#026 60-	CONTRACTOR SUBMITTAL FORM				
and	Project: Griegos Pump Station	Contractor's Submittal No.: 02660-4.0 Date: 4/21/22 Product Description: Disinfection and Pressure Testing Plan			
0 setion	CONTRACTOR: Bradbury Stamm	Dates of any previous submissions: N/A			
Specification No. <b>02 66 (</b> Title/Description: <b>Disinfe</b>	Subcontractor / Supplier: N/A	Manufacturer: N/A			
	Specification No.: 02 66 0	Drawing Nos.:			
	Are there any deviations to the Contract Documents? No Yes (Explain and Identify:)				
	Undisclosed deviations/modifications do not relieve the Contractor from the obligation to provide the specified product and detail of installation, and may be cause for rejection of the Work. Deviations and modifications must be listed here or in a separate Request for Substitution.				
CONTRACTOR'S CERTIFICATION: This submittal has been reviewed by the Contractor in compliance with Submittal Procedures of the CONTRACT DOCUMENTS' SPECIFICATIONS. Any deviations or substitutions to the CONTRACT DOCUMENTS have been identified above and submitted in compliance with the CONTRACT DOCUMENTS.					
If this is a re-submittal, identify on a sheet(s) attached to this form all responses to comments on the previous submittal and all changes other than those specifically requested by the A/E on the previous submittal.					
Signed _	Signed Date: 4/21/22				
A/E'S REVIEW RESPONSE (Refer to Submittal Specification for explanation of categories)					
Date Rec	Date Received:     No. Copies Received:				
	FION CODE "A": ACCEPTED AS SUI	BMITTED			
	FION CODE "B": ACCEPTED EXCEPTION CODE "C": DEVIEWED AND N	PT AS NOTED. RESUBMISSION NOT REQUIRED.			
	ACTION CODE "C": REVIEWED AND NOT ACCEPTED. CORRECT AND RESUBMIT.				
By:		Date:			
A/E'S COMMENTS, IF ANY:					
A/E'S ATTACHMENTS, IF ANY:					
Note: DO NOT combine items from different specification sections into one submittal unless called for in the Section. If provisions in the "General Conditions" conflict with this form, the provisions as stated in the "General Conditions" shall prevail. BACHITECTS   PLANNERS 2701 Miles Road SE, Albuquerque, NM 87106					



# **Griegos Booster Pump Station**

BSC Project #2013.002

4/21/22

# Subcontractor/Supplier: Bradbury Stamm Submittal Title Section: Disinfection and Pressure Testing Spec Section – 02660-4.0

The following items are being submitted:

- 1. Disinfection and Pressure Testing Plan procedure
- 2. Calcium Hypochlorite product data
- 3. Calcium Hypochlorite dosing chart

All comments made by Bradbury Stamm Construction will be as per below and within the submittal documents noted in **green**.

- 1. M-C: This submittal is for pressure testing and disinfection of the new and existing piping from the surge tank riser to the existing valves on the station discharge line(s).
- 2. M-C: Due to the critical nature of this item please expedite review.

## **GRIEGOS PUMP STATION – DISINFECTION/PRESSURE TEST PROCEEDURE**

- Create a chlorine solution to utilize for dosing the original fill water. This solution will utilize NSF approved calcium hypochlorite crystals. Calculations for the amount of crystals is attached on separate sheet. This chlorine solution will be created in the tank of the holding tank for the hydrostatic pump (tank to be disinfected prior to creation of the solution by wiping with chlorine).
- 2. Use potable water to fill the line from the ARV connection on the 30" line within the pump station. The fill water will be potable water (obtained from the on-site hydrant to the south of the existing concrete "storage shed" utilizing a backflow preventer and meter).
- 3. At the time of fill use the hydrostatic pump to deliver half the solution at the 30" pressure transmitter location and half at a tapped blind flange on the 16" line.
- 4. Release any trapped air out of the piping by utilizing the blind flange at the surge tank riser and opening the three existing valves.
- 5. Sample the water at both the 16" blind flange and the pressure transmitter port to ensure 25 ppm chlorine.
- 6. Connect the test pump to the port for the pressure transmitter on segment 1. Pressure test segment 1 per pressures on attached drawing.
- 7. Connect the test pump to the ARV port on segment 2. Pressure test segment 2 per pressures on attached.
- 8. Connect the test pump to the blind flange on the surge tank riser in segment 3. Pressure test segment 3 per pressures on attached.
- 9. Once all pressure tests have passed, open the 16" and 30" valves and let the water sit in the pipe for 24 hours.
- 10. BSC will measure the chlorine residual after the 24 hour period. If the residual is greater than 20 ppm proceed with flushing. If not, then re-chlorinate and begin again at step 7.
- 11. Once step 8 has been passed then begin flushing the line by connecting a PW hose to the ARV port on the 30" line and flushing out through the blind flange at the surge tank riser. The flushed water will be collected in a water truck (air gap will be provided between the truck and discharge hose). The collected water will be dechlorinated and spread on site.
- 12. Flushing will continue until the residual chlorine level is 0.5 to 2.0 ppm.
- 13. Let water sit for 24 hours and then obtain a water sample from the pressure transmitter port on the 30" line. This sample will be bac-tee tested by the WUA.

## **GRIEGOS PUMP STATION – DISINFECTINO SOLUTION CALCULATIONS**

### FILL WATER VOLUME CALCULATIONS:

30" waterline: Line length = 48.5 LF = 1,777 gallons of pipe volume

23" waterline (average for transition between 30" and 16"): Line length = 12.7 LF = 274 gallons of pipe volume

16" waterline: Line length = 96.0 LF = <u>998</u> gallons of pipe volume

16" discharge risers: Line length = 30.0 LF = 308 gallons of pipe volume

Total volume = 3,357 gallons (1,777+274+998+308)

### CALCIUM HYPOCHLORITE CALCULATION:

Per dosing chart 50oz of 68% calcium hypochlorite is needed for 25ppm chlorine in 10,000 gallons. This yields .005oz/gallon for 25ppm chlorine.

3,357 gallons fill water x 0.005oz/gallon = 16.8oz of calcium hypochlorite.

# Chemical Dosing Chart for Calcium Hydrochloride

Chemical Dosing Charts Dosage Required to Chemically Treat 10,000 Gallons of Water								
Parameters	To Incr	ease pH	То	Lower p	Н	Daily Test Log		
Parameter - Chemical			<u> </u>	Required Dosage				
						1 ppm	1	0 ppm
	Fr	ee Chlor	ine					
Calcium Hypoc	hlorite (67	7%)				2 oz		1.3 lbs
Sodium Hypoch	nlorite (12	%)				10 fl oz		3.3 qts
Chlorine Gas						1.3 oz		13 oz
	Neut	ralize Cł	lori	ne				
Sodium Thiosu	lfate							1.6 lbs
	Increas	e Total /	Alka	linity				
Sodium Bicarb	onate							1.4 lbs
I	ncrease	Calciun	n Hai	rdness				
Calcium Chloride 77%					1.2 lbs			
Calcium Chlori	de 100%							0.9 lbs
	Incr	ease Sta	biliz	er				
Cyanuric Acid								13 oz
1 lb. = 16 ounces 1 gallon = 128 fluid ounces Formula								
Chemical to		Amount	of		Amoi	unt of Desired		Pool
Add	=	Chemic	al	x		Change	X	Gallons
		(given on	table)			10 ppm		10,000 gallons
Example:			0		nity or	150,000 collor		n noundr)
kaise aikalinit	y irom 50		o ppr	n or aikai	nity of			
Chemical Ad	aed =	1.4 165	X	(100 b	pm - 5 10 ppn	oppm) <b>x</b> n	10,00	00 gallons )0 gallons
Chemical Add	ted =	1.4 lbs	х	50 ppm 10 ppm	X	150,000 gallor 10,000 gallon	ns <b>=</b> S	105 lbs

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One of the best industrial strength chlorinators on the market today, **DryTec® Granular Calcium Hypochlorite** provides effective sanitizing and disinfecting solutions in a host of applications. **DryTec®** can be used in a variety of industrial sectors including water treatment facilities, pulp & paper, meat processing and more.

### THE BENEFITS INCLUDE

 Contains 68% available chlorine to achieve outstanding sanitizing results

- Cost effective
- · Effective alternative to gas and liquid hypochlorite
- · Protects equipment from corrosion
- · Convenient and easy to use
- Supplied in 1, 5, 25, 50 and 100lb. plastic pails
- Requires no storage tanks or secondary containment
- Fast dissolving action provides effective sanitation and outstanding solution consistency
- Cyanuric acid FREE

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GRANULAR CALCIUM HYPOCHLOBITE

NET WT. 100 Ibs. (45.4 kg)

# THE GRANULAR "ALL IN ONE" CHLORINATOR THAT DELIVERS UNSURPASSED CONSISTENT RESULTS

# DryTec<sup>®</sup> Granular Calcium Hypochlorite

With applications in a host of industries **DryTec<sup>®</sup> Granular Calcium Hypochlorite** has unbeatable utility. Versatile and effective, **DryTec<sup>®</sup>** provides unsurpassed industrial sanitizing and disinfecting solutions.

### **APPLICATIONS**

- Industrial Water Treatment
  - · Controls slime growth in cooling towers, ponds and reservoirs
  - Maximizes efficiency
  - Reduces unpleasant odors
- Potable Water
  - Hypochlorination for disinfecting small community water supplies
  - · Low initial investment
  - Maintains economical operating costs
- · Private Water Supplies
  - Sanitizes wells, natural springs, cisterns and storage tanks by destroying harmful microbes
  - · Purifies by destroying harmful organic matter
- Industrial Cyanide Waste
  - · Oxidizes toxic cyanides, producing harmless cyanates
- Pulp & Paper
  - · Effective bleaching agent for all common paper dyes
- Restaurant
  - · Sanitizes food contact surfaces
  - · Sanitizes walls, floors and other environmental surfaces
- Food Safety
  - · Sanitization of porous and nonporous food contact surfaces
  - Sanitization of porous and nonporous non food contact surfaces
  - · Disinfection of nonporous non food contact surfaces
  - · Post Harvest Fruit & Vegetable Wash

### TYPICAL PROPERTIES

<ul> <li>Available Chlorine (% by weight)</li> </ul>	65.00	-
• Water (% by weight)	5.5	8.5
<ul> <li>Iron (% by weight)*</li> </ul>	-	0.05
• Oxides, heavy metals & AI* (% by weight)	-	0.5
<ul> <li>Scale Inhibitor* (target % by weight)</li> </ul>	0.4	0.6

Minimum

Maximum

REGULATORY

- EPA No. 1258-427
- NSF Standard 60, Drinking Water Additives
- Meets AWWA Standard B300-04

### PACKAGING

DryTec<sup>®</sup> Granular Chlorinator is available in 1, 5, 25, 50 & 100lb. plastic pails







#### HYDROSTATIC TEST AND DISINFECTION PLAN:

HYDROSTATIC TESTING CRITERIA: Α.

- STATIC HEAD ON DISCHARGE PIPE = 90 PSI. 1.
- MAX. ALLOWABLE PRESSURE ON OLD DISCHARGE PIPE = 120 PSI. 2.
- MAX. ALLOWABLE WORKING PRESSURE IN SURGE TANK = 153 PSI .3. SHUTOFF HEAD BOOSTER PUMP BP2 = 152 PSI. 4.
- SHUTOFF HEAD BOOSTER PUMP BP3 = 133 PSI. 5.
- STATIC HEAD ON SUCTION PIPING FROM RESERVOIR = 15 PSI. 6.
- PRESSURE CLASS OF ALL NEW BUTTERFLY VALVES = CLASS 150B. 7.
- MAXIMUM TEST PRESSURE ON ALL EXISTING VALVES, USE 150 PSI. 8.
- COORDINATE WITH WATER AUTHORITY GW OPS ON LOCATING POINTS 9. TO FILL, PRESSURIZE, AND MONITOR PRESSURE FOR EACH SEGMENT.
- BLEED OUT ALL AIR FROM PIPING PRIOR TO HYDROSTATIC TESTING. COORDINATE WITH WATER AUTHORITY GW OPS ON USING VALVE TAPS 10. AND OTHER POINTS TO BLEED AIR AND MONITOR LEAKAGE PAST VALVES.
- HYDROSTATIC TEST THE THREE PIPING SEGMENTS SHOWN ON TEST PLAN 1 DRAWING SEQUENTIALLY TO ENABLE TESTING NEW VALVES 11. FOR LEAKAGE IN EACH DIRECTION.
- 12. HYDROSTATIC TEST EACH PIPE SEGMENT FOR AT LEAST 2 HOURS.
- CALCULATE THE ALLOWABLE LEAKAGE USING THE HYDROSTATIC TEST 1.3 SHEET FOUND ON PAGE 801–12 OF THE ALBUQUERQUE STANDARD SPECIFICATIONS. REPAIR AND RETEST IF TEST EXCEEDS THE ALLOWABLE LEAKAGE.
- REPAIR ALL VISIBLE LEAKS REGARDLESS OF THE AMOUNT OF 14. LEAKAGE, AND RETEST.
- 15. WATER FOR DISINFECTING MAY BE USED FOR HYDROSTATIC TESTING.

#### LEGEND: 150 PSI SEGMENT TEST PRESURE

Pl Pl DI sc	JMP BUILDING PLAN – PING IMPROVEMENTS IN SCHARGE GALLERY ALE: 3/8"=1'-0"
R'S SEAL	ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY
	TITLE: GRIEGOS BOOSTER PUMP STATION REHABILITATION DESIGN (REBID)
	PIPE HYDROSTATIC TEST & DISINFECTION PLAN
	VUA PROJECT NO. 1202.022 ZONE MAP NO. F-13-Z SHEET TEST PLAN-1
	UF