



UTILITY SERVICES DEPARTMENT

Approved Materials List for Water Distribution, Water Production, & Sewer Collections

Materials Testing and Inclusion Procedures

The following process shall be followed by manufacturers who would like new materials to be considered for approval and adoption into this approved materials list. While this process identifies a path towards approval and adoption, there are limiting factors identified herein that may preclude a product from inclusion on the list.

1. Provide to the Town a specification sheet for materials requested to be included in the Town's list.
 - 1.1 - Materials must comply with all design and manufacturing criteria identified in this document. Non-compliant materials will not be allowed to move forward in the process.
 - * 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.
 - * Unless otherwise specifically identified, preference will be given to materials and components that are manufactured and assembled in the United States.
2. Supply and/or install the materials to be tested. (Quantity to be determined by the Town of Queen Creek Utility Services Department)
 - 2.1 - Materials for testing shall typically be supplied and installed at the manufacture's expense. The Town may choose to purchase and/or install materials the Town desires to be tested.
3. Once the materials have been received, Town staff will visually inspect materials for defects and compliance with all Town standards.
4. Representatives from the Town division responsible for a material being installed for testing, must oversee the installation for the material to be considered in the program. Materials installed without the oversight of the respective division personnel will not be considered. Oversight by the Town's construction inspection staff of a material's installation does not automatically satisfy this installation oversight requirement.
5. Materials will be tested and evaluated for a minimum of one year, commencing on the date of installation.
6. At a minimum, Town staff shall evaluate the proposed material according to the following criteria:
 - a. Ease of installation
 - b. Operational issues
 - c. Quality of manufactured materials
 - d. Number of moving parts
 - e. Reliability of service
 - f. Manufacture's Customer Service
 - g. Country of manufacture and assembly
7. Materials that fail at any time during the testing period will not be considered for adoption.
8. Materials that successfully function thru the duration of the testing period and receive high scores in the other evaluation criteria will be recommend to be included in this Approved Materials List.
9. Unless otherwise noted, a maximum of three (3) products will be approved for each category. Once the maximum number of approved materials is filled in a specific category, new materials successfully completing the testing and evaluation requirements will be added to a Waiting List. Materials on the waiting list can move onto the Approved Materials List if one of the existing materials on the list is deemed deficient.
10. Materials will be added to the Approved Materials List according to their evaluation scores and not according to a chronological order. If an installed material fails at any time while on the Waiting List, the material shall no longer be considered for addition to the Approved Materials List.
11. Materials presently on the Approved Materials List or on the Waiting List may be removed if the Town determines that they are deficient according to one or more of the following criteria are met:
 - a. Change in service/availability
 - b. Change in product design
 - c. Bankruptcy
 - d. Consistent product failure
 - e. Other reasons related to reliability, functionality, use, and application deemed unacceptable by the Town.
12. The Approved Materials List will be updated annually at the first of each year. New Manufacturers and Models that have been approved by the Town and are on the Waiting List will be added at that time.



UTILITY SERVICES DEPARTMENT

Approved Materials List for Water Distribution, Water Production, & Sewer Collections

Materials for Water Distribution

Fire Hydrants

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 private hydrants shall be painted red

Manufacturer	Model
Kennedy	Guardian K-81D
Mueller	Super Centurion
Waterous	Pacer

Fire Hydrant Grade Adjustments

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 aftermarket parts are allowed.

Manufacturer	Model
Assured Flow Sales (Available)	Grade Loc (Available)
(Available)	(Available)

Fire Hydrant Grease

Manufacturer	Model
Mystik	FG-2 Food Machinery Grease
Clarion (Available)	Food Machinery Grease, No. 2 (Available)

Gate Valves (Up to 4 Allowed)

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	Model
American Flow Control	AFC 2500-1
M&H	Style 7000
Kennedy	Style 7000
Mueller	Series 2361 or 2362

Insertion Valves (Only 1 Allowed)

Manufacturer	Model
Romac	QuikValve Valve #361 Sleeve #310

Butterfly Valves (Up to 6 Allowed)

Requirements

- OS&Y valves are required on all above ground lines 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	Model
Clow	Series 4500 or 1450
Mueller	Lineseal III
Kennedy	Series 4500 or 1450
M&H	Series 4500 or 1450
Grinnell	Series 8000
Keystone	KLOK Series

Pressure Reducing, Sustaining & Altitude Valves

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

Manufacturer	Model
Bermahd	718
(Available)	(Available)
(Available)	(Available)

Air/Vacuum Release Valves (Only 1 per Type Allowed)

Requirements

Type	Manufacturer	Model
Well Applications	ARI	No. D-040PLVT – Combination air valve "Barak" ARI Bug Screen (potable use)
High Flow	ARI	No. D-060-C - Comb. air valve (high flow)
Raw Water	ARI	No. D-025P/SS w/ Threaded Inlet and ARI Bug Screen
Distribution System	ARI	D040P

Water Meters (Allowed as Identified)

Requirements

- The following is our standard meters, the final make, model, and manufacturer shall be determined by the Utility Services Department.
- All meters shall be supplied by Utilities, except for magnetic meters in well sites and booster stations.

Type	Manufacturer	Model
3/4" to 1" - Magnetic	Sensus	iperl
1-12" to 8" - Turbo	Sensus	Omni Series (T2)
3" to 8" - Compound	Sensus	Omni Series (C2)
Fire Hydrant	Sensus	3" H2 Meters
Fire Hydrant	Aqualine	2" Straight valve with Handwheel
8" and larger - Magnetic	Endress & Hauser	Case by case basis
	Ultra - Mag	Case by case basis
Detector Check	(TBD)	(TBD)

Radio Read Meter Reading Devices (Only 1 Allowed)

Manufacturer	Model
Sensus	520M Touch Coupler MXU

Water Service Saddles

Requirements

- Meet applicable AWWA C800 and NSF 61 Standards
- Double strap brass saddle or Single Strap, Stainless options as well
- Thread shall be female iron pipe

Manufacturer	Model
Ford	Style 202B/202BS
AY McDonald	3826/3805
Mueller/Jones	BR2B/BR2S/J969/J965

Corporation Stops

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 joint with no set screw
- For downstream end of blow off installations, the outlet shall utilize male iron pipe threads

Manufacturer	Model
Ford	FB1100-NLQ
AY McDonald	4704BQ
Mueller/Jones	B25028-10/E195SG

Water Service Lines

Requirements

- Minimum size service line is 1"
- Services 2" and smaller require type "K" soft seamless annealed copper. Longer than 60' 1.5" or 2" must be one piece municipex
- Services 3" and larger require ductile iron pipe
- Non Metallic Service lines must have 12awg solid core tracer wire.

Meter Valves/Curb Stops

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 joint
- 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	BFA43-777NL, BA43-444NL
AY McDonald	4602B-22
Mueller/Jones	B-24258, B-24276/E1963WSG,E1975WSG

Water Mains (Allowed as Identified Below)

Requirements

- All mains smaller than 16" shall be C-909 Pressure Class 235 & 305 psi
- All 16" mains shall be C-909 Pressure Class 165 psi
- HDPE DR-11. All HDPE must have blue Markings for water install facing up.
- Ductile Iron Class 350 or Equal with Field lock gaskets.

Type	Manufacturer	Model
C-909/HDPE	JM Egale	N/A
HDPE	WL Plastics	N/A
Ductile	McWane	N/A
Ductile	Acipco	N/A
Ductile	Performance Pipe	N/A
Ductile	US Pipe	N/A

Tapping Sleeves (Up to 5 Allowed)

Requirements

- Meet AWWA C223-02

Manufacturer	Model
Powerseal	3490AS
Smith Blair	663
JCM	432
Romac	SST III
Cascade	CST-EX

No Size on Size

Full Circle Repair Clamps (Up to 4 Allowed)

Requirements

- Meet AWWA Standard C207

Manufacturer	Model
Romac	SS1, SL1
Ford (Single Band)	F1
Smith-Blair	221, 226, 229, 238,239
JCM	101/102

Flex Couplings

Requirements

Manufacturer	Model
Romac	XR-501 Extended Range
Ford	FC2W Transition Coupling
Krausz	HyMax 2000 Series

Flange Coupling Adapters

Requirements

- All Flange Adapters must have built-in restraints

Manufacturer	Model
Romac	RFCA/Alpha
Hymax (Available)	Hymax Grip (Available)

Restrained Joints Mechanical Style (Only 2 Allowed)

Requirements

- Joint restraints must have mechanical connection between lug and bolt.
- Lug can not be held to the gland using glue or wedges.

Manufacturer	Model
Star Pipe Products	Stargrip Series 3000/4000/909
Tyler Union	Tough Grip Universal

Bell Restraints PVC/Ductile (Up to 5 Allowed)

Requirements

Manufacturer	Model
EBBA Iron	1900
Romac	611
Ford	1300
Star Pipe Products	1000
Tyler Union	3000

Restrained Joints Gasket Style (Up to 5 Allowed)

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 Meter Boxes (Only 1 Allowed per Type)

Requirements

3/4" - 2" Meter Boxes

- Polymer boxes
- Polymer lid with a 1-7/8" pre-drilled hole and insert for metal detector
- #2 meter box shall be used for 3/4" and 1" water meters
- #3 meter box shall be used for 1-1/2" and 2" water meters
- All other boxes shall be approved on a case by case basis.

Type	Manufacturer	Model
#2	DFW	DFWA2C4-12-4T 63D NHK
#3	DFW	DFWA3C4-12-4T 63D NHK

Valve Boxes

Requirements

- Tops and Bottoms to be Domestic
- 24 pound universal lid required in all arterial streets
- Installed per Town of Queen Creek detail QW302 with concrete collar

Air Release Valves

- #2 meter boxes
- Polymer lid with no hole
- #4 meter box

PRV Vaults 4" and above

- A precast concrete vault with aluminum lids per Town of Queen Creek

Manufacturer	Model
Tyler Union	6855/145325/145451
Bingham & Taylor	GRE-5B64S/5T55SCL35/5LHVTSK4WCL35/CUL5LWRBLACK
EJ Iron works	6800/8555/6800

Tracer Wire (All Allowed that Meet Town Specifications)

Requirements

- #12 AWG wire
- 2,500-foot minimum roll length
- Connectors - Hughes Dri-Splice DS-100; DS-400; DS-500;

Electronic Locators (Only 1 Allowed)

Requirements

- Passive (non-programmable 1408-XR) locators are to be used on straight lengths of pipe only. See TOQC standard details.
- 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
- Only used when approved by T.O.Q.C

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

Debris Caps

Requirements

- Blue handle or strap if using MUD PLUG

Manufacturer	Model
SW Services Inc.	DC825 (blue handle) w/3M EMF 1413-XR Locating Coil
Infact Corp.	MUD PLUG
(Available)	(Available)

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.

Water Quality Sampling Station (Only 1 Allowed)

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	Model
Water Plus Co.	301W

Automatic Flushing Device

Requirements

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

Manufacturer	Model
Kupferle	9800-WC Eclipse
(Available)	(Available)
(Available)	(Available)

END OF SECTION



UTILITY SERVICES DEPARTMENT

Approved Materials List for Water Distribution, Water Production, & Sewer Collections

Materials for Water Production (Well Sites & Pump Stations)

Mechanical Valve Actuators (Only 1 Allowed Per Type)

Requirements

Type	Manufacturer	Model
10" & Greater	Rotork	IQT-2000 FA14 120/1/60 WD 310B0000
8" & Smaller	Rotork	IQT-1000 with 4-20 ma card
	Auma	SQ/SQR
	Rexa	(TBD)

Actuator Valves and Hardware (Only 1 Allowed)

Requirements

- For Dual Actuated Valves: Tees shall consist of Two (2) DL Flanged Primed w cement lined & 8 sets of 316 Stainless Steel bolts and gaskets

Manufacturer	Model
EKN (FLGxFLG) <i>* Linkage Assembly</i>	Per Diameter 304 Stainless Steel 3-way butterfly - 8" to 12" valves

Existing Tank Interior Ceiling & Rafter Coatings AND All New On-Site Tank Interior Coatings

Requirements

- Per Town Coating Specifications
- Primer shall be 6 to 8 Mils DFT
- Finish shall be 6 to 8 Mils DFT
- Minimum Profile of 3.0
- Stipe Stripe Coat to be applied prior to primer coat. Applies to all welds, bolts, nuts or hard edges of all roof plates; shall be installed by brush only; shall be either the material being used as the finish coat or the manufactures recommended equal which can be applied in conjunction with the specified coating to be installed.
- Shop Prime only applies to materials primed at the shop.
- When the primer coating is applied at an approved shop, the minimum profile can be reduced to 2.0, the shop primer mils shall be 2.5 to 4, the stripe coat shall be 2 to 4 mils, and a 6 to 8 mil Intermediate Material shall be applied prior to the finish coat.

Manufacturer	Surface Prep.	Shop Primer	On-Site / Intermediate Primer	Finish
PPG	SSPC-SP10	Amercoat 68HS	Amerlock 2; Amerlock; 400VOC	Amerlock 2; Amerlock; 400VOC
Tnemec	SSPC-SP10	94 H20	N140	N140
Sherwin Williams	SSPC-SP10	Corothane I, Galvapac 1K	Macropoxy, 646PW	Macropoxy, 646PW

Existing Tank Interior Shell & Floor Coatings

Requirements

- Per Town Coating Specifications
- Primer/Finish shall be 20 to 30 Mils DFT
- Minimum Profile of 3.0
- Stipe Stripe Coat to be applied prior to primer/finish coat if achievable. Applies to all welds, bolts, nuts or hard edges of all roof plates; shall be installed by brush only; shall be either the material being used as the finish coat or the manufactures recommended equal which can be applied in conjunction with the specified coating to be installed.

Manufacturer	Surface Prep.	Primer/Finish
PPG	SSPC-SP10	Amerthane 490
Tnemec	SSPC-SP10	Series 22
Sherwin Williams	SSPC-SP10	Poly-Cote 11

Existing Tank Exterior, Piping, and Other Miscelaneous Steel Structure Coatings (Atmospheric Exposure)

- Per Town Coating Specifications
- Primer/Finish shall be 20 to 30 Mils DFT
- All bare spots shall be spot primed by brush only with the same prime coat as the chosen coating system.
- Stipe Stripe Coat to be applied prior to primer coat. Applies to all welds, bolts, nuts or hard edges of all roof plates; shall be installed by brush only; shall be either the material being used as the finish coat or the manufactures recommended equal which can be applied in conjunction with the specified coating to be installed.

Requirements

Manufacturer	Surface Prep.	Primer	Finish
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PPG	SSPC-SP2/3	Amerlock 400 (2 to 4 mils)	Amershield; PSX700 (3 to 6 mils)
Tnemec	SSPC-SP2/3	Chembuild 135 (4 to 6 mils)	1095 or 1028 (3 to 5 mils)
Sherwin Williams	SSPC-SP2/3	Macropoxy646 (5 to 10 mils)	Acrolon 218 (3 to 6 mils)

New Tank Interior Shop Prime & Subsequent Coatings

Requirements

- Per Town Coating Specifications
- Primer shall be 2.5 to 8 Mil DFT
- Finish shall be 6 to 8 Mil DFT
- Minimum Profile of 2.0
- Stipe Stripe Coat to be applied prior to primer coat. Applies to all welds, bolts, nuts or hard edges of all roof plates; shall be installed by brush only; shall be either the material being used as the finish coat or the manufactures recommended equal which can be applied in conjunction with the specified coating to be installed.

Manufacturer	Surface Prep.	Primer	Finish
PPG	SSPC-SP10	Amerlock	Amerlock 2; Amerlock; 400VOC
Tnemec	SSPC-SP10	N140	N140
Sherwin Williams	SSPC-SP10	Macropoxy, 646PW	Macropoxy, 646PW

New Tank Exterior, Piping, and Other Miscellaneous Steel Structure Coatings (Atmospheric Exposure)

Requirements

- Per Town Coating Specifications
- Primer shall be 5 to 7 Mil DFT
- Finish shall be 3 to 5 Mil DFT
- Minimum Profile of 2.0
- Stipe Stripe Coat to be applied prior to primer coat. Applies to all welds, bolts, nuts or hard edges of all roof plates; shall be installed by brush only; shall be either the material being used as the finish coat or the manufactures recommended equal which can be applied in conjunction with the specified coating to be installed.
- SP2 or SSPC-SP3 may be utilized if abrasive blasting is not feasible given the location of the structure

Manufacturer	Surface Prep.	Primer	Finish
PPG	SSPC-SP6	Amerlock 2; Amerlock 400	Amershield; PSX700
Tnemec	SSPC-SP6	N140 or N69	1095 or 1028
Sherwin Williams	SSPC-SP6	Macropoxy646	Acrolon 218

Flexible Coupler

Requirements

- 10" flange x grip for 10" well discharge

Manufacturer	Model
KRAUSZ HYMAX (Available)	K130561027016 (10 FLG ADPT 10.65-11.55) (Available)
(Available)	(Available)

PACO Inline Boosters and Parts (30/40/50/100hp)

Requirements

Parts	Manufacturer	Model
Pump	Paco	Cat No. 16-40957-1A0101-1901E, SN S0018680B
4"x6" eccentric dismantling joint	KRAUSZ	SP-K92156040612
Bronze wear ring kit	Grundfos	91910567
Shaft seal kit ceramic carbon	Grundfos	91910609 Seal Kit, 9.5"
Sleeve kit	Grundfos	91843858
Volute	Grundfos	91839969

Sound Enclosure

Requirements

Manufacturer	Model
Commercial Acoustics	Per TOQC standard

Flow Control Stations

Requirements

Equipment	Manufacturer	Model
Valve	Rotork	IQT-2000 FA14 120/1/60 WD 310B0000

Meter
Pressure Transducer
Actuator
PLC

Endress & Hauser
Endress & Hauser
EKN (FLGxFLG)
See PLC Package Below

Magneitc (Match Diameters)
Water Pilot FMX 21, Cable length as needed
Match Diameters

Pressure Reducing Valves (PRVs)

Requirements

Manufacturer	Model
Bermad	Requires USD Review and Approval
ClaVal (Available)	Requires USD Review and Approval (Available)

Well / Site Meters (Only 1 Allowed)

Requirements

Manufacturer	Model
Endress/Hauser	P-300 with Ethernet card (all sizes)

Generators (Only 2 Allowed)

Requirements

Manufacturer	Model
Cummins/Onan	Diesel, Per Design Engineer
Catapiller	Diesel, Per Design Engineer

Air Conditioners

Requirements

Manufacturer	Model
Refer to facilities Approved Materials list	According to size of cooling space, per design engineer

Vertical Turbine Well Shaft Mineral Oil

Requirements

- Meet or exceed U.S. Food and Drug Administration (FDA) requirements:
 - o For direct use in food, 21 CFR 172.878
 - o For applications where incidental food contact may occur, 21 CFR 178.3570
 - o For use as technical white oils, 21 CFR 178.3620 (b)
 - o For use in animal feed, 21 CFR 573.680
 - o For use as a plasticizer in polymeric substances, 21 CFR 178.3740
 - o Meet U.S. Pharmacopeia (USP) / National Formulary (NF) requirements for mineral oils / light mineral oils
 - o Are registered by NSF as H1 (where incidental food contact may occur) and 3H (release agents where direct contact with food may occur)
 - o Are Kosher Certified

Automatic Gate Opener (Only 1 Allowed)

Requirements

Manufacturer	Model
LiftMaster	Per Manufactures Recommendation According to Weight and Dimensions of Gate

Check Valves (Only 1 Allowed Per Type)

Requirements

Type	Manufacturer	Model
Well discharge manifold	Val-matic	SP-V7210
Booster discharge	Val-matic	Silent check

Chlorine Room Enclosure (Only 1 Allowed)

Requirements

- Size - 8x10
- Roof Type - Standard
- Siding Type - Siding
- Siding Color - Cocoa Cream

- Trim Color - Waves of Grain

Manufacturer	Model
Tuffshed	TR-800

Chemical Feed Pump Motor (Only 1 Allowed Per Type) - Nate

Requirements

Type	Manufacturer	Model
Constant	Grunfos	PN-SN A-96084265
VFD	Axiall LLC	3075MD
VFD Drive	Schneider	ATV320 Type12 w/Vario1 5HP 240v

Verticle Turbine Pumps

Requirements

Manufacturer	Model
Simflo	Per Design Engineer
National	Per Design Engineer
Peerless	Per Design Engineer

Verticle Turbine Pump Motors

Requirements

Type	Manufacturer	Model
High Efficiency	US Motors	Per Design Engineer
General	GE Motors	Per Design Engineer

Axial Booster Pumps (Only 1 Allowed)

Requirements

Manufacturer	Model
Grunfos / Paco	100, 50, 30hp Per Design Engineer

Axial Booster Pump Motor (Only 2 Allowed)

Requirements

Manufacturer	Model
Baldor	100, 50, 30hp Per Design Engineer
SuperE	100, 50, 30hp Per Design Engineer

Well Casing (Only 1 Allowed)

Requirements

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

Manufacturer	Model
Roscoe Moss	Spiral seam

Variable Frequency Drives (VFD) (Only 1 Allowed Per Type)

Requirements

Type	Manufacturer	Model
VFD	Schneider Electric	Altivar 630 (well and boosters)
Soft Start	Schneider Electric	Altistart 22

Pump Shaft / Seals

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

Air Compressors (Only 2 Allowed)

Requirements

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

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

Instrumentation

Human Machine Interface (HMI) (Only 1 Allowed)

Requirements

- 15" Touch Terminal
- Color TFT LCD
- 2-USB Ports
- Ethernet/IP Communications

Manufacturer	Model
Allen-Bradley	Panelview Plus 7 Color

Radios and Antenna Components (Only 1 Allowed Per Type)

Requirements

- Radio
 - o High Gain Outdoor Subscriber Unit
 - o Integrated Directional Dual Slant Antenna
- Base Station
 - o 4.9 GHz-base station w/mounting bracket
 - o 2 ea 1.6m RF cables
 - o POE injector
- Sector Antenna
 - o 4.9 GHz
 - o 90 degree sector antenna - 16dBi
 - o Required for each base station radio

Component	Manufacturer	Model
Radio	Siemens	RUGGEDCOM - RUM-WIN-5249
POE	Siemens	RUGGEDCOM POE Injector - 6GK6010-0AP01-2AA
Lightening Arrestor	Proxim	Outdoor GB POE Surge Arrestor / Protector - 235-00001
Base Station	Siemens	RUM-WIN-7249
Sector Antenna	Siemens	RUM-ANTN0074

Trace Nitrate/Chlorine/Ph Panel (Only 1 Allowed Per Type)

Requirements

Type	Manufacturer	Model
Transmitter	Endress/Hauser	CM-448
Chlorine sensor	Endress/Hauser	CCS-51D
Ph sensor	Endress/Hauser	CPS-11D
Nitrate sensor	Endress/Hauser	CAS-51D
Nitrate Air compressor	Endress/Hauser	71194623

Tank Level Indicator (Only 1 Allowed Per Type)

Requirements

Type	Manufacturer	Model
Transducer	Endress/Hauser	PMC-71 1/2" npt (0-150psi and 0-600psi)
Ultrasonic	Endress/Hauser	FDU-90
Radar	Endress/Hauser	FMR-20

Pressure Transmitters (Only 1 Allowed)

Requirements

Manufacturer	Model
Endress/Hauser	PMC-21 1/2" npt 0-150psi

Well Level Transducer (Only 1 Allowed)

Requirements

Manufacturer	Model
Endress/Hauser	Water Pilot FMX 21, Cable length as needed

PLC Cabinet and Components

Requirements

Type	Part Number	Manufacturer	Model
Well Site Enclosure		Hoffman	CSD-363012: Enclosure, Industrial, Wall Mount, Single Door, type 4-12, 36.00"x30.00"x12"
Well Site Back Panel		Hoffman	CP3630: Panel, Wall Mount Enclosure, 34.20"x28.20", Painted Steel
Tank & Booster Enclosure		Hoffman	CSD423012: Enclosure, Wall-Mount, Industrial, Single-Door, Type 4-12, 42.00"x 30.00" x 12"00
Tank & Booster Back Panel		Hoffman	CP4230: Panel, Wall Mount Enclosure, 40.20x28.20, Painted Steel
Tank & Booster Touchscreen		Allen Bradley	2711P-T15C22A9P: Panelview Plus 7 Color, 15" Touch Terminal, Color TFT LCD, 2-USB Ports, Ethernet/IP Communications
Flow Control Site Enclosure		Meyers	USPI46-57: Single Meter Service Pedestal Enclosure
All Sites - Processor		Allen Bradley	1769-L33ER: CompactLogix 5370 Controller Dual Ethernet w/DLR Capability, 2MB memory, 16 I/O Expansion, 32 Ethernet IP Nodes
All Sites - PLC Power Supply		Allen Bradley	1769-PA2: Power Supply , Compact Logix, 100VA @ 120VAC/130VA @ 240VAC, 2A @ 5VDC/0.8A @ 24VDC Output
All Sites - Digital Input		Allen Bradley	1769-IQ16: CompactLogix, PLC Digital DC Input Module, 16 Pts. (2 sets of 8) 24VDC Sinking/Sourcing, 10-30VDC
All Sites - Digital Output		Allen Bradley	1769-OB16: CompactLogix, PLC Digital DC Output Module, 16 Pts. 24 VDC Sourcing Output Module, 10-30VDC
All Sites - Analog Input		Allen Bradley	1769-IF8: CompactLogix, 8 Channel Analog Current/Voltage Input Module
All Sites - Analog Output		Allen Bradley	1769-OF4: CompactLogix, PLC Compact Series 4 Channel Analog Current/ Voltage Output Module
All Sites - Ethernet Switch		Allen Bradley	IE-2000-16TC-B: Ethernet Switch, Series 2000, 16 - 10/100 Base-T RJ45 Ports, 2 - Combo SFP/RJ45, LAN Base Software, 24VDC, 30W Max.
All Sites - 24VDC Power Supply		Phoenix Contact	2904601: Power Supply, QUINT-PS/1AC/24DC/10, DIN Rail Mount
All Sites - 120VAC UPS		Phoenix Contact	2905908: Uninterruptible Power Supply, TRIO-UPS-2G/1AC/ 1AC/120V/750VA, Integrated Energy Storage, 3.4 Ah
All Sites - PLC Program		Allen Bradley	Rslogix 5000, Version 20.12
All Sites - SCADA Program		Wonderware	Wonderware Orchestra 2014-R2

END OF SECTION



UTILITY SERVICES DEPARTMENT

Approved Materials List for Water Distribution, Water Production, & Sewer Collections

Sewer Collections System Materials

Polymer Manholes

Requirements

- Refer to section 7.2.1 of the Town's Design & Construction Standards for a complete list of Polymer Manhole Requirements
- ASTM C 478
- 60" barrel diameter (or larger)
- No cementitious materials allowed
- Thermosetting Resin per ASTM D648
- Connectors per ASTM C923, resilient, water tight
- Load & Strength per ASTM C478 and ASTM C857
- 50 year warranty

Manufacturer	Model
Armorock	Polymer
(Available)	(Available)
(Available)	(Available)

Manhole Adjustment Risers

Requirements

- Grade Rings shall not be greater than 24-inches in total height
- Grade Rings shall be easily constructed without special training or instruction
- Grade Rings on any given manhole of a thickness of 2-inches or less shall only be located only in the top 4-inches and shall not consist of more than two(2) 1-inch rings.

Manufacturer	Model
All that meet MAG specifications	Concrete
Armorock	Polymer

Manhole Frame and Covers

Requirements

- Manhole Frame and Covers shall meet all specification for MAG 423-2 / & 424-2

Manufacturer	Model
Neenah Foundry	MAG 423-2 / 424-2
(Available)	(Available)
(Available)	(Available)

Sewer Gravity Lines (All Allowed that Meet Town Specifications)

Requirements

- Up to 15" and 15' deep - SDR-35
- Greater than 15" to 24" and up to 25' deep - C900 SDR-26
- Greater than 24" and beyond 25' deep - Approved on case by case basis.
- Cell classification 12454 or 12364 per ASTM D1784
- No leakage per ASTM D3212

SPECIAL PROTECTION PIPE

- Up to 14" and 15' deep - Ductile Iron class 350
- Greater than 15" to 24" and up to 25' deep - Ductile Iron Class 250
- Greater than 24" and beyond 25' deep - Approved on case by case basis.
- Requires 40 mill protective lining (Protecto 401 Ceramic epoxy, Polythane)

Sewer Force Mains (All Allowed that Meet Town Specifications)

Requirements

- All force mains smaller than 16" shall be C-909 Pressure Class 235 & 305 psi
- All 16" mains shall be C-909 Pressure Class 165 psi
- HDPE DR-11. All HDPE must have green markings for sewer installed facing up.

Tracer Wire (All Allowed that Meet Town Specifications)

Requirements

- #12 AWG wire
- 2,500-foot minimum roll length
- Connectors - Hughes Dri-Splice DS-100; DS-400; DS-500;

Sewer Pipe Clamp

Requirements

<u>Manufacturer</u>	<u>Model</u>
Krausz Hymax Clamp	3" thru 12"
Romac	SL1
JCM	111 AS

Dosing Station Chemical Feed Pump/Motor (Set) (Up to 2 Allowed)

Requirements

<u>Manufacturer</u>	<u>Model</u>
LMI Milton Roy	SG53-88P
Blue-White	Pro series M3-M4

LIFT STATIONS

Wet Wells

Requirements

- Shall be manufactured of polymer material. Concrete wet wells are not allowed.
- Shall include a 50 year warranty

<u>Manufacturer</u>	<u>Model</u>
Aarmorock	Per Manufactures Specifications

Lift Station Pump & Motor (Up to 4 Allowed)

Requirements

- Housing to be gray cast iron per ASTM A-48, Class 35B
- Pump impellers shall be stainless steel material
- Pump shall be grinder type
- 3 to 120 HP Submersible electric motor connected for 480 volt operation, 1 to 3 phase, 60 hertz, 3 wire w/ 50' of submersible cable.
- Pump motor shall be explosion proof
- Power cable to be 3 wire, submersible, 50' in length, and sized per NEC and ICEA standards and meet P-MSHA approval
- All exposed nuts and bolts shall be AISI type 431 Stainless Steel
- Cast Iron surfaced that are incontact with wastewater and / or wastewater gases, shall be Stainless Steel, Brass, or have a factory applied spray coating of acrylic dispersion zinc phosphate primer with a polyester resin paint finish.
- Sealing between machined surfaces shall have machined surfaces that provide metal-to-metal contact throughout with water tight sealing fitted with Nitrite or Viton rubber O-rings

<u>Manufacturer</u>	<u>Model</u>
Flygt	Submersible Sump Pump, 50 Htz, Squirrel Cage Induction, or as otherwise approved by USD.

Drum Scrubber

Requirements

<u>Manufacturer</u>	<u>Model</u>
Purasil	DS 100 Odor Scrubber

Air/Vacuum Release Valves (Only 1 Allowed)

Requirements

<u>Manufacturer</u>	<u>Model</u>
ARI	No. D-020 - Combination air valve "SAAR"

Generator (Only 2 Allowed)

- Sized to sustain 2nd pump start up with first pump running.
- Noise decible at property line not to exceed Town standards

Requirements

<u>Manufacturer</u>	<u>Model</u>
Cummins	Diesel, Per Design Engineer
Caterpillar	Diesel, Per Design Engineer

Ultrasonic Level Transducer

Requirements

Manufacturer	Model
E&H	FMU-90/FDU series

Hatch Covers

Requirements

Type	Manufacturer	Model
Wet Well	USF Fabrication (Available) (Available)	30" Concrete (Available) (Available)
Dry Well	USF Fabrication (Available) (Available)	5' Aluminum with frame (Available) (Available)

Check Valves

Requirements

- 175 psi minimum

Manufacturer	Model
Pratt / Muller (Available) (Available)	8000-1A (Available) (Available)

Plug Valves

Requirements

- 175 psi minimum

Manufacturer	Model
Pratt / Muller (Available) (Available)	601A full round port plug valve (Available) (Available)

Wet Well Level Indicators (Only 1 Allowed)

Requirements

Manufacturer	Model
Flygt (Available) (Available)	E&N - 10, liquid level sensors (Available) (Available)

Instrumentation

Human Machine Interface (HMI) (Only 1 Allowed)

Requirements

- 15" Touch Terminal
- Color TFT LCD
- 2-USB Ports
- Ethernet/IP Communications

Manufacturer	Model
Allen-Bradley	Panelview Plus 7 Color

Radios and Antenna Components (Only 1 Allowed Per Type)

Requirements

- Radio
 - o High Gain Outdoor Subscriber Unit
 - o Integrated Directional Dual Slant Antenna
- Base Station
 - o 4.9 GHz-base station w/mounting bracket
 - o 2 ea 1.6m RF cables
 - o POE injector
- Sector Antenna

- o 4.9 GHz
- o 90 degree sector antenna - 16dBi
- o Required for each base station radio

Component	Manufacturer	Model
Radio	Siemens	RUGGEDCOM - RUM-WIN-5249
POE	Siemens	RUGGEDCOM POE Injector - 6GK6010-0AP01-2AA
Lightening Arrestor	Proxim	Outdoor GB POE Surge Arrestor / Protector - 235-00001
Base Station	Siemens	RUM-WIN-7249
Sector Antenna	Siemens	RUM-ANTN0074

PLC Cabinet and Components

Requirements

Type	Manufacturer	Component
Lift Station Control Panel	Hoffman	CSD-363012: Enclosure, Industrial, Wall Mount, Single Door, type 4-12, 36.00"x30.00"x12"
All Sites - Processor	Allen Bradley	1769-L33ER: CompactLogix 5370 Controller Dual Ethernet w/DLR Capability, 2MB memory, 16 I/O Expansion, 32 Ethernet IP Nodes
All Sites - PLC Power Supply	Allen Bradley	1769-PA2: Power Supply , Compact Logix, 100VA @ 120VAC/130VA @ 240VAC, 2A @ 5VDC/0.8A @ 24VDC Output
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All Sites - 24VDC Power Supply	Phoenix Contact	2904601: Power Supply, QUINT-PS/1AC/24DC/10, DIN Rail Mount
All Sites - 120VAC UPS	Phoenix Contact	2905908: Uninterruptible Power Supply, TRIO-UPS-2G/1AC/ 1AC/ 120V/750VA, Integrated Energy Storage, 3.4 Ah
All Sites - PLC Program	Allen Bradley	Rslogix 5000, Version 20.12
All Sites - SCADA Program	Wonderware	Wonderware Archestra 2014-R2

END OF SECTION