



Western Water Constructors, Inc.
Submittal Cover

Job no. 16-05



CONTRACT NAME: Manteca WQCF Digester Improvements
SPEC SECTION: 11381 Digester Accessories
SUBMITTAL TITLE: 4 Quart Automatic Drip Trap - O&M
FILE NAME: 130-R0\_11381-03\_4 Quart Automatic Drip Trap-OM

SUB #: 130
REV #: 0
CODE: 11381-03
DATE: 7/18/2017

WWC REVIEW/COMMENTS: [X] NO EXCEPTIONS [ ] EXCEPTIONS / DEVIATIONS AS NOTED

Product originally submitted under submittal #048.

The complete Preliminary O&M with the reports will be submitted once the equipment ships.

REVIEWED BY: ST

SIGNED: [Signature]

WWC HAS REVIEWED THIS SUBMITTAL FOR CONFORMANCE WITH THE PROJECT PLANS & SPECIFICATIONS.

OWNER REVIEW:

Table with columns: ITEM, DESCRIPTION, REVIEW STATUS (A, B, C, D, E). Rows include Equipment Summary Form, Data Sheet, Instruction Manual, Drawing, and an empty row.

LEGEND: A = No Exceptions Taken, B = Make Correction Noted, C = Correct & Resubmit, D = Rejected, E = Accepted for Record

OWNER COMMENTS:

REVIEWER'S NAME: \_\_\_\_\_

REVIEWER'S SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

## **Section 2.04.B**

(97110-31)

### **4 Quart Automatic Drip Trap**

-Equipment Summary Form

- Data Sheet

-Instruction Manual

-Test Report

- Drawing



**BIOGAS**  
**SHAND & JUR'S**

an *L&J TECHNOLOGIES* company

**EQUIPMENT SUMMARY FORM**

1. EQUIPMENT ITEM 4 Quart Automatic Drip Trap
2. MANUFACTURER L&J Technologies
3. EQUIPMENT IDENTIFICATION NUMBER(S) 97110-31  
(maps equipment number)
4. LOCATION OF EQUIPMENT \_\_\_\_\_
5. WEIGHT OF INDIVIDUAL COMPONENTS (OVER 100 POUNDS) 36 lbs. (Approx.)  
\_\_\_\_\_  
\_\_\_\_\_
6. NAMEPLATE DATA - Horsepower \_\_\_\_\_  
Amperage \_\_\_\_\_  
Voltage \_\_\_\_\_  
Service Factor (S.F.) \_\_\_\_\_  
Speed \_\_\_\_\_  
ENC Type \_\_\_\_\_  
Capacity 4 Quart  
Other \_\_\_\_\_
7. MANUFACTURER'S LOCAL REPRESENTATIVE  
Name Misco Water  
Address 27101 Burbank, Suite B, Foothill Ranch, CA, 92610  
Telephone Number 949-458-5555
8. MAINTENANCE REQUIREMENTS Visual inspection annually, replace soft goods every 5 years.  
\_\_\_\_\_  
\_\_\_\_\_
9. LUBRICANT LIST N/A  
\_\_\_\_\_  
\_\_\_\_\_
10. SPARE PARTS (recommendations) Seal kit(9711-10261)Cover gasket(9711-10270)  
\_\_\_\_\_  
\_\_\_\_\_
11. COMMENTS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 97110 Automatic Drip Trap

The S&J 97110 Automatic Drip Trap provides for the continuous, safe removal of condensate from low points in low pressure gas piping systems. Removing condensed liquid protects the piping and equipment from corrosion and "water hammer" damage.

The unit collects liquid until the float lifts the stopper valve off of its seat and begins to drain the liquid. As the level drops, the float rotates the stopper valve back into its seat and provides a tight seal. A liquid level is always maintained above the outlet while the unit is draining which prevents any release of gas.

High and low pressure rated units allow for use in any low area of the digester gas system. Available with a 2 or 4 quart capacity and with 1" NPT inlets and outlets, the S&J 97110 adapts to any condensation or drainage collection requirement.

Its aluminum and stainless steel components withstand the severest of process environments. The S&J 97110 is especially designed for hydrogen sulfide and hot, wet methane which are the main components of digester gas streams in municipal waste water treatment facilities.

### Specifications:

#### Body Material:

Aluminum or ~~316 Stainless Steel~~

#### Internals:

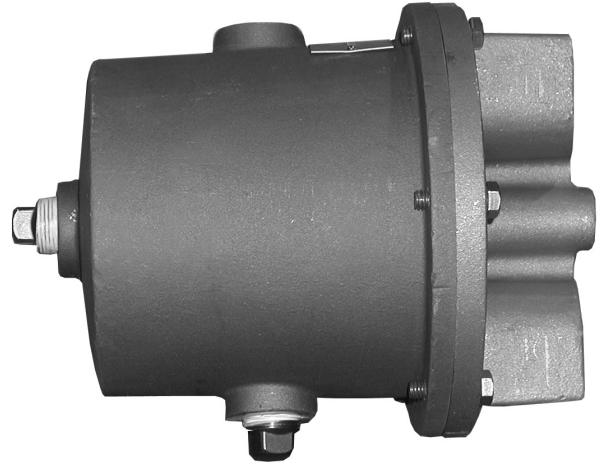
304/316 Stainless Steel; Buna-N Seal

#### Working Pressure:

5 PSIG or ~~25 PSIG~~

#### Capacity:

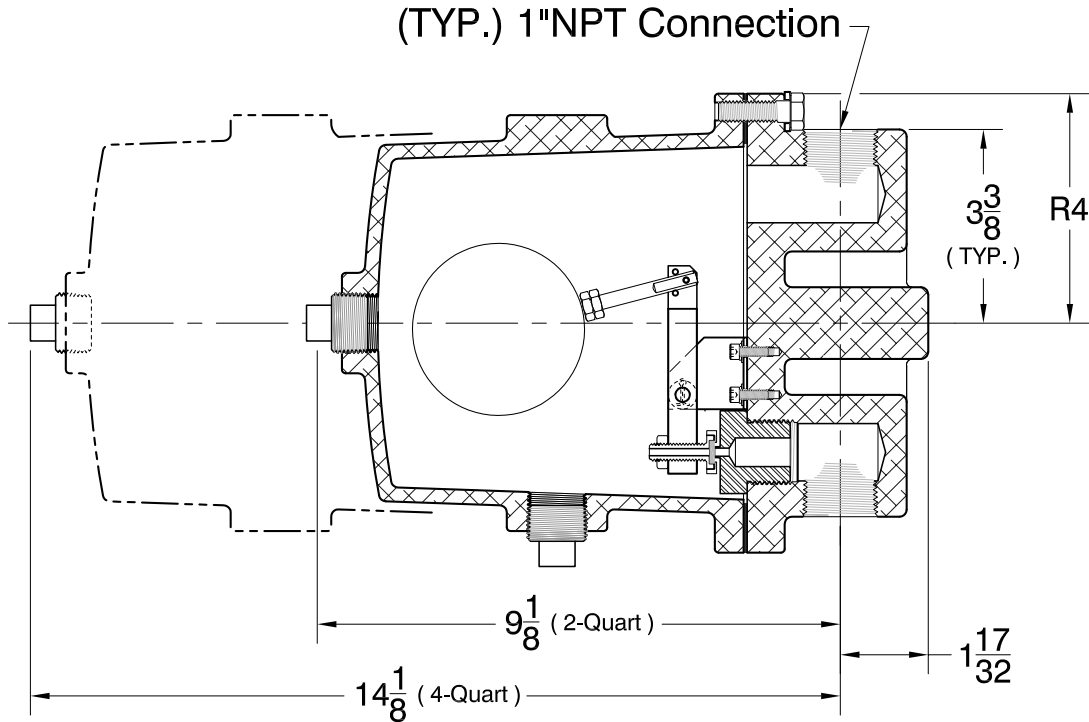
~~2 Quart~~ or 4 Quart



## Features

- Positive Gas Shut-off While Draining
- 5 PSI Standard; ~~25 PSI Pressure Available~~
- Automatic Unattended Removal of Condensate
- ~~2 or 4~~ Quart Capacity

**Dimensions:**



All designs subject to change. Certified dimensions and specifications available upon request.

**97110 Ordering Guide**

**Model Number Selection**

The model number will have a base number **97110** followed by 2 digit numbers. These digits will represent an option table.

**97110 - AB**

**Table AB - Maximum Working Pressure & Material**

Option AB	Capacity	Maximum Working Pressure	Body Material
11	2 Quart	5 PSIG	Aluminum
12			316 Stainless Steel
21		25 PSIG	Aluminum
22			316 Stainless Steel
31	4 Quart	5 PSIG	Aluminum
32			316 Stainless Steel
41		25 PSIG	Aluminum
42			316 Stainless Steel

**NOTE:** 316 Stainless Steel Hardware, 304 Stainless Steel Float, Buna-N Seal Standard. Alternate Materials of construction available.

**SAFETY INFORMATION**

Before proceeding, any addendum along with the instruction manual must be fully read and understood. Periodically throughout this manual, the words Danger, Warning, Caution and Note may occur. These are reminders to be especially careful. See the descriptions below for more details on what each word denotes.

**⚠ DANGER**

Indicates an imminently hazardous situation which, if not avoided, "will" result in death or serious injury. This word is limited to the most extreme situations.

**⚠ WARNING**

Indicates a potentially hazardous situation which, if not avoided, "could" result in death or serious injury.

**⚠ CAUTION**

Indicates a potentially hazardous situation which, if not avoided, "may" result in minor or moderate injury, or damage to the instrument being worked on.

**!** **Note:** Is meant to add some measure of help or give useful information to the person working on the instrument.

**⚠ WARNING**

It is important to take the following precautions before you start work on the Drip Trap.

1. Personnel installing or performing maintenance to the Drip Trap must be competent and utilize approved equipment and clothing normally used to work with the process media where the Drip Trap is installed.
2. The tank or pressure line that the Drip Trap is installed on must be at atmospheric pressure conditions and free of hazardous vapors.
3. Handling of the Drip Trap must be done by personnel trained in all aspects of manual and mechanical handling techniques.

**DESCRIPTION**

The Shand & Jurs 97110 Automatic Drip Trap provides for safe removal of condensate from low points in the piping system.

The Automatic Drip Trap collects condensate until the float opens the seat seal and a partial release of condensate occurs. The condensate is always above the seat seal to assure that no gas will escape when the trap is draining.



**97110 Automatic Drip Trap**  
**RECEIVED**

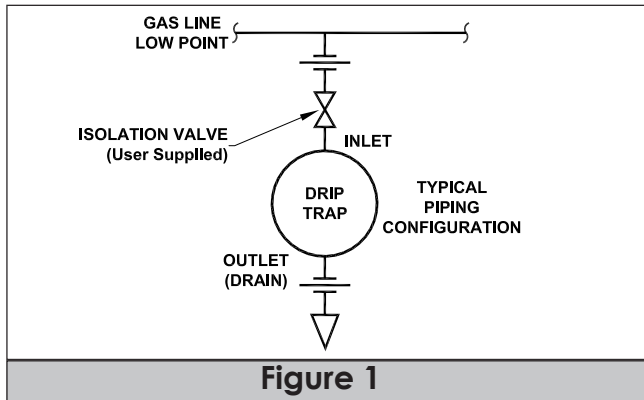
This product is the property of the purchaser when it leaves our plant. Claims for damage must be made promptly with the transportation company if the shipment is received in damaged condition. Notify the agent of the transportation company at once and preserve the carton, packing material, and all contents as received.

The Shand & Jurs method of packing these goods has been proven effective by many years of experience. The transportation company has contracted to deliver this material to you in as good condition as they received it from us.

Unpack and inspect the equipment for damage upon receipt. Compare description on the identification plate against packing slip to make sure specifications are correct. After inspection, repack the unit carefully in the same manner as originally received. The unit should remain in the original shipping carton until it is ready to mount.

**INSTALLATION**

The Model 97110 Automatic Drip Trap is provided with a 1" NPT outlet and inlet. Connect one side of the trap to the bottom connection of a sediment trap or tee it on a low point in the piping system. A union and 1" NPT isolation valve installed prior to the inlet connection is recommended for maintenance purposes. Refer to Figure 1. The outlet port (drain) is located on the same side as the drain plug. A 3/4 NPT drain plug is provided in the body housing for manual draining.



## INSPECTION

Recommended minimum once a year cleaning, visual examination for corrosion, and the unit's sealing ability (outlet leaking liquid or air by passing the seals). The seal is the only item that should be replaced every 5 years.

Observe cover seal for leakage. Spray bubble detection solution around cover and pip plug connections looking for leakage. Remove drain connection and look for liquid leakage. Connect hose to outlet and dip into liquid container and observe for bubble leakage.

Perform cleaning as described below.

## MAINTENANCE

### **WARNING**

Prior to performing maintenance, ensure pressure and hazardous gases are isolated from the drip trap.

#### Cleaning:

1. Remove the cap screws (21) and locking washers (20) holding the cover in place. Remove cover (18).
2. Spray or lightly scrub interior of drip trap removing debris. Hand wipe seal and seat surface.

### **CAUTION**

Do not damage seal or seat surface or valve may leak.

3. Observe for signs of damage or corrosion and replace parts, as required. Reassemble gasket, cover, cover screws, and lockwashers. Test as described in Inspection section.

#### Seal Replacement:

Disconnect and remove the drip trap from its installation before replacing the seals.

1. Remove the items specified in Item 1 above
2. Remove the pivot arm (14) from the bracket (3) by removing the cotter pin (9) and then removing the hinge pin (8).

### **CAUTION**

The shaft may be shimmed to center it on the bracket. Replace the shims in the same original position.

3. Measure the distance from ("H") from the pivot arm to the valve seal surface (23/23A) and write it down.

- For the 5# design, remove the screw (25) and the washer (24) to permit valve seal removal. Replace valve seal and apply a drop of serviceable thread-lock before replacing washer and screw. Verify "H" dimension after assembly and adjust accordingly.

-For the 25# design, remove nut (16) and unscrew the valve stopper (5A) from the pivot arm. The valve stopper must be pressed out of the seal retainer (25A) in order to remove the valve seal. After the seal is removed and a new one is replaced in the seal retainer, press the retainer back onto the valve stopper, making sure that the retainer is flush with the back part of the valve stopper.



Note: The seal must float inside of the housing.

4. Apply serviceable thread-lock to the valve stopper threads. Replace the valve stopper assembly via screwing the arm back on matching the original distance ("H").
5. Replace the arm onto the bracket using the original shims, in the original position.
6. Place cotter pin in shaft and secure pin.
7. Visually check seal seating - It should be square with the seal face.
8. Place a new gasket on the cover groove and assemble to the body. Orient the body drain and the cover outlet port on the bottom. Test as described in Inspection section.

## SPARE PARTS

Shand & Jurs' equipment is identified by the model and serial numbers stamped on the nameplate. Record the model and serial numbers and refer to them when ordering spare parts from the local Shand & Jurs representative or the factory.

<u>Item No.</u>	<u>Description</u>	<u>Part No.</u>
17	Cover Gasket	9711-10270
23	Valve Seal (5 psig Option)	9711-10250
	Valve Seal (25 psig Option)	9711-10230
23,24,25	Valve Seal Kit (5 psig Option)	9711-10261
	*Includes seal, washer, and screw	

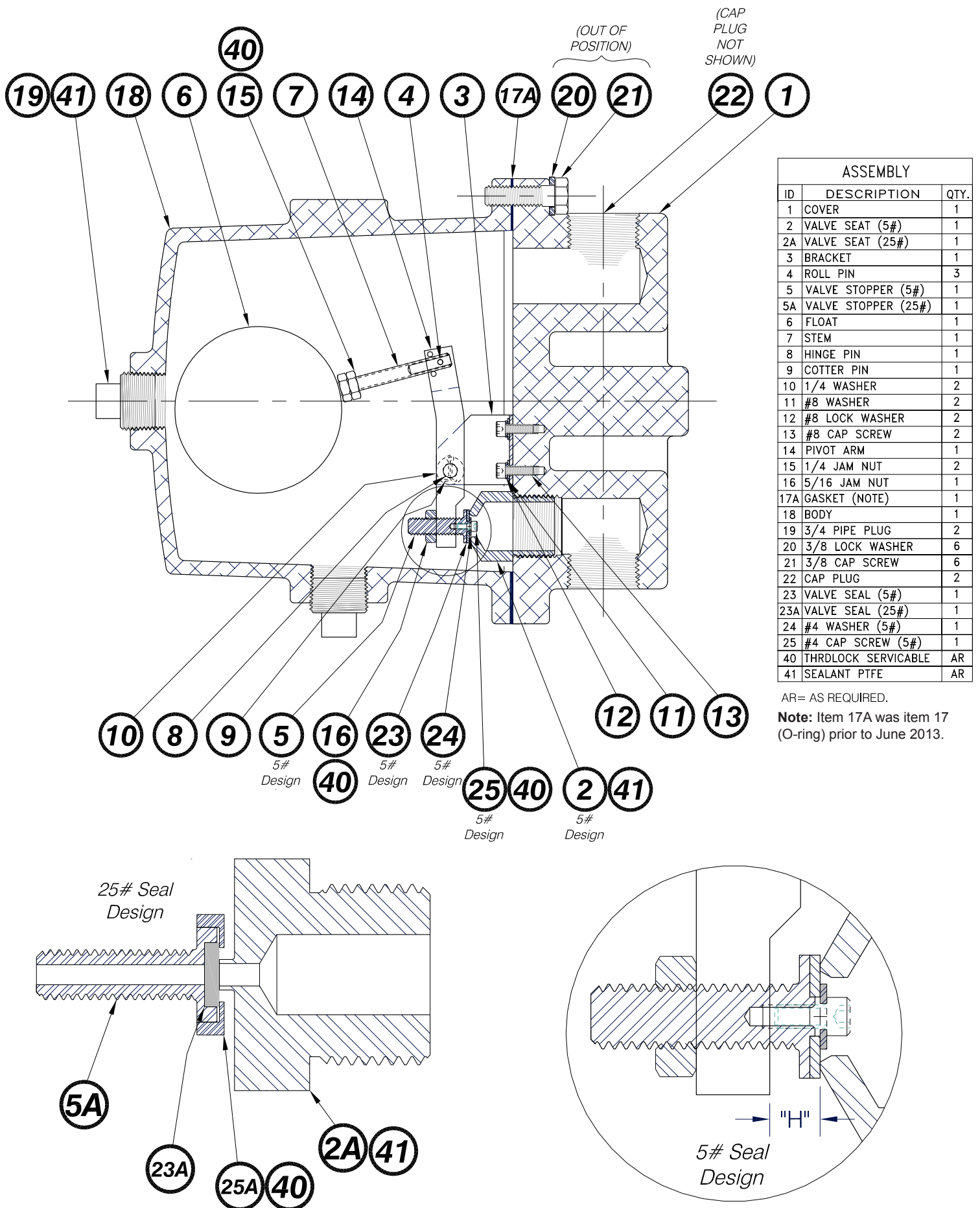


Figure 2



**SHAND&JURS**

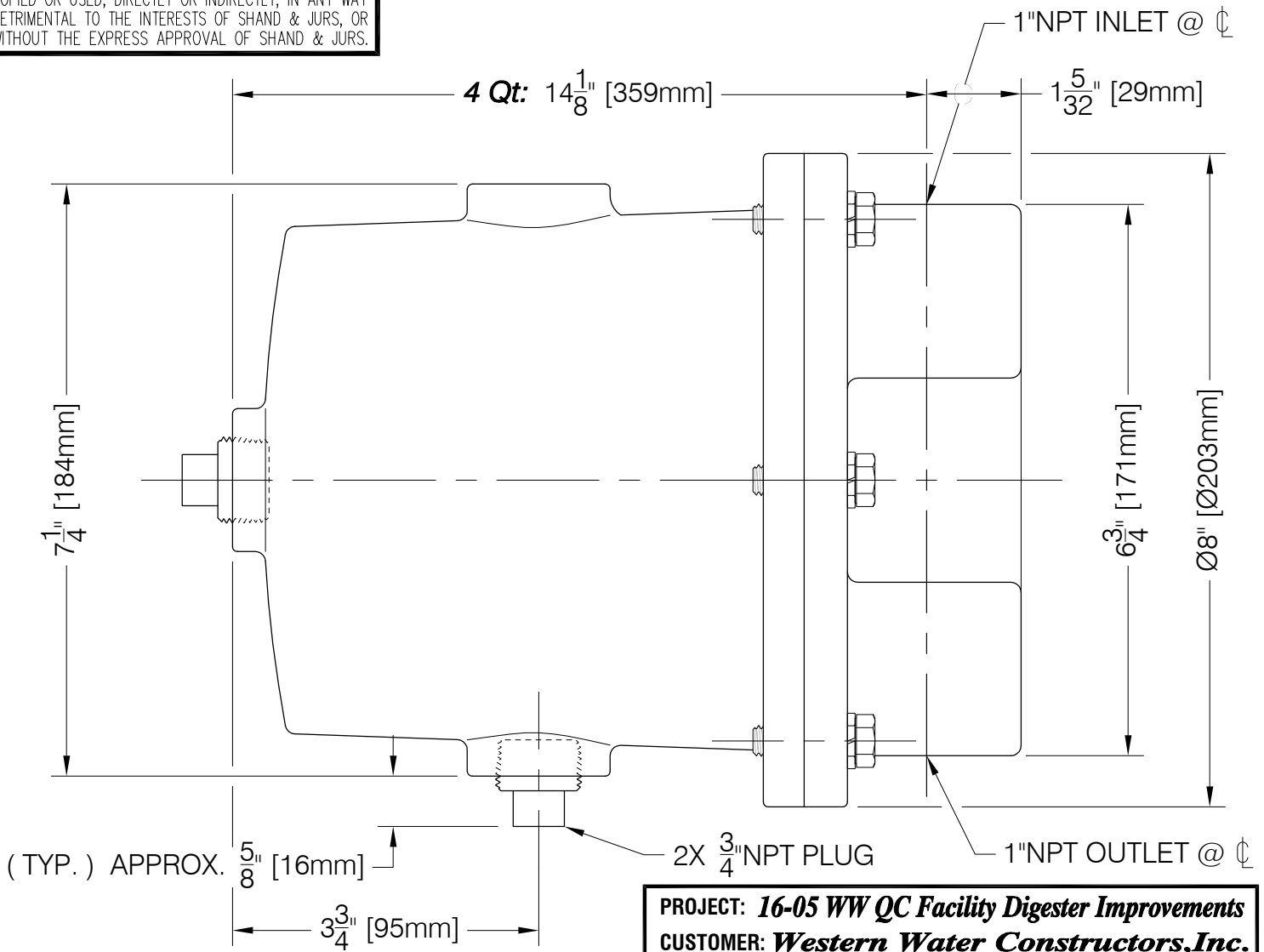
an *L&J TECHNOLOGIES* Company

5911 Butterfield Road • Hillside, Illinois 60162  
Phone: (708) 236-6000 • Fax: (708) 236-6006  
[www.ljtechnologies.com](http://www.ljtechnologies.com)

All designs subject to change. Certified dimensions and specifications available upon request.

**QUALITY ASSURANCE TEST  
REPORTS WILL BE PROVIDED AT  
THE TIME OF SHIPMENT**

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PROJECT: **16-05 WW QC Facility Digester Improvements**  
 CUSTOMER: **Western Water Constructors, Inc.**  
 CUSTOMER P.O. NO: **1605-03**  
 DESCRIPTION: **Automatic Drip Trap**  
 MODEL NO: **97110-31**  
 SPECIFICATION: **11381 Section 2.04.B**  
 S&J SALES ORDER NO: **TJ2290** DATE: **Apr 12, 2017**

APPROVED  APPROVED w/CHANGES  NOT APPR.-RESUB. PER COMMENT   
 CUST. SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**97110 AUTOMATIC DRIP TRAP**

**Part Description: Material:**

- Body, Cover: #356-T51 Aluminum
- Hardware: 316 Stainless Steel
- Float: 304 Stainless Steel
- Hinge: 316 Stainless Steel
- O-Rings: Buna-N

Capacity (MIN.): 4 Quart Reservoir  
 Maximum Pressure: 5 PSIG  
 Cust. Tag No('s): TBD  
 Quantity: 9

**SHAND & JUR'S**  
 an **L&J TECHNOLOGIES** Company  
 HILLSIDE, ILLINOIS USA

**97110 Automatic Drip Trap**  
**4 qt. Dimensions**

APRVD CHKD DATE	<i>GP</i>	Type: <b>Dim's</b>	Size: A: 8.5 x 11
	Jun 17 03	Scale: <b>1/2</b>	Designed: <i>Jerry</i>
	<i>GP</i>	T:\ISO#\TXXXXX\TJ2290\9711-00010-TJ2290.DWG	
	<i>RJD</i>	9711-00010-TJ2290	

~	Release	45	<i>GP</i>	Jun 17 03	<i>RJD</i>
REV	DESCRIPTION	ECO	BY	DATE	APRV