



Approved Materials List for Water Production System

Materials Testing and Inclusion Procedures

Manufacturers who would like materials considered for the approved materials list shall:

1. Comply with all the design criteria set forth for the approved materials.
2. Supply, at the manufacturer's expense, the materials to be tested. (Quantity to be determined by the City of Goodyear Public Works Department)
3. Any project using brass or bronze service material that comes in contact with potable water must meet AWWA C-800, NSF 61-8 and Federal Law.
4. Preference will be given to materials manufactured and assembled in the United States.

Once the materials have been received, the Water Production Division will visually inspect materials for defects and compliance with all City standards. The Water Production Division will install or oversee the installation of all materials in the Production-Treatment system or other test sites as determined to be in the best interest of the City. Materials will be tested and evaluated for a minimum of one year, commencing on the date of installation. Evaluations will include but are not limited to:

1. Ease of installation
2. Availability of parts
3. Operational issues
4. Quality of manufactured materials
5. Number of moving parts
6. Reliability of service

If the materials supplied, at any time in the testing period fail, the testing will be concluded immediately. If the materials successfully complete the testing period, Water Production will recommend the product to be included in the City of Goodyear Approved Materials List.

The Approved Materials List will be updated annually at the first of each year. New Manufacturers and Models that have been approved by the City for inclusion on the list will be added at that time.

A maximum number of manufacturers will be approved for each category. Once a category has been satisfied, manufacturers successfully completing the test requirements will be added to a Pending Approved Materials list. Pending materials will be listed sequentially according to successful completion of testing. Materials presently on the Approved Materials List may be omitted from the list due to:

1. Change in service/availability.
2. Change in product design.
3. Bankruptcy
4. Consistent product failure
5. Any other reason as deemed appropriate by the Public Works staff.

If an approved material is taken off the list for any of the above reasons, the first pending material will be added to the list.

Water Production and Treatment Facilities Materials

Fire Hydrants (5 Manufacturers)

Requirements

- Meet AWWA Standard C502 and C550
- UL 246 approved
- Dry barrel hydrant
- Method of lubrication shall be food grade oil or grease
- Operating nut shall be 1-1/2 inches pentagon (standard)
- Direction of opening shall be counterclockwise (left)
- Hose and pumper threads (male) shall be brass and field replaceable
- Threads shall be "National Standard"
- 2 hose nozzles (2-1/2 inches) and 1 pumper nozzle (4-1/2 inches)
- Inlet connection shall be mechanical joint
- Shall include "traffic flange"
- Size of hydrant valve opening shall be 5-1/4 inches
- All public hydrants shall be painted yellow
- All public hydrants shall be painted red

Manufacturer	Model
Clow	Medallion
Kennedy	Guardian K-81D
Mueller	Super Centurion
Waterous	WB-67
U.S. Pipe	Sentinel

Fire Hydrant Grade Adjustments (1 Manufacturers)

Requirements

- Extensions shall **not** be used to reach finish grade for **new** fire hydrant installations.
- Where the finish grade around an **existing** fire hydrant is changed, an extension kit, installed per the manufacturer's specifications, may be used.
- Only one extension may be used per hydrant. The extension kit **must** be manufactured by the original fire hydrant manufacturer; no after market parts are allowed.

Manufacturer
Assured Flow Sales

Model
Grade Loc

Fire Hydrant Locks (1 Manufacturer)

Requirements

- Must prevent unauthorized operating of hydrants
- Readily attaches to all hydrant makes and models
- Must be strong enough to withstand vandalism and weather extremes
- Hydrant must be operated without removal of lock utilizing magnetic type wrench only

Manufacturer
Hydra-Shield

Model
Custodian

Fire Hydrant Grease (2 Manufacturers)

Manufacturer
Mystik
Clarion

Model
FG-2 Food Machinery Grease
Food Machinery Grease, No. 2

Gate Valves (6 Manufacturers)

Requirements

- Meet AWWA Standards C515 and C550
- NSF 61 approved
- UL 262 approved
- Valves body shall be ductile iron and meet or exceed reduced wall standards
- Valve wedge shall be fully encapsulated with nitrile rubber
- Valves shall be epoxy-coated inside and out
- Stem o-rings shall be replaceable with the valve fully open at rated working pressure
- Direction of open shall be counterclockwise (left)
- All fasteners shall be stainless steel

Note: The above requirements also apply to OS&Y and NOS&Y valves utilized in water production pumping stations.

Manufacturer
American Flow Control
Clow
M&H
Kennedy
Mueller
US Pipe

Model
AFC 2500-1
Style 2638 or 2639
Style 7000
Style 7000
Series 2361 or 2362
Model USP1

Insertion Valves (1 Manufacturer)

Manufacturer

Romac

Model

QuikValve Valve #361 Sleeve #310

Butterfly Valves (6 Manufacturers)

Requirements

- Butterfly valves are required on distribution mains larger than 16 inches.
- Butterfly valves are required on all above ground lines 8" and larger that are installed at well sites and pump stations.
- All above ground valves require hand wheels or actuators
- Meet applicable AWWA Standards C504 Standard and C550
- NSF 61 approved
- UL approved
- The valve disc shall be fully encapsulated in nitrile rubber
- Valves shall be epoxy coated inside and out
- All fasteners shall be stainless steel
- Direction of open shall be counterclockwise (left)
- Disk rotation to be 90 degrees with open/close indicator on gear box
- Valves shall have a positioning indicator and shall be motorized actuator compatible

Manufacturer

Clow
Mueller
Kennedy
M&H
Grinnell
Keystone

Model

Series 4500 or 1450
Lineseal III
Series 4500 or 1450
Series 4500 or 1450
Series 8000
No Preference

Valve Actuators (2 Manufacturers)

Requirements

Manufacturer

Rotork
Auma
Bernard
Bernard

Model

IQT Series
SQ/SQR
0A8MG-025-96023 (Ro systems only)
0A3-5-92012F (Ro systems only)

Pressure Reducing, Sustaining and Altitude Valves (2 Manufacturers)

Requirements

Ductile iron body
 Diaphragm type, class 150
 Epoxy coated inside and out
 Tested at a minimum pressure of 175 psi
 150 lb flanged ends

<u>Manufacturer</u>	<u>Model</u>
CLA-VAL	No. 92-01, 50-01, and 650-01
AMES	LF910GD/LF610GD, LF912GD/LF612GD, and LF920GD/LF620GD

Air/Vacuum Release Valves (2 Manufacturers)

Requirements

<u>Manufacturer</u>	<u>Model</u>
ARI	No. D-040NT – Combination air valve “Barak” ARI Bug Screen (potable use)
ARI	No. D-060-C - Comb. air valve (high flow)
ARI	No. D-025P/SS w/ Threaded Inlet and ARI Bug Screen (Raw Water Use)

Water Meters (4 Manufacturers)

Requirements

• Appropriate make, model, and manufacturer is to be determined by the Public Works Department.
 All meters are supplied by Public Works, except for magnetic meters.

<u>Manufacturer</u>	<u>Model</u>
Positive Displacement Meters 3/4" - 2"	
Sensus	SR 2, AccuStream, Ipearl
Neptune	T-10
Turbo Meters 1-1/2" - 8"	
Sensus	Omni Series (T2)
Neptune	HP-Turbine
Compound Meters 3" - 6"	
Sensus	Omni Series (T2)
Neptune	Tru/Flow

Fireline Fire Service Meters 6"

Sensus Compact Fireline w/ULFM Strainer

Detector Check Meters

Neptune T-10

Fire Hydrant Meters

Neptune 3" Fire Hydrant Meter

Magnetic Meters

Endress & Hauser No Preference

Ultra - Mag No Preference

Radio Read Meter Reading Devices (2 Manufacturers)

<u>Manufacturer</u>	<u>Model</u>
Sensus	520 Touch Coupler MXU
Neptune	E-coder R900i

Water Service Saddles (3 Manufacturers)

Requirements

- Meet applicable AWWA C800 and NSF 61 Standards
- Double strap brass saddle
- Thread shall be female iron pipe

<u>Manufacturer</u>	<u>Model</u>
Ford	Style 202B
AY McDonald	3826
Mueller	BR2B

Corporation Stops (3 Manufacturers)

Requirements

- Meet applicable AWWA C800 and NSF 61 Standards
- Inlet threads shall be iron pipe
- Shall utilize a ball valve
- For service line installations, the outlet shall utilize a compression style pack joint with a set screw
- For downstream end of blow off installations, the outlet shall utilize male iron pipe threads

<u>Manufacturer</u>	<u>Model</u>
Ford	FBRW1100-TA
AY McDonald	4104B-22
Mueller	P25028-10

Water Service Lines

Requirements

- Minimum size service line is 1"
- Services 2" and smaller require type "K" soft seamless annealed copper
- Services 3" and larger require ductile iron pipe

Meter Valves/Curb Stops (3 Manufacturers)

Requirements

- Meet applicable AWWA C800 and NSF 61 Standards
- Angle stop ball valve with 90 degree Tee Head rotation
- Padlock wings
- The inlet shall utilize a compression style pack joint with set screw
- 1" curb stops shall have a swivel meter coupling to allow for meter installation
- 2" curb stops shall be flanged, have elongated bolt holes allowing for either 2" and 1 1/2" meters, and allow for drop in rubber gaskets

Manufacturer	Model
Ford	BFA43-777W, BA43-444W
AY McDonald	4602B-22
Mueller/Jones	P-24258, P-24276 / E-1963, E- 1975

Water Mains (3 Manufacturers)

Requirements

- All mains shall be ductile iron pipe
- Meet ANSI/AWWA Standard C151/A21.51-02
- Minimum class 150

Manufacturer	Model
Griffin Pipe Products	N/A
American Cast Iron Pipe Co.	N/A
US Pipe	N/A

Tapping Sleeves (1 Manufacturers)

Requirements

- Meet AWWA C223-02
- No Size on size applications

Manufacturer	Model
Powerseal	3490AS

Full Circle Repair Clamps (3 Manufacturers)

Requirements

- Meet AWWA Standard C207

<u>Manufacturer</u>	<u>Model</u>
Romac	SS1, SL1
Ford (Single Band)	F1
Smith-Blair	221, 226, 229, 238

Flex Couplings (3 Manufacturers)

Requirements

<u>Manufacturer</u>	<u>Model</u>
Romac	XR-501 Extended Range
Ford	FC2W Transition Coupling
Total Piping Solutions	HyMax 2000 Series

Flange Coupling Adapters (3 Manufacturers)

Requirements

<u>Manufacturer</u>	<u>Model</u>
Smith-Blair	912
Romac	FC400/FCA 501/RFCA
Ford	FFCA

Restrained Joints Mechanical Style (4 Manufacturers)

Requirements

<u>Manufacturer</u>	<u>Model</u>
EBBA Iron	1100 Series
Romac	Roma Grip
Ford	UFR 1400
Star Pipe Products	Stargrip Series 3000
Griffin Pipe	Tough Grip

Restrained Joints Gasket Style (5 Manufacturers)

Requirements

Manufacturer	Model
U.S. Pipe	Field Lock Gasket
American Cast Iron Pipe Co.	Flex Ring Joint
American Pipe	Fast Grip Gasket
McWane	Sure Stop 350 Gasket
Griffin Pipe	Talon Gasket

Water Boxes

Requirements

3/4" - 2" Meter Boxes

- Pre-cast concrete meter boxes
- Steel lid with a 1-7/8" pre-drilled hole
- #2 meter box shall be used for 3/4" and 1" water meters
- #4 meter box shall be used for 1-1/2" and 2" water meters and Air Relief Valves (ARV)

Meters 4" and above in Meter Vault

- Pre-cast concrete vault with aluminum lids is required per C.O.G. Standard Detail G-3313

Valve Boxes

- 8" blue PVC C-900 Riser Material
- Seamless pipe
- In applications that require a seam a sealed bell joint is required
- Installed per M.A.G. Detail 391-1 Type A with cast iron frame and cover with concrete collar

Air Release Valves

- Pre-cast concrete meter boxes
- Polymer lid with no hole
- #4 meter box

PRV Vaults 4" and above

- A pre-cast concrete vault with aluminum lids per City of Goodyear detail G-3314

Electronic Locators (1 Manufacturer)

Requirements

- Passive (non-programmable 1408-XR) locators are to be used on straight lengths of pipe only. See
- Non-Passive (programmable 1408-XR/ID) locators are to be used and programmed at any change in direction
- Self leveling
- Operate at frequency 145.7 KHz
- Operate at bury depth of at least 4 feet

Manufacturer	Model
3M	1403-XR (passive)
3M	1423-XR/ID (ID ball marker)

Debris Caps (1 Manufacturer)

Requirements

- Hollow member having a cylindrical outer surface
- Flexible skirt that provides an outward seal
- Rated to 50 pounds at a loading rate of 1 inch / minute
- Molded per General Electric ABS #HIM 4500
- Retaining prong for locating coil
- 3M locating device
- Blue handle

Manufacturer
SW Services Inc.

Model
DC825 (blue handle) w/3M EMF 1413-XR
Locating Coil

Backflow and Cross-Connection Devices

Requirements

- Refer to the approved assemblies list published by the USC Foundation for Cross-Connection Control and Hydraulic Research for backflow prevention and cross-connection devices and assemblies that are approved for use in the City.

Water Quality Sampling Station (1 Manufacturer)

Requirements

- Koraleen XLT Sampling Station
- Flush mounted lock
- Sample valve stainless steel, ball valve 1/2" x 3/8" 800 psi
- Flush mounted gem cam lock with tubular key
- All units keyed alike
- The sampling station shall be 4 feet tall and 6 inches in diameter

Manufacturer
Water Plus Co.

Model
301W

Automatic Flushing Device (1 Manufacturers)

Requirements

- All fittings must be brass
- Built-in sampling port
- Lockable and all units are keyed alike

Manufacturer
Kupferle

Model
9800-WC Eclipse

Well Site and Pump Station Equipment

Chlorination Equipment (1 Manufacturers)

Requirements

<u>Manufacturer</u>	<u>Model</u>
Per City Approval	N/A
Fiberglass Building	WFS 1012

Well and Booster Pumps (4 Manufacturers)

Requirements

- Pump equipment shall be water lubricated or submersible
- Pump impellers shall be stainless steel material

<u>Manufacturer</u>	<u>Model</u>
Goulds	Water lubricated and submersible
National	Water lubricated and submersible
American Turbine	Water lubricated and submersible
Grundfos	Water lubricated and submersible
HydroFlo	Water lubricated and submersible

Chemical Feed Pump/Motor (Set) (2 Manufacturers)

Requirements

<u>Manufacturer</u>	<u>Model</u>
Pulsa Feeder pump	25HJ
Baldor Motor	IDWNM3546T
Seepex pump	Progressive cavity to meet application with VFD drive

Well and Booster Motors (5 Manufacturers)

Requirements

- Booster motors shall be hollow shaft
- Booster motors shall be equipped with anti-reverse ratchet locking system

<u>Manufacturer</u>	<u>Model</u>
US Motors	High Efficiency
GE Motors	N/A
Franklin	Submersible
Hitachi	Submersible
Well 18	Submersible

Well Casing (1 Manufacturers)

Requirements

- Blank casing shall be High Strengh Low Alloy (HSLA)
- Well Screen shall be louvered stainless Steel grade 3-14

Manufacturer	Model
Roscoe Moss	Spiral seam

Variable Frequency Drives (VFD) (5 Manufacturers)

Requirements

Manufacturer	Model
ABB Drive (for R.O.)	No preference
Allen Bradley (for Wells)	Rockwell
Toshiba (for Wells)	No preference
Safetronics (for Boosters)	No preference
Altivar (for Boosters)	Square D

Pump Shaft / Seals (3 Manufacturers)

Requirements

- Motor shall be a hollow shaft with one piece shaft, (IE. No couple between the stuffing box plate and the motor)
- Shaft shall have a keyway, for Boosters use 1-1/2 or 2-inch diameter made of stainless steel

Manufacturer	Model
Chesterton Seals	155-10 Pat. Full mechanical seal
John crane Seals	5611 series full seal
Champion Seals	401 cartridge seal

Well Air Compressors (2 Manufacturers)

Requirements

- Use these models unless application by design requires larger model.

Manufacturer	Model
Ingersol Rand	2475X5 Food grade oil lubricated
Champion	BE-2B-2-3 Food grade oil lubricated

Instrumentation

Process Logic Controller (PLC) (1 Manufacturer)

Requirements

<u>Manufacturer</u> Allen-Bradley	<u>Model</u> L33E Compact Logix/1756-L72 Control Logix or equivalent
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Human Machine Interface (HMI) (1 Manufacturer)

Requirements

<u>Manufacturer</u> Allen-Bradley	<u>Model</u> Panel View Plus 1000 , 10.4-inch touchscreen
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I.O Cards (1 Manufacturer)

Requirements

<u>Manufacturer</u> Allen-Bradley	<u>Model</u> Analog Cards 14 bit resolution or better
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Program (1 Manufacturer)

Requirements

<u>Manufacturer</u> Allen-Bradley	<u>Model</u> Rslogix 5000 Version 20.01
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Radios (1 Manufacturer)

Requirements

<u>Manufacturer</u> GE MDS	<u>Model</u> Inet II 900
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Software (1 Manufacturer)

Requirements

<u>Manufacturer</u> Rockwell	<u>Model</u> SCADA-FT View, Studio Enterprise SE, F FT View Server SE 250, FT View Client
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Turbidity Meter (1 Manufacturer)

Requirements

Manufacturer
HACH

Model
1720E Display Se100

Nitrate Analyzer (1 Manufacturers)

Requirements

Manufacturer
HACH

Model
FSPUVNitrate Display Se100

Chlorine Analyzer (1 Manufacturers)

Requirements

Manufacturer
HACH

Model
Total/Free - CL17

pH Meter (1 Manufacturers)

Requirements

Manufacturer
HACH

Model
SC-200

Conductivity Meter (1 Manufacturers)

Requirements

Manufacturer
HACH

Model
SC-200

Tank Level Indicator (1 Manufacturers)

Requirements

Manufacturer
Siemens

Model
Hydro Ranger 200

Pressure Transmitters (1 Manufacturers)

Requirements

Manufacturer

Endress Houser

Model

Cerabars 0-24 with block and bleed valve

Well Level Transducer (1 Manufacturers)

Endress Houser

Water Pilot FMX 21, Cable length as needed