) membranes and antiscalants for Greatrock North's water treatment. The goal of this research was to first determine the best membrane for Greatrock North's well water quality to improve the percentage of recovery within the RO process. The second goal of this research was to determine the appropriate antiscalant for Greatrock North's well water quality and the proposed membrane. Membranes and antiscalants are determined by looking at the feed water analysis, the temperature of the feed water, and the feed and product water flows. Membranes are also determined by looking at the RO array.

Greatrock's RO system, shown in Figures 1 and 2, is a 3-2-1 array with each of the six housings containing 4 – 40 inch membranes. Currently they use a DOW FILMTEC BW30-365 (Serial No. F2983892) membrane and dose an AW1730 antiscalant 22.5 mg/L solution reduced to 10% resulting in a 2.3 mg/L dosage at 100 mL/min. Currently the RO system runs 8 hours per day. Prior to August 5, 2015 the RO system ran 6 hours per day. The system design is to have 133 gallons per minute feed the RO, 100 gallons per minute of permeate, and 33 gallons per minute of concentrate. Attached is an analysis of the RO membranes completed by Pure Water Solutions on December 15, 2014.

Greatrock North has received two recommendations for membrane and antiscalant replacements. Recommendation one is a GE AG8040-F400 membrane with GE MS1310 antiscalant. Recommendation two is a Toray TM720D-400 membrane with PWT Spectraguard antiscalant. Earl Young of Worth Hydrochem of Oklahoma City helped provide guidance on all recommendations as Worth is a distributor for each of the products. Both membranes will be an improvement to the current membranes since they increase the surface area from 365 to 400 square feet per membrane. The membranes are going to be equivalent in recovery as Toray and GE both use membrane sheets manufactured by Toray. The GE antiscalant is silica based for silica control, as is the PWT Spectraguard. However, the Spectraguard is a dual polymer blend which makes it more forgiving for operators to use. Similar operations such as Lochbuie and Julesburg have also started using Spectraguard. Table 1 summarizes the verbal cost estimates of each item per a conversation with Earl. Based on a review of the characteristics and cost of each item, we recommend the District use the Toray membrane and the PWT Spectraguard antiscalant for future RO operations. Attached are the projection models for both products.

LAMP RYNEARSON COMPANIES



Table 1: Verbal Cost Estimates of RO Membrane and Antiscalant Recommendations

| Membrane | Cost | Antiscalant | Cost |
|------------------|-------------------------------|------------------|---|
| GE AG8040-F400 | \$849 per membrane + shipping | GE MS1310 | \$1100 per 55 gallon drum + shipping |
| Toray TM720D-400 | \$455 per membrane + shipping | PWT Spectraguard | \$1800 for 2 – 55 gallon drums including shipping, or \$900 per 55 gallon drum + shipping |

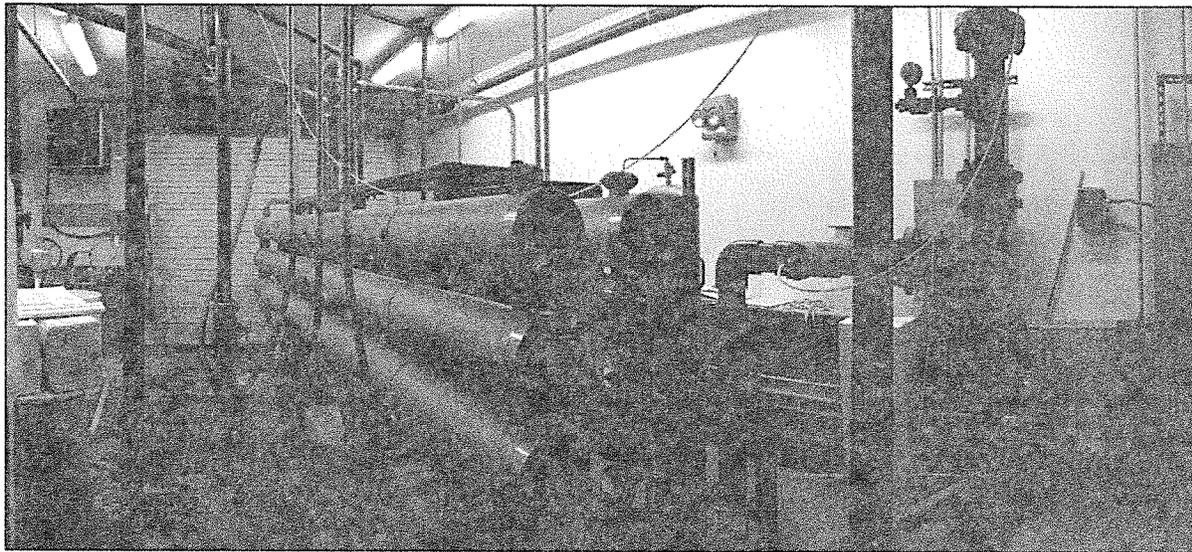


Figure 1: Box Elder Creek Ranch Water Treatment Plant Reverse Osmosis System

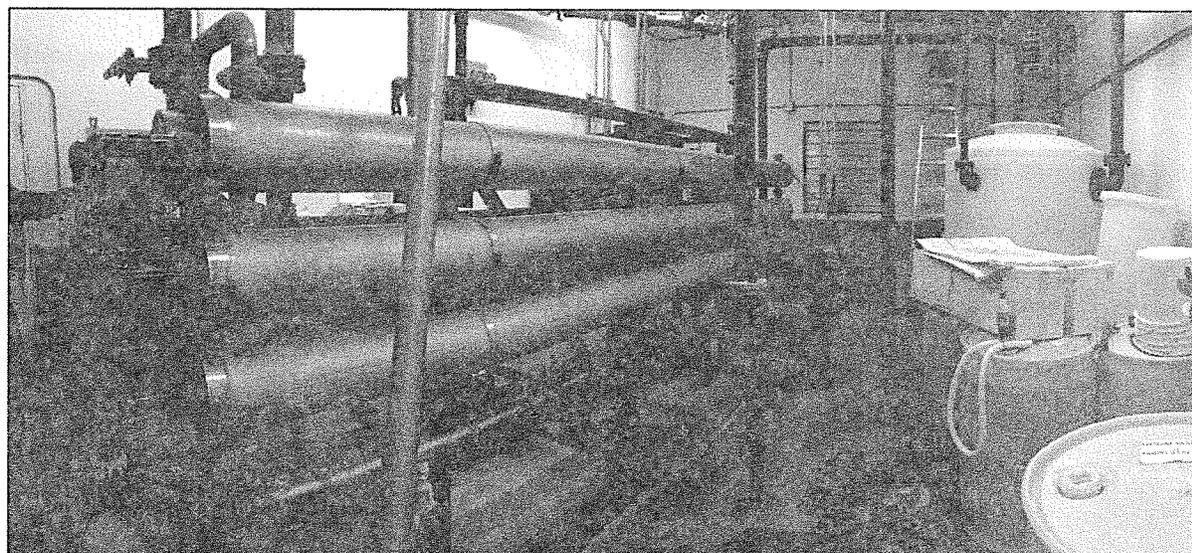


Figure 2: Box Elder Creek Ranch Water Treatment Plant Reverse Osmosis System



GE Power & Water
Water & Process Technologies

WATER ANALYSIS REPORT

4000170442
PURE WATER SOLUTIONS
520 D TOPEKA WAY
Castle Rock, CO
UNITED STATES 80109-3137

Sampled: 25-NOV-2014
Reported: 15-DEC-2014
Field Rep: Fleming, William
91005616

| | FEED | PERMEATE | BRINE |
|--|-----------------|-----------------|-----------------|
| | <u>Y1205020</u> | <u>Y1205021</u> | <u>Y1205022</u> |
| pH | 7.8 | 6.7 | 8.0 |
| Specific Conductance, at 25°C, µmhos | 1100 | 123 | 3600 |
| Alkalinity, "P" as CaCO ₃ , ppm | 0 | 0 | 0 |
| Alkalinity, "M" as CaCO ₃ , ppm | 158 | 16.3 | 553 |
| Sulfur, Total, as SO ₄ , ppm | 149 | 6.4 | 510 |
| Chloride, as Cl, ppm | 156 | 22 | 468 |
| Hardness, Total, as CaCO ₃ , ppm | 295 | 12.0 | 1080 |
| Calcium Hardness, Total, as CaCO ₃ , ppm | 226 | 8.2 | 837 |
| Magnesium Hardness, Total, as CaCO ₃ , ppm | 67 | 3.8 | 239 |
| Barium, Total, as Ba, ppm | 0.08 | 0.005 | 0.28 |
| Strontium, Total, as Sr, ppm | 1.0 | 0.054 | 3.6 |
| Copper, Total, as Cu, ppm | < 0.05 | < 0.002 | < 0.05 |
| Iron, Total, as Fe, ppm | < 0.05 | 0.002 | < 0.05 |
| Sodium, as Na, ppm | 102 | 18.6 | 321 |
| Potassium, as K, ppm | 6.6 | 1.1 | 22 |
| Aluminum, Total, as Al, ppm | < 0.1 | < 0.01 | < 0.1 |



GE Power & Water Water & Process Technologies

WATER ANALYSIS REPORT

4000170442
PURE WATER SOLUTIONS
520 D TOPEKA WAY
Castle Rock, CO
UNITED STATES 80109-3137

Sampled: 25-NOV-2014
Reported: 15-DEC-2014
Field Rep: Fleming, William
91005616

| | FEED | PERMEATE | BRINE |
|--|-----------------|-----------------|-----------------|
| | <u>Y1205020</u> | <u>Y1205021</u> | <u>Y1205022</u> |
| Manganese, Total, as Mn, ppm | < 0.01 | < 0.005 | < 0.01 |
| Nitrate, as NO ₃ , ppm | 17.9 | 6.9 | |
| Phosphate, Total, as PO ₄ , ppm | 0.5 | < 0.4 | |
| Phosphate, Ortho-, as PO ₄ , ppm | < 0.2 | < 0.2 | |
| Silica, Total, as SiO ₂ , ppm | 19.9 | 3.2 | 63 |
| Fluoride, as F, ppm | 0.8 | 0.1 | |
| Carbon, Total Organic, as C, ppm | 2.0 | < 1 | |
| Turbidity, NTU | 0.1 | < 0.1 | |

AG Series

Standard Brackish Water RO Elements

The A-Series, family of proprietary thin-film reverse osmosis membrane elements are characterized by high flux and high sodium chloride rejection. AG Standard Brackish Water Elements are selected when high rejection and operating pressures as low as 200 psi (1,379 kPa) are desired. These elements allow moderate energy savings, and are considered a standard in the industry.

Table 1: Element Specification

| | |
|----------|-------------------------------------|
| Membrane | A-Series, Thin-Film Membrane (TFM*) |
|----------|-------------------------------------|

| Model | Average permeate flow gpd (m ³ /day) ^{1,2} | Average NaCl rejection ^{1,2} | Minimum NaCl rejection ^{1,2} |
|-----------------|--|---------------------------------------|---------------------------------------|
| AG2540TM | 710 (2.7) | 99.5% | 99.0% |
| AG4025T | 1,600 (6.0) | 99.5% | 99.0% |
| AG4026F | 1,600 (6.0) | 99.5% | 99.0% |
| AG4040C | 2,400 (9.1) | 99.5% | 99.0% |
| AG4040FM | 2,200 (8.3) | 99.5% | 99.0% |
| AG4040FM WET | 2,200 (8.3) | 99.5% | 99.0% |
| AG4040TM | 2,200 (8.3) | 99.5% | 99.0% |
| AG8040C | 9,900 (37.3) | 99.5% | 99.0% |
| AG8040F | 9,600 (36.3) | 99.5% | 99.0% |
| AG8040F WET | 9,600 (36.3) | 99.5% | 99.0% |
| AG8040F 400 | 10,500 (39.8) | 99.5% | 99.0% |
| AG8040F 400 WET | 10,500 (39.8) | 99.5% | 99.0% |
| AG8040N | 9,600 (36.3) | 99.2% | 98.5% |
| AG8040N 400 | 10,500 (39.8) | 99.2% | 98.5% |
| AG8340F 400 | 10,500 (39.8) | 99.5% | 99.0% |

¹ Average salt rejection after 24 hours operation. Individual flow rate may vary +25%/-15%.

² Testing conditions: 2,000 ppm NaCl solution at 225 psi (1,551 kPa) operating pressure, 77°F (25°C), pH 7.5 and 15% recovery.

| Model | Membrane area ft ² (m ²) | Outer wrap | Part Number |
|-----------------|---|------------|-------------|
| AG2540TM | 29 (2.6) | Tape | 1206729 |
| AG4025T | 60 (5.6) | Tape | 1206754 |
| AG4026F | 60 (5.6) | Fiberglass | 1206756 |
| AG4040C | 90 (8.4) | Cage | 1206757 |
| AG4040FM | 85 (7.9) | Fiberglass | 3032513 |
| AG4040FM WET | 85 (7.9) | Fiberglass | 3035659 |
| AG4040TM | 85 (7.9) | Tape | 3032514 |
| AG8040C | 380 (35.3) | Cage | 1222546 |
| AG8040F | 365 (33.9) | Fiberglass | 3032515 |
| AG8040F WET | 365 (33.9) | Fiberglass | 3032516 |
| AG8040F 400 | 400 (37.2) | Fiberglass | 3032518 |
| AG8040F 400 WET | 400 (37.2) | Fiberglass | 3032519 |
| AG8040N | 365 (33.9) | Net | 1231784 |
| AG8040N 400 | 400 (37.2) | Net | 1231786 |
| AG8340F 400 | 400 (37.2) | Fiberglass | 3048370 |

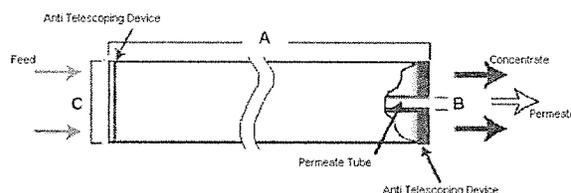


Figure 1: Element Dimensions Diagram - Female

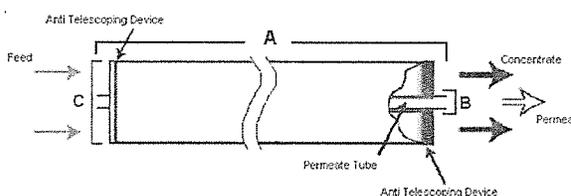


Figure 2: Element Dimensions Diagram - Male



Find a contact near you by visiting www.gewater.com and clicking on "Contact Us".
* Trademark of General Electric Company; may be registered in one or more countries.

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Table 2: Dimensions and Weight

| Model ¹ | Dimensions, inches (cm) | | | Boxed |
|--------------------|-------------------------|-------------------|----------------|-----------------|
| | A | B ² | C ³ | Weight lbs (kg) |
| AG2540TM | 40.0 (101.6) | 0.75 (1.90) OD | 2.4 (6.1) | 5 (2.3) |
| AG4025T | 25.0 (63.5) | 0.625 (1.59) | 3.9 (9.9) | 5 (2.3) |
| AG4026F | 26.0 (66.7) | 0.625 (1.59) | 3.9 (9.9) | 6 (2.7) |
| AG4040C | 40.0 (101.6) | 0.625 (1.59) | 3.9 (9.9) | 8 (3.5) |
| AG4040FM | 40.0 (101.6) | 0.75 (1.90) OD | 3.9 (9.9) | 8 (3.5) |
| AG4040FM WET | 40.0 (101.6) | 0.75 (1.90) OD | 3.9 (9.9) | 8 (3.5) |
| AG4040TM | 40.0 (101.6) | 0.75 (1.90) OD | 3.9 (9.9) | 8 (3.5) |
| AG8040C | 40.0 (101.6) | 1.125 (2.86) | 7.9 (20.1) | 32 (14.5) |
| AG8040F | 40.0 (101.6) | 1.125 (2.86) | 7.9 (20.1) | 32 (14.5) |
| AG8040F WET | 40.0 (101.6) | 1.125 (2.86) | 7.9 (20.1) | 35 (16) |
| AG8040F 400 | 40.0 (101.6) | 1.125 (2.86) | 7.9 (20.1) | 32 (14.5) |
| AG8040F 400 WET | 40.0 (101.6) | 1.125 (2.86) | 7.9 (20.1) | 35 (16) |
| AG8040N | 40.0 (101.6) | 1.125 (2.86) | 7.9 (20.1) | 32 (14.5) |
| AG8040N 400 | 40.0 (101.6) | 1.125 (2.86) | 7.9 (20.1) | 32 (14.5) |
| AG8340F 400 | 40.0 (101.6) | 1.125 (2.86) | 8.3 (21.1) | 42 (19.1) |

¹ These elements are bagged dried, unless specified WET, before shipping.

² Internal diameter unless specified OD (outside diameter).

³ The element diameter (dimension C) is designed for optimum performance in GE pressure vessels. Other pressure vessel dimension and tolerance may result in excessive bypass and loss of capacity.

Table 3: Operating and CIP parameters

| | |
|----------------------------|--|
| Typical Operating Pressure | 200 psi (1,379 kPa) |
| Typical Operating Flux | 10-20GFD (15-35LMH) |
| Maximum Operating Pressure | Tape 450 psi (3,103 kPa) Other outerwrap: 600 psi (4,137 kPa) |
| Maximum Temperature | Continuous operation: 122°F (50°C) Clean-In-Place (CIP): 122°F (50°C) |
| pH Range | Optimum rejection: 7.0-7.5, Continuous operation: 4.0-11.0, Clean-In-Place (CIP): 2.0-11.5 |
| Maximum Pressure Drop | Over an element: 12 psi (83 kPa) Per housing: 50 psi (345 kPa) |
| Chlorine Tolerance | 1,000+ ppm-hours, Dechlorination recommended |
| Feedwater | NTU < 1 SDI < 5 |

Hypersperse™ MS1310

Antiscalant/Antifoulant

- Classified for use in producing potable water (Classified to ANSI/NSF Standard 60)
- Effectively controls scales including silica, calcium carbonate, calcium sulfate, barium sulfate, and strontium sulfate
- May be feed neat or diluted
- Compatible with all of the leading RO membranes
- Includes uniquely effective GE Infrastructure Water & Process Technologies polymer
- Maintains cleaner membrane surfaces by dispersing particulate foulants
- Effective over a wide pH range. Compatible with feedwaters that contain aluminum and iron oxides

Description and Use

Hypersperse™ MS1310 is a highly effective liquid anti-scalant/antifoulant specifically designed for silica scale. Hypersperse MS1310 includes a proprietary GE Infrastructure Water & Process Technologies polymer which is uniquely effective in pretreating silica scale. This is an enhancement to Hypersperse MS1300, which is the only silica inhibitor with extensive, field and pilot study data demonstrating efficacy on membrane systems applications. Data shows effective control of silica up to 240 ppm although applications on variant water sources may establish even higher limits. Use of this product provides longer run times and extended element life resulting in reduced operating and capital costs.

Packaging Information

Hypersperse MS1310 is a liquid material, available in a wide variety of customized containers and deliv-

ery methods. Contact your GE sales representative for details.

Application

For maximum effectiveness, Hypersperse MS1310 should be added prior to the static mixer or cartridge filter housing. It can be fed neat (undiluted) directly from the shipping container or can be diluted (see below).

For potable application, the maximum dosage is 10 mg/L and maximum recommended dilution is 10% with RO permeate or DI water at typical operating temperatures (<30°C (<86°F))

Dosing

Typical dosage range is between 3 and 6 mg/L.

Important Note: Over and under-dosing may cause membrane fouling so please contact your local GE representative to define the optimal feedpoint and dosage rate.

Maximum Dilutions

Maximum dilution is temperature related as shown below.

| <u>Temperature, °C</u> | <u>Maximum Dilution, %</u> |
|------------------------|----------------------------|
| <30°C (86°F) | 10 |
| 30-35°C (86-95°F) | 25 |
| >35°C (95°F) | 50 |

Safety Precautions

A Material Safety Data Sheet containing detailed information about this product is available on request.



High rejection BWRO, enhanced chemical tolerance

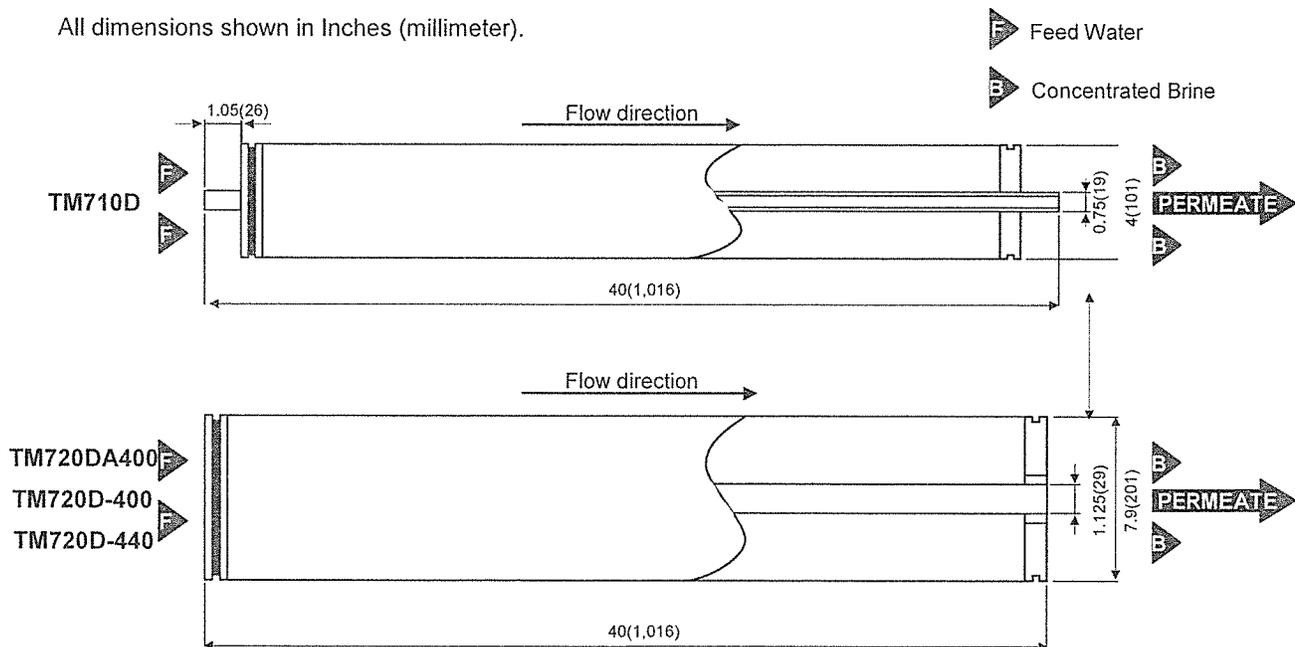
TM700D

| Type | Diameter Inch | Membrane Area ft ² (m ²) | Salt Rejection % | Product Flow Rate gpd(m ³ / d) | Feed Spacer Thickness mil |
|------------|------------------|--|---------------------|--|---------------------------------|
| TM710D | 4" | 87(8) | 99.8 | 2,600(9.8) | 31 |
| TM720DA400 | 8" | 400(37) | 99.8 | 11,000(41.6) | 31 |
| TM720D-400 | 8" | 400(37) | 99.8 | 11,000(41.6) | 34 |
| TM720D-440 | 8" | 440(41) | 99.8 | 12,100(45.8) | 28 |

| | | |
|------------------------------|---|---|
| 1. Membrane Type | | Cross Linked Fully Aromatic Polyamide Composite |
| 2. Test Conditions | Feed Water Pressure Feed Water Temperature Feed Water Concentration Recovery Rate Feed Water pH | 225 psi(1.55MPa) 77° F(25°C) 2,000 mg/l NaCl 15% 7 |
| 3. Minimum Salt Rejection | | 99.65% |
| 4. Minimum Product Flow Rate | | 2,150gpd(8.2m ³ /d)(TM710D) 8,900gpd(33.6m ³ /d)(TM720DA400) 8,900gpd(33.6m ³ /d)(TM720D-400) 9,800gpd(37.0m ³ /d)(TM720D-440) |

Dimensions

All dimensions shown in Inches (millimeter).



Operating Limits

| | |
|---|------------------|
| Maximum Operating Pressure | 600psi (4.1 MPa) |
| Maximum Feed Water Temperature | 113° F (45°C) |
| Maximum Feed Water SDI15 | 5 |
| Feed Water Chlorine Concentration | <0.1ppm |
| Feed Water pH Range, Continuous Operation | 2-11 |
| Feed Water pH Range, Chemical Cleaning | 1-13 |
| Maximum Pressure Drop per Element | 20psi (0.14 MPa) |
| Maximum Pressure Drop per Vessel | 60psi (0.4 MPa) |

Operating Information

1. For the recommended design range, please consult the latest Toray technical bulletin, design guide lines, computer design program, and/ or call an application specialist. If the operating limits given in this Product Information Bulletin are not strictly followed, the Limited Warranty will be null and void.
2. All elements are wet tested, treated with a 1% by weight percent sodium bisulfite storage solution, and then vacuum packed in oxygen barrier bags, or treated with tested feed water solution, and then vacuum packed in oxygen barrier bags with deoxidant inside. To prevent biological growth during short term storage, shipment, or system shutdown, it is recommended that Toray elements be immersed in a protective solution containing 500 - 1,000 ppm of sodium bisulfite (food grade) dissolved in permeate.
3. The presence of free chlorine and other oxidizing agents under certain conditions, such as heavy metals which acts as oxidation catalyst in the feed water will cause unexpected oxidation of the membrane. It is strongly recommended to remove these oxidizing agents contained in feed water before operating RO system.
4. Permeate from the first hour of operation shall be discarded.
5. The customer is fully responsible for the effects of chemicals that are incompatible with the elements. Their use will void the element Limited Warranty.

Notice

1. Toray accepts no responsibility for results obtained by the application of this information or the safety or suitability of Toray's products, either alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each product combination for their own purposes.
2. All data may change without prior notice, due to technical modifications or production changes.

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Fax: +86 10 80485217

System Overview Report

| | | |
|---------------------|--|---------------------|
| Project | TORAYMEM\seanc 239:TZA Water Engineers 100 GPM Project | |
| Case | 1 | TM720D-400 Elements |
| Revision | 0 | 20 deg. C Assumed |
| Feed Water Type | Brackish Well, Note: Auto Balance is ON | |
| Warnings and Errors | Warnings:2, Errors:0. See Important Notes at end /E | |
| Database Info : | Project Database :C:\Users\seanc\Documents\TorayDS2\App_Data\SeanC_DB.TMEU.bak.2014.09.27.sdf.sdf Membrane Database (V.20141) : | |

| | | Overall | Pass 1 |
|------------------------|----------|-------------------|-------------------|
| Raw water TDS | mg/l | 766.6 | 766.6 |
| Feed EC @25C / @20.00C | uS | 1,169.9 / 1,036.7 | 1,169.9 / 1,036.7 |
| Feed Pressure | psi | 0.0 | 167.6 |
| Temperature | deg C | 20.00 | |
| Total DP | psi | 22.18 | 22.18 |
| Brine Pressure | psi | 145.4 | 145.4 |
| Fouling Max | 3.00 yrs | | 0.848 |
| SP % Increase (Max) | 3.00 yrs | | 33.10% |
| Recovery | % | 75.00% | 75.0% |
| Feed Flow | gal/min | 133.3 | 133.3 |
| Product Flow | gal/min | 100.00 | 100.00 |
| Average Flux | gfd | 14.996 | 14.996 |
| Concentrate Flow | gal/min | 33.33 | 33.33 |
| Product TDS | mg/l | 3,002 | 3,002 |
| Concentrate TDS | mg/l | 3,053 | 3,053 |
| Primary HP Pump kW | kilowatt | 12.153 | 12.153 |
| Power Consumption | kWh/m^3 | 0.535 | 0.535 |

| Ions | | Feed | Net Feed | Conc | Product |
|------------------------------|------------------|----------------|----------------|-------------------|---------------|
| Ca | mg/l | 90.50 | 90.50 | 361.4 | 0.200 |
| Mg | mg/l | 16.270 | 16.270 | 64.97 | 0.036 |
| Na | mg/l | 114.6 | 114.6 | 456.8 | 0.521 |
| K | mg/l | 6.600 | 6.600 | 26.25 | 0.0503 |
| Ba | mg/l | 0.08 | 0.08 | 0.319 | 0.0002 |
| Sr | mg/l | 1.000 | 1.000 | 3.993 | 0.0022 |
| NH4 | mg/l | 0.0 | 0.0 | 0.0 | 0.0 |
| Fe | mg/l | 0.05 | 0.05 | 0.200 | 0.0 |
| HCO3 | mg/l | 192.6 | 192.6 | 756.8 | 1.135 |
| CO3 | mg/l | 0.819 | 0.819 | 9.115 | 2.15E-05 |
| CO2 | mg/l | 4.826 | 4.826 | 7.095 | 5.265 |
| Cl | mg/l | 156.0 | 156.0 | 622.5 | 0.500 |
| SO4 | mg/l | 149.0 | 149.0 | 595.4 | 0.212 |
| NO3 | mg/l | 17.900 | 17.900 | 71.15 | 0.149 |
| F | mg/l | 0.800 | 0.800 | 3.181 | 0.0064 |
| Br | mg/l | 0.0 | 0.0 | 0.0 | 0.0 |
| PO4 | mg/l | 0.500 | 0.500 | 1.999 | 0.0003 |
| SiO2 | mg/l | 19.900 | 19.900 | 79.03 | 0.189 |
| B(Boron) | mg/l | 0.0 | 0.0 | 0.0 | 0.0 |
| TDS | mg/l | 766.6 | 766.6 | 3,053 | 3,002 |
| Feed EC @25C / @20.00C | uS | 1,170 / 1,037 | 1,170 / 1,037 | 4,088 / 3,629 | 5.9 / 5.3 |
| pH | pH | 7.800 | 7.800 | 8.185 | 5.531 |
| Osmotic Press (DS1 / Pitzer) | psi | 6.239 / 5.65 | 6.239 / 5.65 | 24.567 / 21.23 | 0.025 / 0.07 |
| LSI / SDSI | | 0.47 / 0.40 | 0.47 / 0.40 | 1.86 / 1.79 | -6.46 / -6.70 |
| CaSO4 / SrSO4 % | % | 3.4% / 2.9% | 3.4% / 2.9% | 27.2% / 16.8% | 0.0% / 0.0% |
| BaSO4 / SiO2 % | % | 339.6% / 16.9% | 339.6% / 16.9% | 2209.1% / 53.0% | |
| Pitzer % Solubility | Calcite/Dolomite | 146% / 246% | 146% / 246% | 3,278% / 124,521% | |
| Pitzer % Solubility | CaSO4/SrSO4 | 4% / 2% | 4% / 2% | 28% / 15% | |

| Stage/Bank Data | Pass1 | Stage 1 | Stage 2 | Stage 3 |
|-------------------|-------|------------|------------|------------|
| Lead Element Type | | TM720D-400 | TM720D-400 | TM720D-400 |
| Last Element Type | | TM720D-400 | TM720D-400 | TM720D-400 |

| | | | | |
|-------------------------|---------|---------|---------|---------|
| Total Elements | 24 | 12 | 8 | 4 |
| Total Vessels | 6 | 3 | 2 | 1 |
| Elements per Vessel | | 4 | 4 | 4 |
| Feed Flow | gal/min | 133.3 | 80.28 | 47.84 |
| Product Flow | gal/min | 53.05 | 32.44 | 14.502 |
| Average Flux | gfd | 15.911 | 14.596 | 13.049 |
| Brine Flow | gal/min | 80.28 | 47.84 | 33.33 |
| Recovery % | % | 39.79 % | 40.41 % | 30.32 % |
| Feed Pressure | psi | 167.6 | 160.4 | 154.2 |
| dP Elements | psi | 7.246 | 6.220 | 8.714 |
| Boost Pressure | psi | 0.0 | 0.0 | 0.0 |
| Piping Loss | psi | 0.0 | 0.0 | 0.0 |
| Net (Boost - dP piping) | psi | 0.0 | 0.0 | 0.0 |
| Brine Pressure | psi | 160.4 | 154.2 | 145.4 |
| Permeate Pressure | psi | 0.0 | 0.0 | 0.0 |
| Feed TDS | mg/l | 766.6 | 1,272 | 2,131 |
| Perm TDS | mg/l | 1,752 | 3,447 | 6,578 |
| Lead Element | Pass1 | Stage 1 | Stage 2 | Stage 3 |
| Feed Flow | gal/min | 44.44 | 40.14 | 47.84 |
| Product Flow | gal/min | 4.551 | 4.210 | 3.809 |
| Product TDS | mg/l | 1,496 | 2,564 | 5,179 |
| Flux | gfd | 16.380 | 15.153 | 13.709 |
| Last Element | Pass1 | Stage 1 | Stage 2 | Stage 3 |
| Product Flow | gal/min | 4.290 | 3.893 | 3.440 |
| Product TDS | mg/l | 2,194 | 4,582 | 8,306 |
| Brine/Product Ratio | ratio | 6.238 | 6.144 | 9.689 |
| Brine Flow | gal/min | 26.76 | 23.92 | 33.33 |
| Net Driving Pressure | psi | 149.2 | 135.2 | 119.2 |
| Beta | | 1.238 | 1.230 | 1.165 |

Chemicals 100%. Disclaimer: These estimated dose rates are provided as a courtesy to Toray DS2 users and are not guaranteed.
No Chemicals Added

Warnings
1. Conc Stiff Davis Index = 1.79 Warning - the Stiff Davis Index (SDSI) is greater than 0. Scale inhibitor required.
2. Conc BaSO4 % Sat'n = 2209.14 Warning - concentrate barium sulfate exceeds saturation.

Errors

Disclaimer :
The program is intended to be used by persons having technical skill, at their own discretion and risk. The projections, obtained with the program, are the expected system performance, based on the average, nominal element-performance and are not automatically guaranteed. Toray shall not be liable for any error or miscalculation in the program.
The obtained results cannot be used to raise any claim for liability or warranty.
It is the users responsibility to make provisions against fouling, scaling and chemical attacks, to account for piping and valve pressure losses, feed pump suction pressure and permeate backpressure. For questions please contact us:

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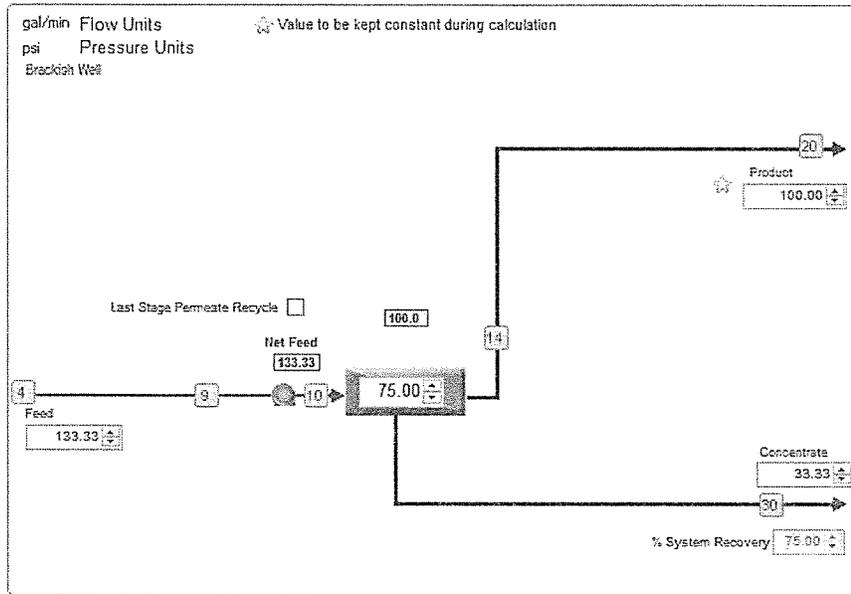
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<http://www.toraywater.com/>

| | |
|-------------|--|
| Date/Time : | 9/17/2015 5:11:07 PM |
| Project | TORAYMEM\seanc 239:TZA Water Engineers 100 GPM Project |

| | |
|---------------------|-----------------------|
| Case : | 1:TM720D-400 Elements |
| Revision : | 0:20 deg. C Assumed |
| User name : | TORAYMEM\seanc |
| Prepared for : | Lauren Goecke |
| Notes : | |
| Membrane Database | |
| Version Number: | 20141 |
| ReleaseDate: | 2/24/2015 |
| UpdateBy: | PFM |
| Toray DS2 version : | 2.0.1.100 |

Flow Diagram:





SpectraGuard™ antiscalant/dispersant is a high performance chemical pretreatment that controls inorganic salts, metal hydroxides, and colloids in RO feedwater. Its unique performance characteristics provide users with more complete control of system feed water chemistry, reducing membrane fouling and minimizing cleaning requirements. SpectraGuard™ is compatible with all membrane types and system components.

Features / Benefits

- Phosphate-free formula reduces negative impact on the environment
- Stable molecular structure maintains integrity in high pH, high temperature and high salinity applications
- Classified for use in membrane systems producing drinking water (ANSI/NSF Standard 60)

Uses

- Control of calcium carbonate, calcium sulfate, barium sulfate, calcium fluoride, silica, and hydroxides of iron and aluminum
- Can be blended with other pretreatment formulations from Professional Water Technologies to reduce chemical dosing equipment

Specifications

| | |
|--------------------|--------------|
| Appearance | Clear liquid |
| pH | 2.0 – 2.5 |
| Density (kg/liter) | 1.00 – 1.10 |

Packaging

Pail: 5 gallon/18.9 liter

Tote: 275 gallon/1,040 liter

Drum: 55 gallon/208 liter

Bulk: available upon request

For special packaging options, please contact PWT or your local distributor.

SpectraGuard™
LIQUID REVERSE OSMOSIS ANTISCALANT

SpectraGuard™

LIQUID REVERSE OSMOSIS ANTISCALANT

General Mixing & Application Instructions for SpectraGuard™

1. Typical dose rates are 2.0 to 6.0 mg/l.
2. Contact Professional Water Technologies™ or your local distributor for custom chemical dosing recommendation.
3. We use ProDose to determine your scaling potential and recommended chemical dosing levels.

ProDose XPRT™ – Scaling Prediction Software

PWT proprietary scaling prediction software, ProDose XPRT™ provides immediate dosage capabilities for our specialty chemicals. The software can create cases to study multiple operating conditions, and directly enter concentrate analyses leading to the optimal selection of PWT product and dosage. ProDose XPRT™ can generate complete and comprehensive reports detailing the scaling projections.

ProDose XPRT™ is available upon request only.

Please contact your PWT representative for more information.

The screenshot displays the ProDose XPRT software interface. At the top, it shows the Professional Water Technologies logo and a navigation bar with options like 'UNITS SELECTED', 'TEMPERATURE', 'LIMIT PERMEATE FLOW/RATE', 'SYSTEM RECOVERY', 'ANTISCALANT SELECTED', 'ANTISCALANT DOSAGE', 'WATER TYPE', 'PROJECT NAME', and 'CASE NUMBER'. The main interface is divided into several sections:

- PROJECT INFORMATION:** Includes fields for 'STREAM EQUIN', 'CURRENT STREAM ID', and 'CURRENT STREAM ID'.
- FEED PARAMETERS:** Shows 'TEMPERATURE' at 77.0, 'PH' at 7.20, and 'TDS'.
- ION CONFIGURATION:** Features radio buttons for 'SHOW FEED' and 'SHOW CONCENTRATE'.
- IONS:** A table listing various ions with their concentrations in mg/L, meq/L, and ppm CaCO3.
- FEED CATIONS:** A table listing cations with their concentrations in mg/L, meq/L, and ppm CaCO3.
- FEED ANIONS:** A table listing anions with their concentrations in mg/L, meq/L, and ppm CaCO3.

| IONS | mg/L | | | ppm CaCO3 | | |
|------|--------|--------|-----------|-----------|-------|-----------|
| | mg/L | meq/L | ppm CaCO3 | mg/L | meq/L | ppm CaCO3 |
| Ca | 97.20 | 4.0503 | 242.73 | | | |
| Mg | 23.45 | 1.9296 | 96.57 | | | |
| Na | 85.39 | 3.7142 | 185.88 | | | |
| K | 4.67 | 0.1194 | 5.93 | | | |
| NH4 | 0.00 | 0.0000 | 0.00 | | | |
| Ba | 0.0000 | 0.0013 | 0.07 | | | |
| Sr | 0.1000 | 0.0023 | 0.11 | | | |
| Fe | 0.34 | 0.0122 | 0.61 | | | |
| Mn | 0.01 | 0.0005 | 0.03 | | | |
| Ni | 1.34 | 0.1490 | 7.46 | | | |

| IONS | mg/L | | | ppm CaCO3 | | |
|------|---------|--------|-----------|-----------|-------|-----------|
| | mg/L | meq/L | ppm CaCO3 | mg/L | meq/L | ppm CaCO3 |
| HCO3 | 284.56 | 4.0642 | 233.42 | | | |
| Cl | 107.51 | 3.0327 | 151.77 | | | |
| SO4 | 120.00 | 2.4984 | 125.00 | | | |
| F | 0.49 | 0.0258 | 1.29 | | | |
| NO3 | 12.34 | 0.1990 | 9.96 | | | |
| PO4 | 0.00 | 0.0000 | 0.00 | | | |
| SiO3 | 21.2100 | 0.3530 | 17.67 | | | |

SAFETY DATA SHEET

1. Identification

Product Name: SpectraGuard™

Synonyms: N/A

Product Use: Reverse Osmosis Pretreatment / Scale Inhibitor

Manufacturer/Supplier: Professional Water Technologies

Address: 1048 La Mirada Court, Vista California, 92081, USA

General Information: 760-639-4400

Transportation Emergency Number:

CHEMTREC: 800-424-9300 (Domestic North America) OR 703-527-3887 (International, collect calls accepted)

2. Hazard Identification

Classification:

| Health | Environmental | Physical |
|--|---------------|----------|
| Skin Irritant – Class 2 Eye Irritant – Class 2B | | |

Pictograms:



Hazard Statements

WARNING

Causes skin irritation.

Causes eye irritation.

Precautionary Statements

Wash exposed areas thoroughly after handling.

Wear protective gloves and eye/face protection.

If on skin: Wash with plenty of soap and water.

If in eyes: Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

Specific treatment see Section 4 (First aid measures)

If skin or eye irritation occurs/persists: Get medical advice/attention.

Wash contaminated clothing before reuse.

3. Composition / Information on Ingredients

| Component | CAS Number | Weight % |
|---------------|------------|----------|
| SpectraGuard™ | 52255-49-9 | 4% |

See Section 8 for Exposure Limits.

4. First Aid Measures

Eye: Eye irritation. Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get immediate medical attention.

Skin: Itching or irritation of the skin. Immediately flush the skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before reuse.

Inhalation: For nasal irritation, headache, and/or nausea remove exposed person from source of exposure to fresh air. If not breathing, clear airway and start cardiopulmonary resuscitation (CPR). Get immediate medical attention.

Ingestion: Do not induce vomiting unless directed by medical personnel. Drink 1 to 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

5. Fire Fighting Measures

Suitable Extinguishing Media: Use media appropriate to primary cause of fire. Use water to cool fire-exposed containers, structures and to protect personnel. Use water to dilute spills and to flush them away from sources of ignition.

Fire Fighting Procedures: Use water spray to cool containers exposed to fire. Minimize exposure. Do not breathe fumes. Contain run-off. A respirator or NIOSH-approved positive pressure suit should be worn if conditions warrant.

Unusual Fire and Explosion Hazards: None known

Combustion Products: None known

6. Accidental Release Measures

Personal Protective Equipment: Protective clothing including chemical splash goggles, Latex, nitrile, or butyl rubber full-length gloves, rubber apron made of nitrile or butyl rubber, and rubber overshoes must be worn during spill clean-ups and deactivation of material. If this material comes into contact with the skin during clean-up operations, immediately remove all contaminated clothing and wash exposed skin with soap and water. See section 4, First Aid Measures, for further information.

Land Spill: Wearing recommended protective clothing and equipment, dike spill with soil, sand, or compatible commercial absorbent. Remove remaining liquid with a pump, vacuum truck, or absorb liquid in sand or commercial

absorbent. Place waste in approved containers for disposal. Dispose waste according to Federal, State, and local regulations.

Water Spill: Wear protective clothing and equipment. Stop flow. Dike contaminated water and remove for disposal and/or treatment. Notify proper authorities and all downstream users if possible. Dispose of Solid Waste according to Federal, State, and Local Regulations.

7. Handling and Storage

Handling: Do not get in eyes, on skin or on clothing. Do not breathe vapors or mists. Keep container closed. Use only with adequate ventilation. Use good hygiene practices. Wash hands before eating, drinking or smoking. Remove contaminated clothing and clean before re-use.

Storage Conditions: Store in tightly closed containers in cool, dry, well-ventilated area away from incompatibles. The maximum storage temperature for this material is 55°C/131°F. The minimum storage temperature for this material is 0°C/32°F.

8. Exposure Controls / Personal Protection

Exposure limits

None of the components have a listed PEL value

Engineering Controls: Use local exhaust ventilation at the point of dust or mist evolution. Have safety shower and eye wash station available where exposure can occur.

Personal Protective Equipment (PPE)

Respiratory Protection: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator use. Use air purifying respirators within use limitations associated with the equipment or else use supplied air-respirators. If air-purifying respirator use is appropriate, use a respirator with organic/acid gas cartridge and dust/mist prefilters. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air supplied respirator. Warning air purifying respirators do not protect workers in oxygen deficient atmospheres.

Eye Protection: Splash goggles and/or face shield (ANSI Z87.1 or approved equivalent).

Skin Protection: Wear impervious protective clothing. Use butyl (or Teflon for limited contact) gloves, boots, and coveralls. Remove gloves after use. Wash hands with soap and water.

9. Physical and Chemical Properties

Appearance: Clear, colorless to light amber liquid

Odor: Mild

Density: Approximately 9 lbs./gallon

Specific Gravity: 1 – 1.15 g/mL

Percentage Volatile: 90 – 96% Water - Max

Evaporation Rate: 1 (same as water)

pH of Solution: 1.5 – 3

Water Solubility: Complete

Boiling Point: 100°C (212°F)

Melting/Freezing Point: 0°C (32°F)

Vapor Pressure: That of water

Vapor Density: That of air

Auto-ignition Temperature: N/A

Flash point: N/A

Flammability: N/A

Flammable Limits:

LEL (Lower Explosive Limits): N/A

UEL (Upper Explosive Limits): N/A

10. Stability and Reactivity

Stability/Incompatibility: Incompatible with strong oxidizing or reducing agents. Stable under normal storage conditions; see Section 7 (Handling and Storage) for specific conditions.

Hazardous Reactions/Decomposition Products: Not a fire or explosions hazard.

11. Toxicological Information

| Acute Toxicity Information |
|---|
| <u>SpectraGuard:</u> Oral (LD50) Rat – > 100,000 mg/kg |

Signs and Symptoms of Overexposure: Eye and nasal irritation, headache, dizziness, nausea, vomiting, weakness, itching or burning of the skin.

Acute Affects: None known

Eye Contact: May cause conjunctival irritation.

Skin Contact: May cause irritation.

Inhalation: May cause irritation.

Medical Conditions Aggravated by Exposure: None known

12. Ecological Information

LC50 (Fathead minnow) = 750 mg/L / 96hr

EC50 (Daphnia) = 743 mg/L / 48hr

13. Disposal Considerations:

Dispose of in accordance with Federal, State, and Local regulations and permits. Refer to state and local requirements for any additional requirements, as these may be different from Federal laws and regulations. Chemical additions, processing, or otherwise altering this material may make management information presented in the SDS incomplete, inaccurate or otherwise inappropriate.

14. Transportation Information

U.S. Department of Transportation (DOT), International Maritime Organization (IMDG) and International Air Transport Association (IATA)

Proper Shipping Name: N/A

Hazard Class: Not regulated

UN/NA Number: None

Packing Group: None

Labels Required: None

15. Regulatory Information

U.S. Federal Regulations

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA):

No reportable quantity (RQ) for this material. If appropriate, immediately report to the National Response Center (800/424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies.

Toxic Substances Control Act (TSCA): All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

Clean Water Act (CWA): SpectraGuard™ is not a hazardous substance under the Clean Water Act. Consult Federal, State and local regulations for specific requirements.

Clean Air Act (CAA): SpectraGuard™ is not a hazardous substance under the Clean Air Act. Consult Federal, State and local regulations for specific requirements.

Superfund Amendments and Reauthorization Act (SARA) Title III Information:

SARA Section 313 Notification (40CFR 372)

This Product Does Not Contain Toxic Chemicals Subject to the Reporting Requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

State Regulations

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

International Regulations

Canadian Environmental Protection Act: All of the components of this product are included on the Canadian Domestic Substances list (DSL).

Canadian Workplace Hazardous Materials Information System (WHMIS):

None

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

European Inventory of Existing Chemicals (EINECS): All of the components of this product are included on EINECS.

EU Classification:

EU Risk (R) and Safety (S) Phrases:

R36/37/38: Irritating to eyes, respiratory system and skin.

S9: Keep container in a well-ventilated place.

S24/25: Avoid contact with skin and eyes.

S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

S45: In case of accident or if you feel unwell, seek medical advice immediately (Section 4)

S53: Avoid exposure - obtain special instructions before use.

16. Other Information

Revision Date: July 9, 2015

Disclaimer: This SDS is provided as an information resource only. This document should not be taken as a warranty for which Professional Water Technologies assumes legal responsibility. The information contained within this SDS was provided by raw materials and other reliable sources. The buyer assumes all responsibility of using and handling the product in accordance with applicable federal, state, and local regulations.



ProDose XPRT

| | | | |
|--------------|-----------------------------------|-------------------|----------------------|
| Program: | ProDose XPRT v:1.0.0.29 | Client: | Worth Hydrochem |
| Project: | Great Rock, CO | Print Date/Time: | 9/17/2015 3:31:09 PM |
| Prepared By: | Miller Truby | Location: | Colorado |
| Comments: | From GE analysis provided by TZA. | Case Number: | 1 |
| File Name: | Great Rock, CO 9.17.15.PWT | Case Description: | |

| Product Selection: | SpectraGuard Liquid | |
|-------------------------|--------------------------|----------------------------|
| Recommended Dose Rate: | 3.79 mg/l Feed | 15.14 mg/l in Concentrate |
| Estimated Usage (100%): | 5.93 lbs/day | 1.082 US ton/yr, 981 kg/yr |
| Comments: | No acid dosing specified | |

System Information Flow Units: Gal/min

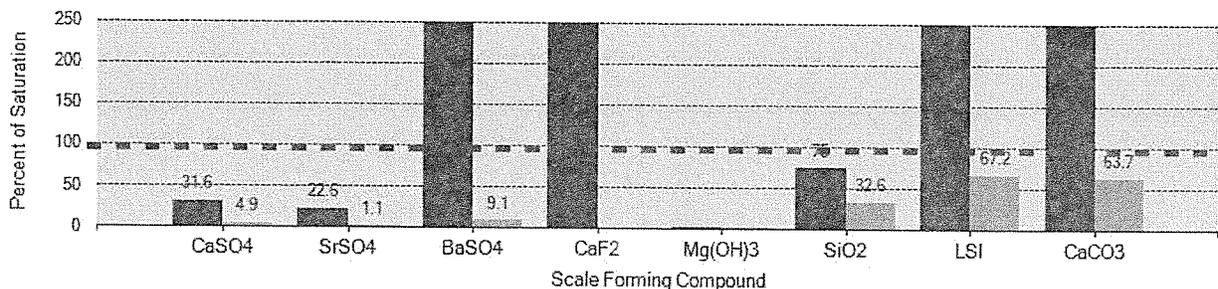
| | | | |
|----------------------|------------|---------------------|-------|
| Feed Water Type: | Well Water | Concentrate Flow: | 33.3 |
| Feed Water Flow: | 133.0 | Recycle Flow: | 0.0 |
| Permeate Flow: | 99.8 | RO Recovery: | 75.0% |
| System Recovery (%): | 75.0% | Membrane Rejection: | 99.7% |
| Feed Temperature: | 65.0 Deg F | | |

| mg/l | Sys Feed | Pretreatment | Net Feed | Permeate | Concentrate |
|------------------|----------|--------------|----------|----------|-------------|
| Ca | 90.50 | 90.50 | 90.50 | 0.17 | 361.50 |
| Mg | 16.27 | 16.27 | 16.27 | 0.03 | 64.99 |
| Na | 102.00 | 102.00 | 102.00 | 0.57 | 406.30 |
| K | 6.60 | 6.60 | 6.60 | 0.04 | 26.29 |
| NH ₄ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Ba | 0.08 | 0.08 | 0.08 | 0.00 | 0.32 |
| Sr | 1.00 | 1.00 | 1.00 | 0.00 | 3.99 |
| Fe | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Al | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HCO ₃ | 192.62 | 192.62 | 192.62 | 4.28 | 745.90 |
| Cl | 124.85 | 124.85 | 124.85 | 0.69 | 497.32 |
| SO ₄ | 149.00 | 149.00 | 149.00 | 0.27 | 595.18 |
| F | 0.80 | 0.80 | 0.80 | 0.00 | 3.19 |
| NO ₃ | 17.90 | 17.90 | 17.90 | 0.10 | 71.30 |
| PO ₄ | 0.50 | 0.50 | 0.50 | 0.00 | 2.00 |
| SiO ₂ | 19.90 | 19.90 | 19.90 | 0.11 | 79.27 |
| pH | 7.80 | 7.80 | 7.80 | 6.19 | 8.36 |

| Saturation Index SI% | Raw Feed | Treated Feed | Concentrate | % of Max w Antiscale |
|----------------------|----------|--------------|-------------|----------------------|
| LSI | 0.4 | 0.4 | 2.0 | 67.2%, MaxLSI = 3.0 |
| CaCO3 | 209.7 | 209.7 | 1,000.0 | 63.7 |
| CaSO4 | 3.9 | 3.9 | 31.6 | 4.9 |
| BaSO4 | 421.3 | 421.3 | 1,000.0 | 9.1 |
| SrSO4 | 2.9 | 2.9 | 22.6 | 1.1 |
| CaF2 | 9.4 | 9.4 | 363.5 | 0.0 |
| SiO2 | 19.2 | 19.2 | 75.0 | 32.62 |
| Fe/Iron | 0.0 | 0.0 | 0.0 | 0.00 |
| CaHPO4 | 1,000.0 | 1,000.0 | 1,000.0 | 0.94 |
| MgOH3 | 0.0 | 0.0 | 0.1 | 0.00 |
| AlOH3 | 0.0 | 0.0 | 0.0 | 0.00 |

| | | |
|---------------------------|----------------------------|----------------------------|
| Product Selection: | SpectraGuard Liquid | |
| Recommended Dose Rate: | 3.79 mg/l Feed | 15.14 mg/l in Concentrate |
| Estimated Usage (100%) | 5.93 lbs/day | 1.082 US ton/yr, 981 kg/yr |
| Comments: | No acid dosing specified | |

Concentrate Solubilities



Cleaner Calculations

| Stage | # Pressure Vessels | Elements Per Vessel | CIP Volume (gal) | Element Diameter (in) | Total # of Elements | C |
|-------|--------------------|---------------------|------------------|-----------------------|---------------------|---|
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |

Total Cleaner Volumes

| Chemical | Product | Weight % | Total CIP Vol (gal) | Lbs/Batch | Lbs/Year |
|----------|---------|----------|---------------------|-----------|----------|
| Alkaline | none | 2 | 1200 | 200 | 801 |
| Acidic | none | 2 | 1200 | 200 | 801 |

Pretreatment Chemical Summary

Runtime % 100

| Chemical | Product | Dose (ppm) | Dilution % | mL/min | Gal/Day | I |
|-------------|---------------------|------------|------------|--------|---------|---|
| Antiscalant | SpectraGuard Liquid | 3.79 | 100 | 1.8462 | 0.70 | |
| Filter Aid | None | 0.00 | 100 | 0.0000 | 0.00 | |
| Biocide | Bio Inhibitor | 0.00 | 100 | 0.0000 | 0.00 | |

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ProDose XPRT

| | | | |
|--------------|----------------------------------|-------------------|----------------------|
| Program: | ProDose XPRT v:1.0.0.29 | Client: | Worth Hydrochem |
| Project: | Great Rock, CO | Print Date/Time: | 9/17/2015 3:31:09 PM |
| Prepared By: | Miller Truby | Location: | Colorado |
| Comments: | From GE analysis provided by TZA | Case Number: | 2 |
| File Name: | Great Rock, CO 9.17.15.PWT | Case Description: | |

| Product Selection: | | SpectraGuard Liquid |
|------------------------|--------------------------|----------------------------|
| Recommended Dose Rate: | 3.00 mg/l Feed | 27.24 mg/l in Concentrate |
| Estimated Usage (100%) | 4.69 lbs/day | 0.856 US ton/yr, 777 kg/yr |
| Comments: | No acid dosing specified | |

System Information Flow Units: Gal/min

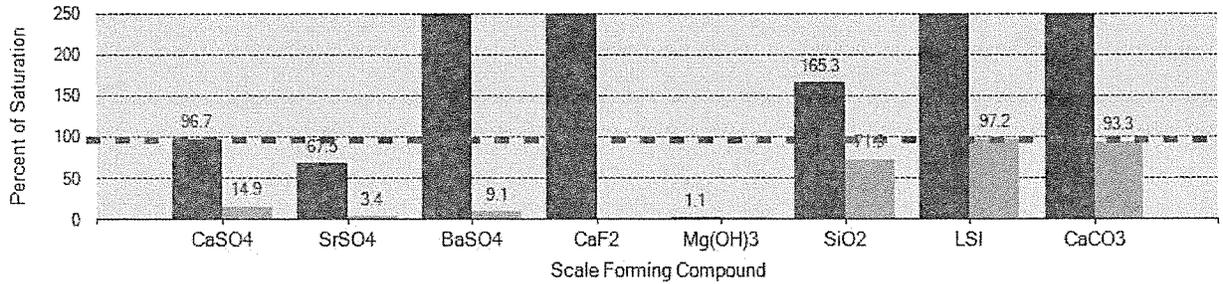
| | | | |
|----------------------|------------|---------------------|-------|
| Feed Water Type: | Well Water | Concentrate Flow: | 14.6 |
| Feed Water Flow: | 133.0 | Recycle Flow: | 0.0 |
| Permeate Flow: | 118.4 | RO Recovery: | 89.0% |
| System Recovery (%): | 89.0% | Membrane Rejection: | 99.7% |
| Feed Temperature: | 65.0 Deg F | | |

| mg/l | Sys Feed | Pretreatment | Net Feed | Permeate | Concentrate |
|------------------|----------|--------------|----------|----------|-------------|
| Ca | 90.50 | 90.50 | 90.50 | 0.22 | 820.93 |
| Mg | 16.27 | 16.27 | 16.27 | 0.04 | 147.59 |
| Na | 102.00 | 102.00 | 102.00 | 0.76 | 921.13 |
| K | 6.60 | 6.60 | 6.60 | 0.05 | 59.60 |
| NH ₄ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Ba | 0.08 | 0.08 | 0.08 | 0.00 | 0.73 |
| Sr | 1.00 | 1.00 | 1.00 | 0.00 | 9.07 |
| Fe | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mn | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Al | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HCO ₃ | 192.62 | 192.62 | 192.62 | 5.74 | 1,622.26 |
| Cl | 124.85 | 124.85 | 124.85 | 0.93 | 1,127.48 |
| SO ₄ | 149.00 | 149.00 | 149.00 | 0.37 | 1,351.59 |
| F | 0.80 | 0.80 | 0.80 | 0.01 | 7.22 |
| NO ₃ | 17.90 | 17.90 | 17.90 | 0.13 | 161.65 |
| PO ₄ | 0.50 | 0.50 | 0.50 | 0.00 | 4.54 |
| SiO ₂ | 19.90 | 19.90 | 19.90 | 0.15 | 179.71 |
| pH | 7.80 | 7.80 | 7.80 | 6.32 | 8.68 |

| Saturation Index SI% | Raw Feed | Treated Feed | Concentrate | % of Max w Antiscale |
|----------------------|----------|--------------|-------------|----------------------|
| LSI | 0.4 | 0.4 | 2.9 | 97.2%, MaxLSI = 3.0 |
| CaCO ₃ | 209.7 | 209.7 | 1,000.0 | 93.3 |
| CaSO ₄ | 3.9 | 3.9 | 96.7 | 14.9 |
| BaSO ₄ | 421.3 | 421.3 | 1,000.0 | 9.1 |
| SrSO ₄ | 2.9 | 2.9 | 67.5 | 3.4 |
| CaF ₂ | 9.4 | 9.4 | 1,000.0 | 0.0 |
| SiO ₂ | 19.2 | 19.2 | 165.3 | 71.87 |
| Fe/Iron | 0.0 | 0.0 | 0.0 | 0.00 |
| CaHPO ₄ | 1,000.0 | 1,000.0 | 1,000.0 | 0.94 |
| MgOH ₃ | 0.0 | 0.0 | 1.1 | 0.00 |
| AlOH ₃ | 0.0 | 0.0 | 0.0 | 0.00 |

| | | |
|---------------------------|----------------------------|----------------------------|
| Product Selection: | SpectraGuard Liquid | |
| Recommended Dose Rate: | 3.00 mg/l Feed | 27.24 mg/l in Concentrate |
| Estimated Usage (100%) | 4.69 lbs/day | 0.856 US ton/yr, 777 kg/yr |
| Comments: | No acid dosing specified | |

Concentrate Solubilities



Cleaner Calculations

| Stage | # Pressure Vessels | Elements Per Vessel | CIP Volume (gal) | Element Diameter (in) | Total # of Elements | C |
|-------|--------------------|---------------------|------------------|-----------------------|---------------------|---|
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |

Total Cleaner Volumes

| Chemical | Product | Weight % | Total CIP Vol (gal) | Lbs/Batch | Lbs/Year |
|----------|---------|----------|---------------------|-----------|----------|
| Alkaline | none | 2 | 1200 | 200 | 801 |
| Acidic | none | 2 | 1200 | 200 | 801 |

Pretreatment Chemical Summary

Runtime % 100

| Chemical | Product | Dose (ppm) | Dilution % | mL/min | Gal/Day | I |
|-------------|---------------------|------------|------------|--------|---------|---|
| Antiscalant | SpectraGuard Liquid | 3.00 | 100 | 1.4614 | 0.56 | |
| Filter Aid | None | 0.00 | 100 | 0.0000 | 0.00 | |
| Biocide | Bio Inhibitor | 0.00 | 100 | 0.0000 | 0.00 | |

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MEMORANDUM

To: Lisa Johnson, District Manager
 From: Lauren Goecke, EI
 Date: October 15, 2015
 Re: Greatrock North Water and Sanitation District – Utility Billings and Energy Costs
 Project No.: 0414018.01-002

TZA is tracking the United Power utility bills and associated water operations on a monthly basis. Below are the monthly comparisons for September each year, as well as a summary of the nine-month periods for 2014 and 2015. The 2015 energy consumption for September is 217% of the 2014 energy consumption for the similar period. The 2015 billings for September are 214% of the 2014 billings for the similar period. These increases were due to the call for augmentation requiring 90 gpm be pumped from Greatrock North’s Laramie Fox Hill wells from August 5 to September 21, 2015. Laramie Fox Hills well number 2 was pumped August 5th and 6th, 2015 and Laramie Fox Hills well number 3 was pumped August 6 to September 21, 2015.

| | September 2014 Billings | | | | September 2015 Billings | | | |
|---------------|-------------------------|----------|---------------|-------------------|-------------------------|----------|---------------|-------------------|
| | On Peak | Off Peak | Total KWH | Billing | On Peak | Off Peak | Total KWH | Billing |
| Alluvial | 4,279 | | 4,279 | \$494.39 | 5,913 | | 5,913 | \$677.07 |
| BECR | 2,400 | 8,640 | 11,040 | \$907.97 | 9,640 | 31,840 | 41,480 | \$3,418.91 |
| GN | 1,360 | 7,240 | 8,600 | \$671.67 | 2,800 | 10,120 | 12,920 | \$1,068.56 |
| RHF | 1,440 | 4,160 | 5,600 | \$492.79 | 880 | 2,920 | 3,800 | \$331.06 |
| Totals | | | 29,519 | \$2,566.82 | | | 64,113 | \$5,495.60 |

The 2015 year-to-date energy consumption is 6% more than the 2014 energy consumption for the similar period. The 2015 year-to-date billings are 6% more than the 2014 billings for the similar period.

| | YTD 2014 Billings (9 months) | | | | YTD 2015 Billings (9 months) | | | |
|---------------|------------------------------|----------|----------------|--------------------|------------------------------|----------|----------------|--------------------|
| | On Peak | Off Peak | Total KWH | Billing | On Peak | Off Peak | Total KWH | Billing |
| Alluvial | 30,522 | | 30,522 | \$3,556.35 | 30,314 | | 30,314 | \$3,533.10 |
| BECR | 23,960 | 106,480 | 130,440 | \$9,942.73 | 30,080 | 130,120 | 160,200 | \$12,588.16 |
| GN | 13,960 | 56,240 | 70,200 | \$5,711.15 | 14,120 | 56,880 | 71,000 | \$5,853.52 |
| RHF | 10,920 | 29,000 | 39,920 | \$3,601.36 | 6,600 | 18,480 | 25,080 | \$2,312.59 |
| Totals | | | 271,082 | \$22,811.59 | | | 286,594 | \$24,287.37 |

LAMP RYNEARSON COMPANIES



RESOLUTION NO. 2015 - 11 - 01

A RESOLUTION OF THE BOARD OF DIRECTORS
OF THE GREATROCK NORTH WATER AND SANITATION DISTRICT
TO ADOPT THE 2016 BUDGET AND APPROPRIATE SUMS OF MONEY

WHEREAS, the Board of Directors of the Greatrock North Water and Sanitation District ("District") has appointed the District Accountant to prepare and submit a proposed 2016 budget to the Board at the proper time; and

WHEREAS, the District Accountant has submitted a proposed budget to this Board on or before October 15, 2015, for its consideration; and

WHEREAS, upon due and proper notice, published or posted in accordance with the law, said proposed budget was open for inspection by the public at a designated place at the office of the District Manager, interested electors of the District were given the opportunity to file or register any objections to the proposed budget, and a public hearing was held on November 3, 2015 at United Power, 500 Cooperative Way, Brighton, Colorado; and

WHEREAS, the budget has been prepared to comply with all terms, limitations and exemptions, including, but not limited to, reserve transfers and expenditure exemptions, under Article X, Section 20 of the Colorado Constitution ("TABOR") and other laws or obligations which are applicable to or binding upon the District; and

WHEREAS, whatever increases may have been made in the expenditures, like increases were added to the revenues or were planned to be expended from reserve fund balances so that the budget remains in balance, as required by law.

WHEREAS, the Board of Directors of the District has made provisions therein for revenues in an amount equal to or greater than the total proposed expenditures as set forth in said budget; and

WHEREAS, it is not only required by law, but also necessary to appropriate the revenues provided in the budget to and for the purposes described below, as more fully set forth in the budget, including any inter-fund transfers listed therein, so as not to impair the operations of the District.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Greatrock North Water and Sanitation District:

1. That the budget as submitted, amended, and summarized by fund, hereby is approved and adopted as the budget of the Greatrock North Water and Sanitation District for the 2016 fiscal year.

2. That the budget, as hereby approved and adopted, shall be certified by the Secretary of the District to all appropriate agencies and filed in accordance with applicable law, and is made a part of the public records of the District.

3. That the sums set forth as the total expenditures of each fund in the budget attached hereto as **EXHIBIT A** and incorporated herein by reference are hereby appropriated from the revenues of each fund, within each fund, for the purposes stated.

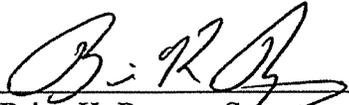
ADOPTED this 3rd day of November, 2015.

GREATROCK NORTH WATER AND
SANITATION DISTRICT, a quasi-
municipal corporation and political
subdivision of the State of Colorado



President

ATTEST:



Brian K. Rogers, Secretary

(SEAL)

EXHIBIT A
(Budget)

CERTIFICATION:

I, Brian K. Rogers, hereby certify that I am the duly appointed Secretary of the Greatrock North Water and Sanitation District, and that the foregoing is a true and correct copy of the budget for the budget year 2016, duly adopted at a meeting of the Board of Directors of the Greatrock North Water and Sanitation District held on November 3, 2015.

By:  _____
Secretary

RESOLUTION NO. 2015 - 11 - 07

A RESOLUTION OF THE BOARD OF DIRECTORS
OF THE GREATROCK NORTH WATER AND SANITATION DISTRICT
TO SET MILL LEVIES

WHEREAS, the Board of Directors of the Greatrock North Water and Sanitation District ("District") has adopted the 2016 annual budget in accordance with the Local Government Budget Law on November 3, 2015; and

WHEREAS, the adopted budget is attached to the Resolution of the Board of Directors to Adopt the 2016 Budget and Appropriate Sums of Money, and such budget is incorporated herein by this reference; and

WHEREAS, the amount of money necessary to balance the budget for general fund expenses from property tax revenue is identified in the budget; and

WHEREAS, the amount of money necessary to balance the budget for debt service fund expenses from property tax revenue is identified in the budget; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Greatrock North Water and Sanitation District:

1. That for the purposes of meeting all general fund expenses of the District during the 2016 budget year, the District determined to levy mills upon each dollar of the total valuation for assessment of all taxable property within the District, as set forth in the budget, to raise the required revenue.

2. That for the purposes of meeting all debt service fund expenses of the District during the 2016 budget year, the District determined to levy mills upon each dollar of the total valuation for assessment of all taxable property within the District, as set forth in the budget, to raise the required revenue.

3. That the District Accountant of the District is hereby authorized and directed to immediately certify to the Board of County Commissioners of Adams County, Colorado, the mill levies for the District as set forth in the District's Certification of Tax Levies (attached hereto as **EXHIBIT A** and incorporated herein by reference), recalculated as needed upon receipt of the final certification of valuation from the County Assessor in order to comply with any applicable revenue and other budgetary limits.

[Signatures on Following Page]

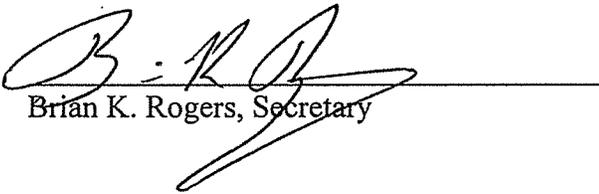
ADOPTED this 3rd day of November, 2015.

GREATROCK NORTH WATER AND
SANITATION DISTRICT, a quasi-
municipal corporation and political
subdivision of the State of Colorado



Robert W. Fleck, President

ATTEST:



Brian K. Rogers, Secretary

(SEAL)

EXHIBIT A
(Certification of Tax Levies)

After Recording, Return to:
WHITE BEAR ANKELE TANAKA & WALDRON
2154 East Commons Avenue, Suite 2000
Centennial, Colorado 80122

Resolution No. 2015-11-04

**RESOLUTION
OF THE
BOARD OF DIRECTORS
OF THE
GREATROCK NORTH WATER AND SANITATION DISTRICT**

**CONCERNING THE IMPOSITION OF VARIOUS FEES, RATES, PENALTIES AND
CHARGES FOR WATER SERVICES AND FACILITIES**

WHEREAS, the Greatrock North Water and Sanitation District (the "**District**") was formed pursuant to §§ 32-1-101, *et seq.*, C.R.S., as amended (the "**Special District Act**"), by order of the District Court for Adams County, Colorado, and after approval of the District's eligible electors at an election; and

WHEREAS, pursuant to § 32-1-1001(1)(h), C.R.S., the Board of Directors of the District (the "**Board**") shall have the management, control and supervision of all the business and affairs of the District; and

WHEREAS, the Board has determined it to be in the best interests of the District, and the property owners, taxpayers, and residents of the District, to acquire, construct, operate and maintain certain amenities and facilities benefitting property and inhabitants within the District, which amenities and facilities generally include water improvements, facilities, appurtenances and rights-of-way (collectively, the "**Facilities**"); and

WHEREAS, the Board has determined it to be in the best interests of the District, and the property owners, taxpayers, and residents of the District, to provide certain water services to property and inhabitants within and without the boundaries of the District (collectively, the "**Services**"); and

WHEREAS, pursuant to § 32-1-1001(1)(j)(I), C.R.S., the District is authorized to fix and impose fees, rates, tolls, penalties and charges for services or facilities furnished by the District which, until such fees, rates, tolls, penalties and charges are paid, shall constitute a perpetual lien on and against the property served; and

WHEREAS, the District incurs certain direct and indirect costs associated with the acquisition, construction, installation, repair, replacement, improvement, reconstruction operation and maintenance of the Facilities, as necessary, inclusive of the costs of utilities and capital replacement costs (collectively, the "**Facility Costs**") in order that the Facilities may be properly provided and maintained; and

WHEREAS, the District incurs certain direct and indirect costs associated with the provision of the Services in order that the Services may be properly provided, the property within

and without the District maintained, and that the health, safety and welfare of the District, its users and its inhabitants may be safeguarded (collectively, the “**Service Costs**”); and

WHEREAS, the establishment and continuation of fair and equitable fees and charges (collectively, the “**Fees and Charges**”) to provide a source of funding to pay for the Facility Costs and the Service Costs, (collectively, the “**Costs**”), which Costs are generally attributable to the persons and/or properties subject to such Fees and Charges, is necessary to provide for the common good and for the prosperity and general welfare of the District and its inhabitants and for the orderly and uniform administration of the District’s affairs; and

WHEREAS, pursuant to § 32-1-1006(1)(g), C.R.S., the District is empowered to fix and from time to time increase or decrease tap fees; and

WHEREAS, the establishment of a fair and equitable fee (the “**System Development Fee**” or “**Tap Fee**”) to provide a source of funding to pay for the initial capital direct and indirect costs associated with the construction, installation and acquisition of the Facilities (the “**Capital Facilities Costs**”), which Capital Facilities Costs are generally attributable to each Lot and Commercial Lot (defined below), is necessary to provide for the common good and for the prosperity and general welfare of the District, its users and its inhabitants; and

WHEREAS, pursuant to §32-1-1001(2), C.R.S., the Board, as a governing body furnishing domestic water or sanitary sewer services directly to residents and property owners within or outside of the District, may fix or increase fees, rates, tolls, penalties or charges for domestic water or sanitary sewer services only after consideration of the action at a public meeting held at least thirty (30) days after providing notice stating that the action is being considered and stating the date, time and place of the meeting at which the action is being considered; and

WHEREAS, pursuant to § 32-1-1001(2)(a)(IV), C.R.S., on September 29, 2015, the Board provided the required (30) days’ notice by posting the notice on the official website of the Colorado Special District Association, the statewide association of special districts forms pursuant to § 29-1-401, C.R.S., which association posted the notice of a publicly accessible section of its website; and

WHEREAS, the District finds that the Fees and Charges and System Development Fee (as defined below), as set forth in this Resolution, are reasonably related to the overall cost of providing the Facilities and Services and paying the Costs and Capital Facilities Costs, and that imposition thereof is necessary and appropriate; and

WHEREAS, on November 4, 2014, the Board adopted Resolution No. 2014-11-03: Resolution of the Board of Directors of the Greatrock North Water and Sanitation District Amending Rules and Regulations (2012 Issuance) (the “**Prior Fee Resolution**”), and the Board desires to adopt this Resolution to amend and restate the Prior Fee Resolution in its entirety.

NOW, THEREFORE, be it resolved by the Board as follows:

1. DEFINITIONS. Except as otherwise expressly provided or where the context indicates otherwise, the following capitalized terms shall have the respective meanings set forth below:

“**District Boundaries**” means the legal boundaries of the District, as the same are established and amended from time to time pursuant to §§32-1-101, *et seq.*, C.R.S., as well as properties outside of the District’s legal boundaries which receive service from the District, all as more particularly set forth in the map and legal description attached hereto as **Exhibit B** and incorporated herein by this reference.

“**Due Date**” means the date by which the Fees and Charges and System Development Fee are due, which Due Date is reflected on the Schedule of Fees.

“**End User**” means any third-party homeowner or tenant of any homeowner occupying or intending to occupy a Residential Unit. End User specifically excludes a tenant occupying an Apartment Unit.

“**Fee Schedule**” or “**Schedule of Fees and Charges**” means the schedule of fees set forth in **Exhibit A**, attached hereto and incorporated herein by this reference, until and unless otherwise amended and/or repealed.

“**Lot**” means each parcel of land established by a recorded final subdivision plat and which is located within the District Boundaries.

“**Property Owner**” shall include all owners of real property, customers, users, residents, leaseholders and other recipients of District services.

“**Residential Unit**” means each residential dwelling unit (including, without limitation, condominiums, townhomes, and any other attached dwelling unit and detached single family dwelling units) located within the District Boundaries which has been Transferred to an End User.

“**Transfer**” or “**Transferred**” shall include a sale, conveyance or transfer by deed, instrument, writing, lease or any other documents or otherwise by which real property is sold, granted, let, assigned, transferred, exchanged or otherwise vested in a tenant, tenants, purchaser or purchasers.

“**Vacant Lot**” means each parcel of land within the District established by a recorded final subdivision plat, but specifically excluding any parcel upon which one or more Residential Units is situated and specifically excluding any parcel owned by the District.

2. THE FEES AND CHARGES.

a. Service Fees and Charges. The Board has determined, and does hereby determine, that it is in the best interests of the District and its respective residents, users and property owners to impose, and does hereby impose the Fees and Charges set forth in

the Schedule of Fees and Charges to fund the Costs. The Fees and Charges are hereby established and imposed in an amount as set forth by the District from time to time pursuant to an annual "Fee Schedule" and shall constitute the rate in effect until such schedule is amended or repealed. The initial Fee Schedule is set forth in **Exhibit A**, attached hereto and incorporated herein by this reference.

b. Transfer Payment. The Fees shall include a separate payment imposed on transfers of a Residential Unit (the "**Transfer Payment**"). The Transfer Payment shall be imposed on all Transfers of a Residential Unit by an End User. The Transfer Payment shall not apply to any of the following, except to the extent the District determines that such exception is being undertaken for the purpose of improperly avoiding the Fees and Charges:

i. Any Transfer wherein the United States, or any agency or instrumentality thereof, the State of Colorado, any county, city and county, municipality, district or other political subdivisions of this State, is either the grantor or the grantee.

ii. Any Transfer by document, decree or agreement partitioning, terminating or evidencing termination of a joint tenancy, tenancy in common or other co-ownership; however, if additional consideration or value is paid in connection with such partition or termination the Transfer Payment shall apply and be based upon such additional consideration.

iii. Any Transfer of title or change of interest in real property by reason of death, pursuant to a will, the law of descent and distribution, or otherwise.

iv. Any Transfer made and delivered without consideration for the purpose of: confirming, correcting, modifying or supplementing a Transfer previously made; making minor boundary adjustments; removing clouds of title; or granting easements, rights-of-way or licenses.

v. Any decree or order of a court of record quieting, determining or resting title, except for a decree of foreclosure.

vi. Transfers to secure a debt or other obligation, or releases other than by foreclosure, which is security for a debt or other obligation.

vii. Transfers pursuant to a decree or separation of divorce.

c. The Board has determined, and does hereby determine, that the Fees and Charges are reasonably related to the overall cost of providing the Facilities and Services, and is imposed on those who are reasonably likely to benefit from or use the Facilities and Services.

d. The revenues generated by the Fees and Charges will be accounted for separately from other revenues of the District, specifically *ad valorem* property tax revenues, if applicable. The revenue from Fees and Charges will be used solely for the purpose of paying Costs, and, if *ad valorem* property tax revenues are available, may not be used by the District to pay for general administrative costs of the District. This restriction on the use of the Fees and Charges revenue shall be absolute and without qualification.

e. The Board has determined, and does hereby determine, that the Fees and Charges are calculated to defray the cost of funding the Costs and reasonably distribute the burden of defraying the Costs in a manner based on the benefits received by persons paying the fees and using the Facilities and Services.

3. SYSTEM DEVELOPMENT FEE. A one-time System Development Fee is hereby established and imposed upon each Lot within the District Boundaries in the amounts set forth in the Schedule of Fees and Charges.

4. LATE FEES AND INTEREST. Pursuant to § 29-1-1102(3), C.R.S., any Fees and Charges and System Development Fee not paid in full within five (5) days after the scheduled due date will be assessed a late fee in the amount of Fifteen Dollars (\$15.00) or up to five percent (5%) per month, or fraction thereof, not to exceed a total of twenty-five percent (25%) of the amount due. Interest will also accrue on any outstanding Fees and Charges and System Development Fee, exclusive of assessed late fees, penalties, interest and any other costs of collection, specially including, but not limited, to attorney fees, at the rate of 18% per annum, pursuant to § 29-1-1102(7), C.R.S. The District may institute such remedies and collection procedures as authorized under Colorado law, including, but not limited to, foreclosure of its perpetual lien. The defaulting property owner shall pay all fees and costs, specifically including, but not limited to, attorneys' fees and costs and costs associated with the collection of delinquent fees, incurred by the District and/or its consultants in connection with the foregoing.

5. PAYMENT. Payment for all fees, rates, tolls, penalties, charges, interest and attorney fees shall be made by check or equivalent form acceptable to the District, made payable to "Greatrock North Water and Sanitation District" and sent to the address indicated on the Fee Schedule. The District may change the payment address from time to time and such change shall not require an amendment to this Resolution.

6. LIEN. The fees imposed hereunder, together with any and all late fees, interest, penalties and costs of collection, shall, until paid, constitute a statutory, perpetual lien on and against the property served, and any such lien may be foreclosed in the manner provided by the laws of the State of Colorado for the foreclosure of mechanic's liens, pursuant to § 32-1-1001(1)(j)(I), C.R.S. Said lien may be foreclosed at such time as the District, in its sole discretion, may determine. The lien shall be perpetual in nature (as defined by the laws of the State of Colorado) on the property and shall run with the land. This Resolution shall be recorded in the offices of the Clerk and Recorder of Adams County, Colorado.

7. CERTIFICATION OF ACCOUNT TO COUNTY TREASURER. Pursuant to §32-1-1101(1)(e), C.R.S., the Board may elect to certify any delinquent account and late fees satisfying the criteria established therein to the Adams County Treasurer for collection with the District's *ad valorem* property taxes. The certification process may be in addition to or in lieu of any procedures set forth in this Resolution in the Board's sole discretion. The fees for the certification process shall be in accordance with Colorado law and Adams County policy.

8. SEVERABILITY. If any portion of this Resolution is declared by any court of competent jurisdiction to be void or unenforceable, such decision shall not affect the validity of any remaining portion of this Resolution, which shall remain in full force and effect. In addition, in lieu of such void or unenforceable provision, there shall automatically be added as part of this Resolution a provision similar in terms to such illegal, invalid or unenforceable provision so that the resulting reformed provision is legal, valid and enforceable.

9. THE PROPERTY. This Resolution shall apply to all property within the District's boundaries, including, but not limited to, the property set forth in **Exhibit B**, attached hereto and incorporated herein by this reference, and any additional property included into the District after the date of this Resolution.

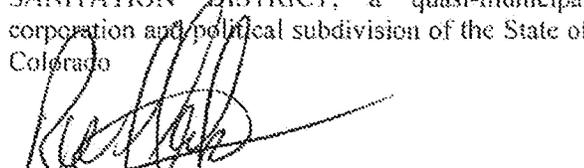
10. REPLACEMENT OF APPENDIX A "SCHEDULE OF FEES AND CHARGES". Appendix A of the Rules and Regulations adopted by the Board shall be replaced in its entirety with the language set forth in **Exhibit A**, attached hereto.

11. EFFECTIVE DATE. This Resolution shall become effective as of January 1, 2016.

[Remainder of Page Intentionally Left Blank. Signature Page to Follow].

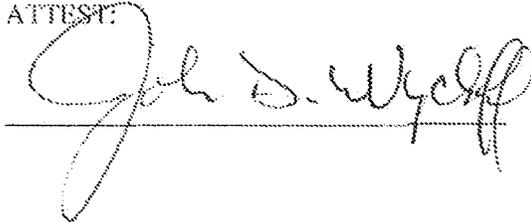
ADOPTED this 3rd day of NOVEMBER 2015.

GREATROCK NORTH WATER AND
SANITATION DISTRICT, a quasi-municipal
corporation and political subdivision of the State of
Colorado



.....
Officer of the District

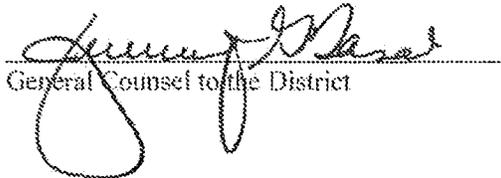
ATTEST:



.....

APPROVED AS TO FORM:

WHITE BEAR ANKELE TANAKA & WALDRON
Attorneys At Law



.....
General Counsel to the District

*Signature page to Resolution Concerning the Imposition of Various Fees and Charges for Water
Services and Facilities*

EXHIBIT A

SCHEDULE OF FEES AND CHARGES

Adopted and Approved
November 3, 2015

SYSTEM DEVELOPMENT FEE \$ 12,300

This fee is a one-time contribution per single-family residential equivalent unit ("EQR") required of new Customers (or existing Customers having change of use) to be used for capital investment in Regional Facilities and the organization of the District. Regional Facilities shall include the wells, treatment (including the water treatment facility and two evaporation ponds), storage, transmission, mechanical and electrical components, instrumentation and control components constructed, installed and/or acquired by the District on or before December 3, 2013. Regional Facilities shall not include site specific infrastructure or facilities or transmission lines extending from the Regional Facilities to a subdivision. The System Development Fee shall be due within five (5) business days of the issuance of a building permit by the County for each lot.

Fees for the following tap sizes will be calculated at the stated EQR values multiplied by the SDF amount stated above:

| | |
|----------------|---------------------------|
| ¾" Size | 1 EQR |
| 1" Size | 1.67 EQR |
| 1½" Size | 3.33 EQR |
| 2" Size | 6.67 EQR |
| 3" Size | 16.67 EQR |
| 4" Size | 33.33 EQR |
| Larger than 4" | As Determined by District |

TAP INSPECTION FEE \$150

This fee is intended to cover the cost of the District's inspection of the physical tap and of the Customer's Service Line, entering the tap location on the District's as-built drawing set, and other ancillary services needed in connection with a new tap.

MONTHLY WATER SERVICE CHARGES

| | |
|-----------------------|--------------------------|
| Base Rate (0 gallons) | \$ 48.00 flat rate |
| 40,000 gallons | \$ 4.50 per 1,000 gals. |
| 40,001 + gallons | \$ 10.00 per 1,000 gals. |

Due Date: 5th day of month following
Month in which billed

LATE CHARGE \$ 15.00

RENEWABLE WATER RESOURCE FEE

| Meter Size | SFE | GPM | Fee* |
|------------|-------|------|-----------|
| 5/8 & 3/4 | 0.67 | 20 | \$9,936 |
| 3/4 | 1 | 30 | \$14,830 |
| 1" | 1.67 | 50 | \$24,766 |
| 1.5" | 3.33 | 100 | \$49,384 |
| 2" | 6.67 | 200 | \$98,916 |
| 3" | 16.67 | 500 | \$247,216 |
| 4" | 33.33 | 1000 | \$494,284 |
| 6" | 66.67 | 2000 | \$988,716 |

*Fee structure based on Town of Castle Rock Municipal Code, 2012 Renewable Water Resource Fees, Chapter 4.04, Water Dedication Code.

Credit against the renewable water resource fee may be granted in consideration of the dedication of tributary water or surface water rights on such terms and conditions acceptable to the District Board.

Payment of the renewable water resource fee shall be assessed in accordance with the schedule of rates in effect as of the date of inclusion. Payment of the renewable water resource fee shall be a condition to issuance of a water tap.

AVAILABILITY OF SERVICE CHARGE

50% of Monthly Water Service Charge
 Base Rate

Assessed on each parcel of land established by a recorded final subdivision plat located within the District's boundaries and where the lot line of which is located within one hundred feet (100') of a water line which is installed and ready for connection. Charge assessed and due on same schedule as Monthly Water Service Charge.

INSPECTION FEES

| | | |
|-------------------------------------|----|--------|
| Service Line / Meter Pit Inspection | \$ | 180.00 |
| Meter Installation | \$ | 180.00 |
| Other Inspection | \$ | 180.00 |

REINSPECTION FEE OR RETURN VISIT FEE

\$ 180.00

METER COST

Current cost to District

WATER TURN ON/TURN OFF

\$ 90.00 each on/off
 (Customer Requested)

MISCELLANEOUS FEES:

CONSTRUCTION WATER FEE \$ 50.00 / month
District shall make construction water available to homebuilders, from the date a building permit is pulled until a meter is installed at a flat monthly rate.

FIRE HYDRANT METER FEES

Meter Assembly Rental Deposit \$ 2,000.00 (refundable)
Monthly Fee \$ 10.00 / 1,000 gallons

FORMAL INCLUSION HEARING FEE

\$ 1,000.00 / application fee
Plus all costs of publication of notices and engineering, management and attorneys; fees incurred by District in processing the inclusion.

INCLUSION FEE

Initial Deposit \$ 10,000.00
Non-refundable
Incremental Refundable Deposits of \$ 5,000.00

For actual time and expenses incurred over the \$10,000 initial deposit, including but not limited to costs of publication of notices and engineering, management and attorneys' fees.

TRANSFER OF SERVICE FEE

\$ 175.00/occurrence
Fee due and owing upon transfer of account from one responsible party and/or account holder to another.

PLAN REVIEW FEES

Actual Time and expenses incurred by District \$ 1,500.00 / minimum fee

PENALTY FEES / FINES:

Excavation During Non-Excavation Period - Bond \$ 5,000.00

December 1 through March 31 of each year. The District may adjust the no-excavation period based on actual weather conditions. The bond is security for repairs which may be required due to damage to the District's existing facilities.

Installation of any non-metered device \$ 2,000.00 / occurrence

Installation of any device (i.e., "jumper") to allow for circumvention of the District's monitoring or delivery systems shall constitute unauthorized tampering and the use of the District water system shall be subject to a penalty fee. Such fines shall, until paid, constitute a lien upon the subject property, pursuant to Section 32-1-1001, C.R.S.

Irrigating with Domestic Water¹ - First Offense \$ 1,000.00

Irrigating with Domestic Water¹ - Second Offense \$ 2,000.00

¹ In a dual domestic and irrigation water service area.

& Flow Restrictor will be installed

Irrigating with Domestic Water¹ - Disconnection of Service. Service not to be reinstated until all fees, including penalties, are paid in full.

Failure to Possess Rules and Regulations \$ 1,000.00 / occurrence

Failure to purchase and/or have a copy of the Greatrock North Water and Sanitation District Rules and Regulations, and updates, and approved construction plans on site during construction.

Occupation of Building Prior to Meter Set \$ 1,000.00

Repair of Broken or Damaged Water Meters, Meter Pits and Curb Stop Boxes 100%²

Plus any management and attorneys' fees incurred to collect associated costs.

Unauthorized Tampering with District systems or meters: \$ 2,000.00 / incident

Plus actual cost of damage, expense, and loss.

Unauthorized Connection Fee 2 x the current SDF

Plus actual cost of damage, expense, and loss, legal fees, and any other costs incurred in the filing of criminal charges.

Due Dates: 5th day of month following
Month in which billed unless
otherwise specified on invoice

PAYMENTS: Payment for each fee shall be made payable to the Greatrock North Water and Sanitation District and sent to the following address for receipt by the Due Date:

Greatrock North Water and Sanitation District
Post Box 912775
Denver, Colorado 80291-2775

² A) If a Customer damages or breaks their water meter, the Customer shall pay 100% of the associated costs for the repair and/or replacement of the water meters, meter pits and curb stop boxes.

B) The District will notify the Customer of the broken or damaged water meters, meter pits and curb stop boxes and the costs of repair and/or replacement. A copy of the invoice for the work will be included with the notice. The Customer will reimburse the costs to the District within thirty (30) days of receipt of the notice.

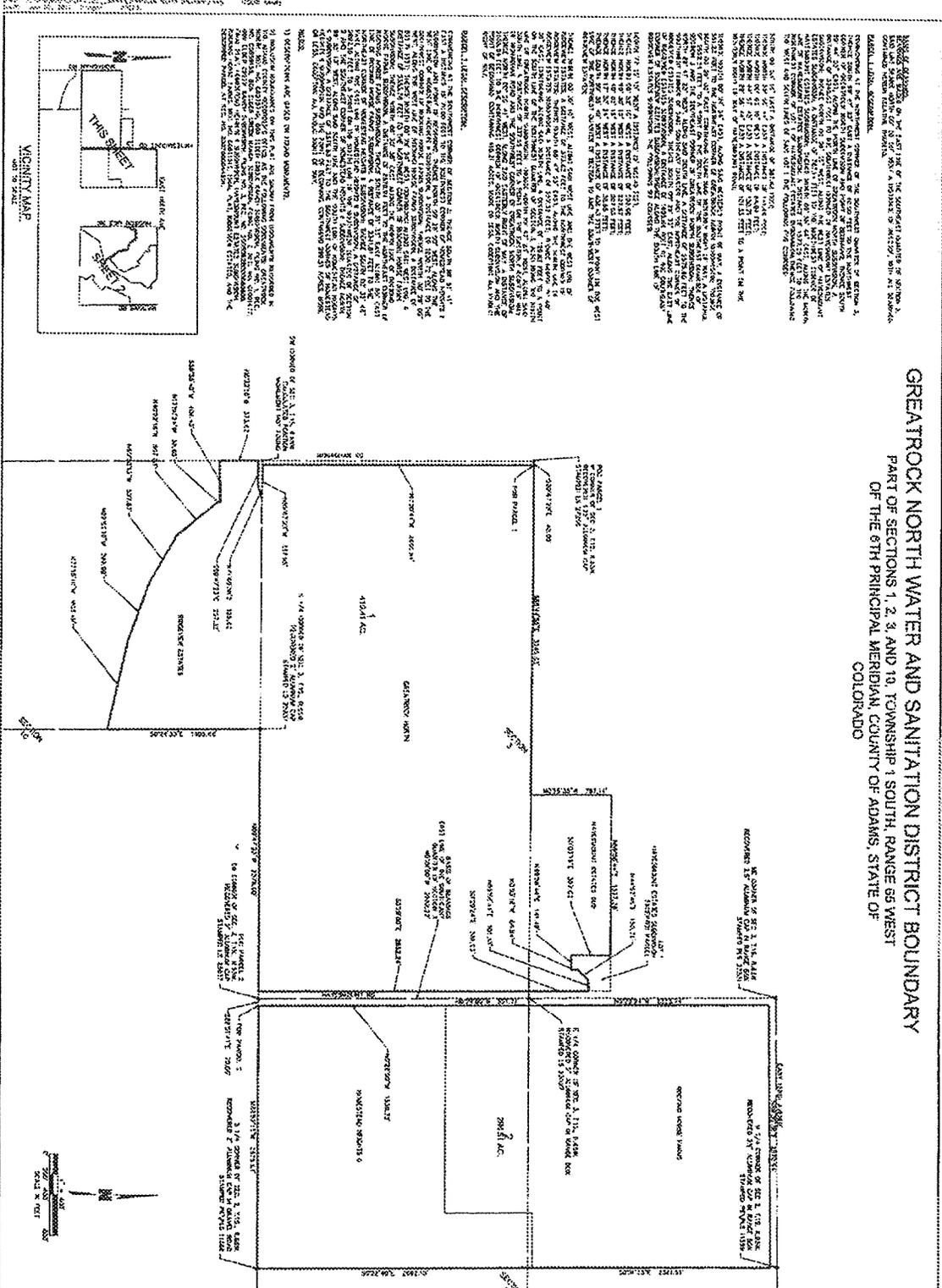
C) If reimbursement is not received by the District within thirty (30) days of the notice, the costs will be added as a charge to the Customer's water bill for the next billing cycle.

EXHIBIT B

GREATROCK NORTH WATER AND SANITATION DISTRICT

District Boundaries

GREATROCK NORTH WATER AND SANITATION DISTRICT BOUNDARY
 PART OF SECTIONS 1, 2, 3, AND 18, TOWNSHIP 1 SOUTH, RANGE 68 WEST
 OF THE 8TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO



Resolution No. 2015-11-05

RESOLUTION
OF THE
BOARD OF DIRECTORS
OF THE
GREATROCK NORTH WATER AND SANITATION

Establishing Guidelines for the Processing and Collection of Delinquent Fees and Charges

WHEREAS, the Greatrock North Water and Sanitation District (the “**District**”) is a quasi-municipal corporation and political subdivision of the State of Colorado; and

WHEREAS, pursuant to § 32-1-1001(1)(j)(I), C.R.S., the Board of Directors of the District (the “**Board**”) is authorized to fix and from time to time increase or decrease, fees, rates, tolls, penalties, or charges for services, programs, or facilities furnished by the District (collectively, the “**Fees**”) to properties within and without (each property individually referred to herein as the “**Property**”) the District’s boundaries; and

WHEREAS, pursuant to § 32-1-1001(1)(j)(I), C.R.S., until paid, the Fees shall constitute a perpetual lien on and against the property served, and any such lien may be foreclosed in the same manner as provided by the laws of the State of Colorado for the foreclosure of mechanics’ liens; and

WHEREAS, by this Resolution (the “**Resolution**”), the District desires to set forth guidelines for the processing and collection of unpaid and/or delinquent Fees imposed by the District, together with any and all Late Fees, Interest, Penalties and Costs of Collections (each defined separately in this Resolution), (collectively, the “**Delinquent Fees and Charges**”); and

WHEREAS, notwithstanding anything in this Resolution to the contrary, the guidelines set forth in this Resolution are intended to create orderly and fair procedures for the processing and collection of Delinquent Fees and Charges and any deviation from the guidelines shall not affect the status of the Lien (as defined below) in any way; and

WHEREAS, on July 1, 2010, the Board adopted Resolution No. 2010-07-02: Collection Resolution of Greatrock North Water and Sanitation District (the “**Prior Policy**”), and the Board desires to adopt this Resolution to amend and restate the Prior Policy in its entirety.

NOW, THEREFORE, the Board hereby RESOLVES:

1. Statement of Lien Guidelines:

- a. *Perpetual Lien.* Pursuant to § 32-1-1001(1)(j)(I), C.R.S., all Delinquent Fees and Charges shall constitute a perpetual lien on and against the Property served by the District (the “**Lien**”). All such Liens shall, to the fullest extent permitted by law, have priority over all other liens of record affecting the Property and shall run with the Property and remain in effect until paid in full. All Liens contemplated herein may be foreclosed as authorized by law at such time as the

District, in its sole discretion, may determine.

i. Notwithstanding the foregoing, the guidelines set forth in this Resolution are intended to create orderly and fair procedures for the processing and collection of Delinquent Fees and Charges and to provide additional notice to interested parties, including, but not limited to, title companies and the Property owner. In the event any or all of the guidelines set forth in this Resolution are not followed, such deviation shall not affect the status of the Lien in any way. Further, the Board may waive any guidelines set forth in this Resolution and may amend them from time to time as it deems necessary.

b. ***District's Manager Procedures.*** The District's Manager, Accountant or Billing Agent (any of which are referred to herein as the "**Manager**") is responsible for collecting Fees imposed by the District against the Property. In the event payment of Fees is delinquent, the Manager may perform the procedures listed below. The Fees are considered delinquent when they have not been paid by their corresponding due date (the "**Delinquent Account**"):

i. *Fifteen (15) Calendar Days Past Due:* A delinquent payment "Reminder Letter" may be sent to the address of the last known owner or occupant of the Property according to the Manager's records. In the event the above mailing is returned as undeliverable, the Manager may send a second copy of the Reminder Letter to: (1) the Property; and (2) the address of the last known owner of the Property as found in the real property records of the County Assessor's Office (the "**Assessor**") for the County in which the District is located (collectively, the "**Property Address**"). Said Reminder Letter may: (1) request prompt payment; (2) notify the Property owner that a Reminder Letter Fee and a Late Fee in the amounts set forth in this Resolution have been assessed; and (3) reference the url address of the District's webpage where this Resolution is displayed, if available and requested by the Board.

ii. *Fifteen (15) Calendar Days From the Postmark Date of the Reminder Letter:* A "Warning Letter" may be sent to the Property Address: (1) requesting prompt payment; (2) warning of further legal action should the Property owner fail to pay the total amount due and owing; and (3) referencing the url address of the District's webpage where this Resolution is displayed, if available. Along with the Warning Letter, a copy of the most recent account ledger reflecting the total amount due and owing to the District according to the records of the Manager may also be sent.

iii. *Ten (10) Calendar Days from the Postmark Date of the Warning Letter:* Once the total amount of Delinquent Fees and Charges owing on the Property has exceeded One Hundred Twenty Dollars (\$120.00), regardless of whether the Manager has performed the tasks outlined in Section 1(b) of this Resolution, the Manager may refer the Delinquent Account to the District's General Counsel (the "**General Counsel**"). At the time of such referral, the Manager may be requested to provide General Counsel with copies of all notices and letters sent

pursuant to Section 1(b), if any, as well as a copy of the most recent ledger for the Delinquent Account.

c. **General Counsel Procedures.** Upon referral of a Delinquent Account from the Manager, General Counsel may perform the following:

i. *Upon Referral of the Delinquent Account From the Manager:* A “Demand Letter” may be sent to the Property Address, notifying the Property owner that the Property has been referred to General Counsel for further collections enforcement, including the filing of a statement of lien against the Property. Along with the Demand Letter, a copy of the most recent account ledger reflecting the total amount due and owing the District according to the records of the Manager may also be sent.

ii. *No Sooner than Thirty (30) Calendar Days from the Postmark Date of the Demand Letter:* A Notice of Intent to File a Statement of Lien, along with a copy of the statement of lien to be filed, may be sent to the Property Address of the Delinquent Account notifying the Property owner that a statement of lien will be recorded with the clerk and recorder of the county where the Property is located (the “**Clerk and Recorder**”) within no sooner than ten (10) days from the postmark date of the Notice of Intent to File a Statement of Lien.

iii. *No Sooner than Ten (10) Calendar Days from the Postmark Date of the Notice of Intent to File a Statement of Lien:* A Statement of Lien for the total amount due and owing as of the date of the Statement of Lien may be recorded against the Property with the Clerk and Recorder no sooner than ten (10) days from the postmark date of the Notice of Intent to File a Statement of Lien is sent to the Property. Notwithstanding the amount due and owing reflected on the Statement of Lien, all Delinquent Fees and Charges will continue to accrue on the Delinquent Account and will run with the Property until the total amount due and owing the District is paid in full.

d. **Foreclosure or Bankruptcy.** In circumstances where the Property is being foreclosed upon or where the owner of the Property has declared or is declaring bankruptcy and notice of such bankruptcy action has been provided to the District, the Manager may be permitted, in his or her discretion, to refer the Delinquent Account directly to General Counsel in order to avoid unnecessary, costly and time consuming procedures. Upon referral of the Delinquent Account to General Counsel, General Counsel may, in his or her discretion, immediately file a Statement of Lien on the Property.

2. Late Fees:

a. “**Late Fees**” are assessed on the Property for failure to make timely payments of Fees. Late Fees are applied, regardless of whether the Fees are assessed on a one-time, monthly, quarterly, semi-annual, annual, or any other basis.

b. Late Fee are assessed on the Property **Fifteen (15) calendar days from the payment due date.** Pursuant to § 29-1-1102, C.R.S., such Late Fee may be charged by either of the following two methods, whichever is greater:

i. One Late Fee of Fifteen Dollars (\$15.00) may be assessed on the Property per each assessment or installment of Fees not fully paid prior to the Fifteenth (15) calendar day following the payment due date; or

ii. In lieu of Section 2(b)(i) above, a Late Fee of Five Percent (5%) per month, commencing on the Fifteenth (15) calendar day following the payment due date, and each month thereafter, may be charged on unpaid Fees until the Late Fee equals Twenty Five Percent (25%) of all outstanding Fees.

Example:

| | |
|--|---------------|
| January 1 Fee (unpaid) | - \$100 |
| 5% Late Fee (January 15) | - \$5 |
| February 1 Fee (unpaid) | - \$100 |
| <u>5% Late Fee (February 15)</u> | <u>- \$10</u> |
| (Net Balance) | - \$215 |

c. Partial payment of any outstanding Delinquent Fees and Charges will not prevent the imposition of Late Fees pursuant to this Section 2.

Example: (using the \$15.00 Late Fee)

| | |
|--|---------------|
| January 1 Fee (unpaid) | - \$100 |
| Partial Payment on January 5 | \$90 |
| <u>Late Fee (January 15)</u> | <u>- \$15</u> |
| (Net Balance) | - \$25 |

d. Payments received will be applied to the balance due in the following order of priority: (1) Late Fees; (2) Interest; (3) Costs of Collections; (4) the earliest imposed and unpaid Fees; (5) any successive unpaid Fees in chronological order from the earliest unpaid Fees to the most recently imposed Fees.

Example A: (using the \$15.00 Late Fee)

| | |
|--------------------------------------|--------------|
| January 1 Fee (unpaid) | - \$100 |
| Late Fee (January 15) | - \$15 |
| February 1 Fee (unpaid) | - \$100 |
| Late Fee (February 15) | - \$15 |
| March 1 Fee (unpaid) | - \$100 |
| <u>Payment on March 10</u> | <u>\$280</u> |
| (Net Balance) | - \$50 |
| - Late Fees Balance = | \$0 |
| - Fees and Charges Balance = | - \$50 |

Example B: (using the \$15.00 Late Fee)

| | |
|---|---------------|
| January 1 Fee (unpaid) | - \$100 |
| Late Fee (January 15) | - \$15 |
| February 1 Fee | - \$100 |
| Payment on February 10 | \$150 |
| <u>Late Fee (February 15)</u> | <u>- \$15</u> |

(Net Balance - \$80)
 - *Late Fees Balance* = - \$15
 - *Fees and Charges Balance* = - \$65

e. No penalty will be assessed on the Property for a credit balance resulting from the prepayment and/or overpayment of Fees. Such credit balances will be carried forward on the account with all subsequent Fees and Delinquent Fees and Charges being deducted until such time as the credit balance is depleted. A Property carrying a credit balance may be assessed Late Fees as provided herein at such time as the credit balance is insufficient to pay the entire amount of Fees due and owing the District.

Example:

January 1 Fee - \$100
 Payment on January 2 \$350
 February 1 Fee - \$100
 March 1 Fee - \$100 (balance = \$50)
 April 1 Fee - \$100
Late Fee (April 15)..... - \$15
 (Net Balance - \$65)

3. Interest:

“**Interest**” charges accrue on all delinquent Fees at the maximum statutory rate of Eighteen Percent (18%) per annum. Interest shall not accrue and be charged on Late Fees, Interest or Costs of Collections. §29-1-1102, C.R.S.

4. Penalties:

“Penalties” may be charged on Delinquent Accounts at a rate determined by the Board and may include, but are not limited to, pro-rated costs associated with collection efforts on behalf of the District for all Delinquent Accounts combined.

5. Costs of Collections:

“**Costs of Collections**” include, but are not limited to, attorneys’ fees and all costs, fees and charges associated with the processing and/or collection of Delinquent Fees and Charges, including the following fixed rates and hourly fees and costs:

i. *Action Fees.* The following fixed rate fees are charged to a Delinquent Account once the corresponding action has been taken by either the Manager or General Counsel:

- *Reminder Letter Fee:* Ten Dollars (\$10.00) per Reminder Letter. This action is typically performed by the Manager.

- *Warning Letter Fee:* Ten Dollars (\$10.00) per Warning Letter sent. This action is typically performed by the Manager.

- *Attorney Transfer Fee:* Thirty Dollars (\$30.00) per Delinquent Account transferred from the Manager to General Counsel. This action is performed

by the Manager.

- *Demand Letter Fee:* Eighty Dollars (\$80.00) per Demand Letter sent. This action is performed by General Counsel.

- *Notice of Intent to File a Statement of Lien Fee:* One Hundred Twenty Dollars (\$120.00) per Notice of Intent to File a Statement of Lien sent. This action is performed by General Counsel.

- *Lien Recording Fee:* One Hundred Fifty Dollars (\$150.00) per each lien recorded on the Property. This action is performed by General Counsel.

- *Lien Release Fee:* One Hundred Fifty Dollars (\$150.00) per lien that is released. This action is performed by General Counsel. It is recommended that the Lien Release Fee be charged to the Delinquent Account at the same time as the Lien Recording Fee.

ii. *Attorney Hourly Fees and Costs.* Upon transfer of a Delinquent Account to General Counsel, all hourly attorneys' fees and costs, including, but not limited to, litigation and expert witness fees and costs, incurred by the District to collect or defend the Delinquent Fees and Charges are assessed to the Delinquent Account and become part of the perpetual Lien on the Property. All such hourly attorneys' fees and costs shall be reasonable.

iii. *Recovery of Costs of Collections.* In accordance with § 29-1-1102(8), C.R.S., nothing in this Resolution shall be construed to prohibit the District from recovering all Costs of Collections whether or not outlined above.

6. Waiver of Late Fees, Interest and Costs of Collections:

a. The Manager and General Counsel each have authority and discretion to waive or reduce portions of the Delinquent Account attributable to Late Fees and Interest. Such action is permitted if either the Manager or General Counsel, in its discretion, determines that such waiver or reduction will facilitate the payment of Delinquent Fees and Charges. Notwithstanding the foregoing, if the cumulative amount due and owing the District on the Delinquent Account exceeds One Thousand Dollars (\$1,000.00), neither the Manager nor General Counsel shall have any authority to waive or reduce any portion of the Late Fees or Interest. In such case, the person or entity owing in excess of One Thousand Dollars (\$1,000.00) shall first submit a request, in writing, to the Board, and the Board may make the determination in its sole discretion.

b. Neither the Manager nor General Counsel is authorized to waive any portion of the Fees or Costs of Collections. Should the Property owner desire a waiver of such Fees and/or Costs of Collections, s/he may submit a written request to the Board and the Board may make the determination in its sole discretion.

c. Any waiver or reduction of Late Fees or Interest granted pursuant to Sections 6(a) or (b) hereof shall not be construed as a waiver or reduction of future Late Fees and Interest, or as the promise to waive or reduce future Late Fees or Interest. Nor shall any such waiver or reduction be deemed to bind, limit, or direct the future decision making power of the Board, Manager, or General Counsel, whether related to the Property in question or other properties within the District.

7. Payment Plans:

The Manager and General Counsel each have the authority to enter into or establish payment plans for the repayment of a Delinquent Account. Should the Manager or General Counsel elect not to enter into a payment plan with the Property owner, the Property owner may submit a written request to the Board and the Board may make the determination in its sole discretion.

8. Ratification of Past Actions:

All acts, omissions, waivers and/or payment plans heretofor undertaken by the Manager or General Counsel that would otherwise have been authorized by or not required by this Resolution are hereby affirmed, ratified and made effective as of the date said acts, omissions, waivers and/or payment plans occurred.

9. Additional Actions:

The Board directs its officers, staff and consultants to take such additional actions and execute such additional documents as are necessary to give full effect to the intention of this Resolution.

10. Supersedes Prior Resolutions:

This Resolution shall supersede and replace in their entirety all prior resolutions addressing the processing and/or collection of Delinquent Fees and Charges, including the Prior Policy. To the extent that any term or provision in this Resolution conflicts with any term or provision in a previously enacted and valid resolution of the District, the term or provision in this Resolution shall prevail.

11. Severability:

If any term, condition or provision of this Resolution shall, for any reason, be held to be invalid or unenforceable, the invalidity or unenforceability of such term, condition or provision shall not affect any other provision contained in this Resolution, the intention being that such provisions are severable. In addition, in lieu of such void or unenforceable provision, there shall automatically be added as part of this Resolution a provision similar in terms to such illegal, invalid or unenforceable provision so that the resulting reformed provision is legal, valid and enforceable.

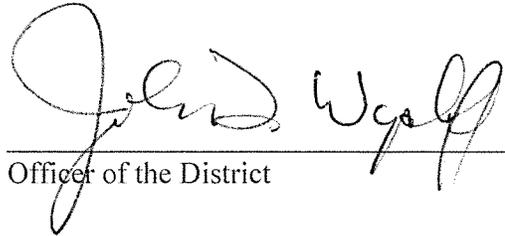
12. Savings Provision:

The failure to comply with the procedures set forth herein shall not affect the status of the Delinquent Fees and Charges as a perpetual Lien subject to foreclosure in accordance with law. Failure by the Manager, General Counsel or other authorized representative to take any action in accordance with the guidelines provided herein shall not invalidate subsequent efforts to collect the Delinquent Fees and Charges.

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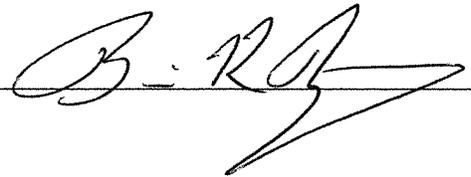
ADOPTED this 3rd day of November 2015.

GREATROCK NORTH WATER AND SANITATION
DISTRICT



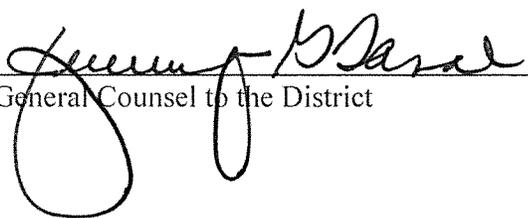
Officer of the District

ATTEST:



APPROVED AS TO FORM:

WHITE BEAR ANKELE TANAKA & WALDRON
Attorneys at Law



General Counsel to the District

Resolution No. 2015-11-06

**GREATROCK NORTH WATER AND SANITATION DISTRICT
ANNUAL ADMINISTRATIVE RESOLUTION
(2016)**

At the regular meeting of the Board of Directors (“Board”) of the Greatrock North Water and Sanitation District (“District”), Adams County, Colorado, held at 5:30 P.M., on November 3, 2015, at 500 Cooperative Way, Brighton, Colorado, it was moved to adopt the following Resolution:

WHEREAS, the District was organized as a special district pursuant to an Order and Decree of the District Court in and for the County of Adams, Colorado (the “County”); and

WHEREAS, the Board has a duty to perform certain obligations in order to assure the efficient operation of the District and hereby directs its consultants to take the following actions.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD AS FOLLOWS:

1. The Board directs the District’s manager to cause an accurate map of the District’s boundaries to be prepared in accordance with the standards specified by the Division of Local Government (“Division”) and to be filed in accordance with § 32-1-306, C.R.S.

2. The Board directs the District’s manager to notify the Board of County Commissioners, the County Assessor, the County Treasurer, the County Clerk and Recorder, the governing body of any municipality in which the District is located, and the Division of the name of the chairman of the Board, the contact person, telephone number and business address of the District, as required by § 32-1-104(2), C.R.S.

3. The Board directs the District’s manager to prepare and file with the Division, within thirty (30) days of a written request from the Division, an informational listing of all contracts in effect with other political subdivisions, in accordance with § 29-1-205, C.R.S.

4. The Board directs the District’s accountant to cause the preparation of and to file with the Department of Local Affairs the annual public securities report for nonrated public securities issued by the District within sixty (60) days of the close of the fiscal year, as required by §§ 11-58-101, *et seq.*, C.R.S.

5. The Board directs the District’s accountant to: 1) obtain proposals for auditors to be presented to the Board; 2) to cause an audit of the annual financial statements of the District to be prepared and submitted to the Board on or before June 30; and 3) to cause the audit to be filed with the State Auditor by July 31, or by the filing deadline permitted under any extension thereof, all in accordance with §§ 29-1-603(1) and 29-1-606, C.R.S. Alternatively, if warranted by § 29-1-

604, C.R.S., the Board directs the District's accountant to apply for and obtain an audit exemption from the State Auditor on or before March 31 in accordance with § 29-1-604, C.R.S.

6. The Board directs the District's manager, if the District has authorized but unissued general obligation debt as of the end of the fiscal year, to cause to be submitted to the Board of County Commissioners or the governing body of the municipality that adopted a resolution of approval of the District, the District's audit report or a copy of its application for exemption from audit in accordance with § 29-1-606(7) C.R.S.

7. The Board directs the District's accountant to submit a proposed budget to the Board by October 15, to prepare the final budget and budget message, including any amendments thereto, if necessary, and directs the District's manager to schedule a public hearing on the proposed budget and/or amendments, and to post or publish notices thereof, to prepare all budget resolutions and to file the budget, budget resolution and budget message with the Division on or before January 30, all in accordance with §§ 29-1-101, *et seq.*, C.R.S.

8. The Board directs the District's manager to cause the preparation of the Unclaimed Property Act report and submission of the same to the State Treasurer by November 1 if there is property presumed abandoned and subject to custody as unclaimed property, in accordance with § 38-13-110, C.R.S.

9. The Board directs the District's accountant to prepare the mill levy certification form and directs the District's manager to file the mill levy certification forms with the Board of County Commissioners on or before December 15, in accordance with § 39-5-128, C.R.S.

10. The Board designates the *Brighton Standard Blade* as a newspaper of general circulation within the boundaries of the District and directs that all legal notices shall be published in accordance with § 32-1-103(15), C.R.S., in the *Brighton Standard Blade*, unless otherwise designated by the Board or legal counsel.

11. The Board determines that each director shall receive compensation for their services as directors subject to the limitations set forth in §§ 32-1-902(3)(a)(I) & (II), C.R.S.

12. The District hereby acknowledges, in accordance with § 32-1-902, C.R.S., the following officers for the District:

| | |
|----------------------|----------------------|
| President: | Robert William Fleck |
| Vice President: | John D. Wyckoff |
| Treasurer: | Jeffrey Polliard |
| Secretary: | Brian K. Rogers |
| Assistant Secretary: | Dave Lozano |
| Recording Secretary: | District Manager |

13. The Board hereby determines that each member of the Board shall, for any potential or actual conflicts of interest, complete conflicts of interest disclosures and directs legal counsel to file the conflicts of interest disclosures with the Board and with the Colorado Secretary of State

at least seventy-two (72) hours prior to every regular and special meeting of the Board, in accordance with §§ 32-1-902(3)(b) and 18-8-308, C.R.S. Written disclosures provided by Board members required to be filed with the governing body in accordance with § 18-8-308, C.R.S. shall be deemed filed with the Board when filed with the Secretary of State. Additionally, at the beginning of each year, each Board member shall submit information to legal counsel regarding any actual or potential conflicts of interest and, throughout the year, each Board member shall provide legal counsel with any revisions, additions, corrections or deletions to said conflicts of interest disclosures.

14. The Board confirms its obligations under § 24-10-110(1), C.R.S., with regards to the defense and indemnification of its public employees, which, by definition, includes elected and appointed officers.

15. The Board hereby appoints the District's manager as the official custodian for the maintenance, care and keeping of all public records of the District, in accordance with §§ 24-72-202, *et seq.*, C.R.S.

16. Pursuant to § 24-6-402(2)(c), C.R.S., the Board hereby designates the water tank at 16373 Rayburn Street, Hudson, Colorado, as the District's 24-hour posting place for notices of meetings.

17. The Board determines to hold regular meetings on the first Tuesday of each month at 5:30 P.M. at 500 Cooperative Way, Brighton, Colorado. Notice of the time and place for all regular meetings shall be posted in accordance with § 32-1-903, C.R.S.

18. In the event of an emergency, the Board may conduct a meeting outside of the limitations prescribed in § 24-6-402(2)(c), C.R.S., provided that any actions taken at such emergency meeting are ratified at the next regular meeting of the Board or at a special meeting conducted after proper notice has been given to the public.

19. For the convenience of the electors of the District, and pursuant to its authority set forth in § 1-13.5-1101, C.R.S., the Board hereby deems that all regular and special elections of the District shall be conducted as independent mail ballot elections in accordance with §§ 1-13.5-1101, *et seq.*, C.R.S., unless otherwise deemed necessary and expressed in a separate election resolution adopted by the Board.

20. Pursuant to the authority set forth in § 1-1-111, C.R.S., the Board hereby appoints Lisa A. Johnson of Special District Management Services, Inc. as the Designated Election Official (the "DEO") of the District for any elections called by the Board, or called on behalf of the Board by the DEO, and hereby authorizes and directs the DEO to take all actions necessary for the proper conduct of the election, including, if applicable, cancellation of the election in accordance with § 1-13.5-513, C.R.S.

21. In accordance with § 1-11-103(3), C.R.S., the Board hereby directs the DEO to certify to the Division the results of any elections held by the District and, pursuant to § 32-1-1101.5(1), C.R.S., to certify results of any ballot issue election to incur general obligation

indebtedness to the Board of County Commissioners or the governing body of the municipality that adopted a resolution of approval of the district and file a copy of such certification with the Division of Securities.

22. The Board directs the District's manager to cause a notice of authorization of or notice to incur general obligation debt to be recorded with the County Clerk and Recorder within thirty (30) days of authorizing or incurring any indebtedness, in accordance with § 32-1-1604, C.R.S.

23. The Board directs the District's manager to cause the preparation of and filing with the Board of County Commissioners or the governing body of the municipality that adopted a resolution of approval of the District, if requested, the application for quinquennial finding of reasonable diligence in accordance with §§ 32-1-1101.5(1.5) and (2), C.R.S.

24. The Board directs the District's manager to cause the preparation of and the filing with the Board of County Commissioners or the governing body of any municipality in which the District is located, the Division, the State Auditor, the County Clerk and Recorder and any interested parties entitled to notice pursuant to § 32-1-204(1), C.R.S., an annual report, if requested, in accordance with § 32-1-207(3)(c), C.R.S.

25. The Board directs the District's manager to obtain proposals and/or renewals for insurance, as applicable, to insure the District against all or any part of the District's liability, in accordance with §§ 24-10-115, *et seq.*, C.R.S. The Board directs the District's accountant to pay the annual SDA membership dues, agency fees and insurance premiums, as applicable, in a timely manner.

26. The Board hereby opts to include elected or appointed officials as employees within the meaning of § 8-40-202(1)(a)(I)(A), C.R.S., and hereby direct the District's manager to obtain workers' compensation coverage for the District.

27. The Board hereby directs the District's manager to prepare the disclosure notice required by § 32-1-809, C.R.S., and to disseminate the information to the electors of the District accordingly.

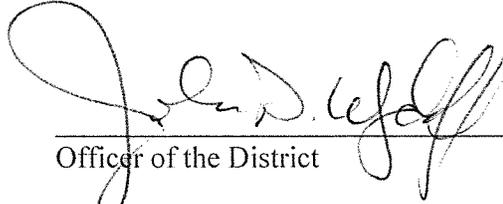
28. The Board hereby directs its legal counsel, accountant, manager and all other consultants to adhere to the Colorado Special District Records Retention Schedule as adopted by the District.

29. The Board hereby directs the District's manager to prepare and record with the County Clerk and Recorder updates to the disclosure statement notice and map required by § 32-1-104.8, C.R.S., if additional property is included within the District's boundaries.

30. The Board directs the District's accountant to prepare and submit the documentation required by any continuing disclosure obligation signed in conjunction with the issuance of debt by the District.

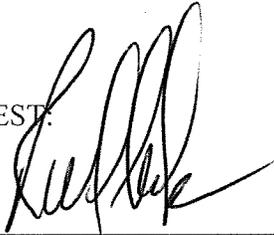
ADOPTED this 3rd day of November 2015.

GREATROCK NORTH WATER AND
SANITATION DISTRICT



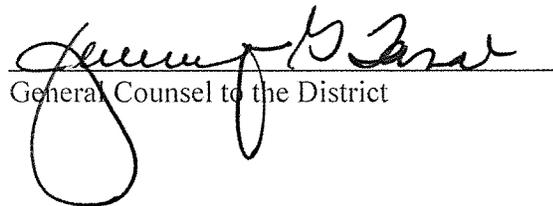
Officer of the District

ATTEST:



APPROVED AS TO FORM:

WHITE BEAR ANKELE TANAKA & WALDRON
Attorneys at Law



General Counsel to the District

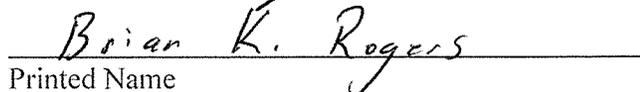
CERTIFICATION OF RESOLUTION

I hereby certify that the foregoing constitutes a true and correct copy of the resolution of the Board adopted at a meeting held on November 3, 2015, at 500 Cooperative Way, Brighton, Colorado.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 3rd day of November 2015.



Signature



Printed Name

Resolution No. 2015-11-07

**RESOLUTION OF BOARD OF DIRECTORS
REGARDING ELECTION**

GREATROCK NORTH WATER AND SANITATION DISTRICT

§§ 32-1-804, 1-1-111(2), 1-13.5-1103(1) and 1-13.5-513(1), C.R.S.

At a meeting of the Board of Directors (the “Board”) of the Greatrock North Water and Sanitation District (the “District”), it was moved to adopt the following Resolution:

WHEREAS, the District was organized as a special district pursuant to Article 1 of Title 32, Colorado Revised Statutes (the “Special District Act”); and

WHEREAS, the District is located entirely within Adams County, Colorado (the “County”);
and

WHEREAS, pursuant to § 32-1-804, C.R.S., the Board governs the conduct of regular and special elections for the District; and

WHEREAS, the Board anticipates holding a regular election on May 3, 2016, for the purpose of electing directors, and desires to take all actions necessary and proper for the conduct thereof (the “Election”); and

WHEREAS, the Election shall be conducted pursuant to the Special District Act, the Colorado Local Government Election Code and the Uniform Election Code of 1992, to the extent not in conflict with the Colorado Local Government Election Code, including any amendments thereto, and shall also comply with Article X, § 20 of the Colorado Constitution (“TABOR”), as necessary; and

WHEREAS, pursuant to § 1-1-111(2), C.R.S., the Board is authorized to designate an election official (the “Designated Election Official”) to exercise authority of the Board in conducting the Election; and

WHEREAS, pursuant to § 1-13.5-513(1), C.R.S., the Board can authorize the Designated Election Official to cancel the Election upon certain conditions.

NOW, THEREFORE, BE IT RESOLVED by the Board as follows:

1. The Board hereby calls the Election for the purpose of electing directors. The Election shall be conducted as an independent mail ballot election in accordance with § 1-13.5-1101, *et seq.*, C.R.S., unless otherwise determined at the Board’s discretion.

2. The Board names Lisa A. Johnson of Special District Management Services, Inc. as the Designated Election Official for the Election. The Designated Election Official shall act as the primary contact with the County and shall be primarily responsible for ensuring the proper conduct of the Election.

3. Without limiting the foregoing, the following specific determinations also are made:

- a. The Board hereby directs general counsel to the District to approve the final form of the ballot to be submitted to the eligible electors of the District and authorizes the Designated Election Official to certify those questions and take any required action therewith.
- b. The Board hereby directs general counsel to the District to oversee the general conduct of the Election and authorizes the Designated Election Official to take all action necessary for the proper conduct thereof and to exercise the authority of the Board in conducting the Election, including, but not limited to, causing the call for nominations; appointment, training and setting compensation of election judges and a board of canvassers, as necessary; all required notices of election, including notices required pursuant to TABOR; printing of ballots; supervision of the counting of ballots and certification of election results; and all other appropriate actions.

4. The District shall be responsible for the payment of any and all costs associated with the conduct of the Election, including its cancellation, if permitted.

5. The Board hereby ratifies any and all actions taken to date by general counsel and the Designated Election Official in connection with the Election.

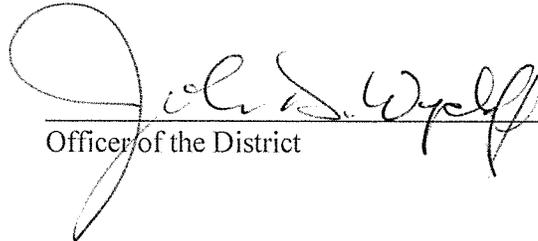
6. The Board hereby authorizes and directs the Designated Election Official to cancel the Election and to declare the candidates elected if, at the close of business on the sixty-third day before the Election, or at any time thereafter, there are not more candidates for director than offices to be filled, including candidates filing affidavits of intent to be write-in candidates, and so long as the only ballot questions are for the election of candidates. The Board further authorizes and directs the Designated Election Official to publish and post notice of the cancellation as necessary and file such notice and cancellation resolutions with the County Clerk and Recorder and with the Division of Local Government, as required. The Designated Election Official shall also notify the candidates that the Election was canceled and that they were elected by acclamation.

7. This Resolution shall remain in full force and effect until repealed or superseded by subsequent official action of the Board.

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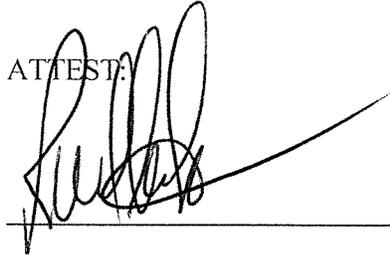
ADOPTED THIS 3RD DAY OF NOVEMBER 2015.

GREATROCK NORTH WATER AND
SANITATION DISTRICT



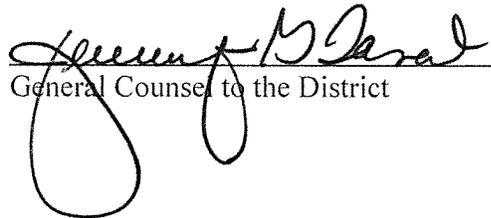
Officer of the District

ATTEST:



APPROVED AS TO FORM:

WHITE BEAR ANKELE TANAKA & WALDRON
Attorneys at Law



General Counsel to the District