



State of Illinois
Office of the State Fire Marshal

Checklist for Documenting UST Compatibility

SUBMIT THIS FORM WITH SUPPORTING DOCUMENTATION ATTACHED.

ALL COMPONENTS MUST BE LISTED IN DETAIL, & COMPATIBILITY DOCUMENTATION MUST CLEARLY IDENTIFY THE COMPONENTS.

Facility where equipment is located:

Facility Number: 204 6902
Facility Owner: 10030965
Facility Name: LOUESTRAVEL STOP 770
Street Address: 43100 US HIGHWAY 41
City: WADSWORTH
County: LAKE

UST Information:

Tank ID Number: 6
Tank Material: Steel FRP
Single Wall Double Wall X
Tank Volume: 20,000
Tank Product: B-99

Complete the checklist below, listing compatibility determination, method used and description. **All answers must be "YES" and supported with a sufficient description or supporting documentation** in order for your UST system to demonstrate compatibility with the blended fuel/biofuel product.

UST SYSTEM COMPONENTS	DOCUMENTATION DEMONSTRATING COMPATIBILITY WITH SUBSTANCE LISTED ABOVE		METHOD A or B (MAY USE BOTH)	DESCRIPTION OF COMPONENT TYPE, MODEL NUMBER, & NATIONAL LABORATORY CERTIFICATION, LISTING OR MANUFACTURER APPROVAL (ATTACH TO CHECKLIST)
TANK	NO	<u>YES</u>	<u>A/B</u>	<u>XERSES DW</u>
PIPING (incl. shear valves, flex connectors)	NO	<u>YES</u>	<u>A/B</u>	<u>LCX NOV FRP PIPE</u> <u>EMBR VALVE + FUBX-FRANKLIN</u>
CONTAINMENT SUMPS	NO	<u>YES</u>	<u>B</u>	<u>BRAVO</u>
PUMPS (STPs/Suction; Dispensers, hoses, nozzles)	NO	<u>YES</u>	<u>B</u>	<u>FRANKLIN STP</u> <u># FE 157APK MV54UL2-2Y</u>

UST SYSTEM COMPONENTS	DOCUMENTATION DEMONSTRATING COMPATIBILITY WITH SUBSTANCE LISTED ABOVE		METHOD A or B (MAY USE BOTH)	DESCRIPTION OF COMPONENT TYPE, MODEL NUMBER, & NATIONAL LABORATORY CERTIFICATION, LISTING OR MANUFACTURER APPROVAL (ATTACH TO CHECKLIST)
RELEASE DETECTION EQUIPMENT	NO	☒ YES	B	PROBE TSP LL2 125-1 FLOAT TSP 10F9 SENSOR TSP VLS INTERSTITIAL FMP-E 15 LINE LBAT TSESU 500
SPILL PREVENTION EQUIPMENT	NO	☒ YES	A/B	DEFENDER PT 705 54 5011 CIGAT
OVERFILL PREVENTION EQUIPMENT	NO	☒ YES	A/B	E 708 592-922
GASKETS & SEALS (installs after 10/13/18)	NO	☒ YES	B	FRANKLIN STP
JOINT DOPES & ADHESIVES (installs after 10/13/18)	NO	☒ YES	B	FEDERAL PROCESS E SEAL

Methods:

- Certification or listing of UST system equipment or components by a nationally recognized, independent testing laboratory for use with the regulated substance stored.
- Equipment or manufacturer approval. The manufacturer's approval must be in writing, indicate an affirmative statement of compatibility, specify the range of biofuel blends the component is compatible with, and be from the equipment or component manufacturer

Note: Owners and operators may find American Petroleum Institute's Recommended Practice 1626, *Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Filling Stations*, useful in complying with the compatibility requirements.

In order to be in compliance with the 2015 federal UST regulation compatibility requirements for storing biofuels, you must keep documentation of compatibility of the UST system components listed on this page as long as you store the fuel.

For your records, you should update this checklist each time you repair or replace components of your UST system to ensure you have all the required compatibility documentation while storing biofuels.

Checklist Completed By: print name: CHUCK CLINE date completed: 2-13-20
signature: Chuck Cline position/title: PROJ MGR

June 13, 2019

To Whom It May Concern

Ref: Submersible Turbine Pump Compatibility

FE Petro branded Submersible Turbine Pump manufactured by Franklin Fueling Systems include product options of Alcohol-Grade (AG) and Advanced Protection (AP) that are currently UL listed for use with diesel fuels containing up to 20% biodiesel content (up to and including B20), and for use with 100% biodiesel (B100) as defined by the applicable standards (UL79A & UL79B). The AG and AP product options are designated by FE Petro model numbers STPAG, STPAP, IST or ISTAP and these product options are currently only available within our 4" Submersible Turbine Pumps models.

Beyond the above specifications, Franklin Fueling Systems has determined that the specified Submersible Turbine Pumps will work satisfactorily with the following motor fuels:

- Current construction of Alcohol-Grade (AG) and Advanced Protection (AP) FE Petro 4" Submersible Turbine Pumps are compatible for use with all Biodiesels such as B5, B20 and all ASTM Biodiesel blends up to and including (B99).

When utilizing FE Petro Submersible Turbine Pumps beyond the UL listing associated with the product, working satisfactorily may include some issues due to long term exposure to these higher biofuel concentrations, such as increased maintenance of internal service-related items like check valves, etc.



Leon Schuster
Franklin Fueling Systems
Sr. Product Manager, Pumping Systems

Afton OTR 8843G & OTR 8332G

Manufacturer's Affirmative Statement of Compatibility

(As required by California Code of Regulations section 2631(k))

Manufacturer(s) (including prior marketed names)	Model	Component Type (i.e. pipe, tank, etc.)	Current UL Standard Listing	Years of Manufacture	Sizes	Unique Identifiers for Field Evaluation (i.e. color, material)	Blend Concentration	Supporting Test Data & Documents Attached
Bravo	F-Series	Entry fitting	MH29867	2006-Present	All	olive-grey	1-100	Yes
Bravo	F-Series Retrofit-S	Retrofit entry fitting	MH29867	2010-Present	All	olive-grey	1-100	Yes
Bravo	F-Series Retrofit D-BLR-S	Retrofit entry fitting	3rd Party	2009-Present	All	olive-grey	1-100	Yes
Bravo	F-Series Retrofit D-INR-S	Retrofit entry fitting	3rd Party	2012-Present	All	olive-grey	1-100	Yes
Bravo	FR-Series Reducers	Test reducer	MH29867	2010-Present	All	olive-grey	1-100	Yes
Bravo	B-500 Series	Cont. sump	MH29867	2003-Present	All	olive-grey	1-100	Yes

For tanks and piping please list only double wall products

(Insert a company logo below if available)

Manufacturer: Bravo (S. Bravo Systems, Inc.)

Corporate

Headquarters 2929 Vail Ave, Commerce, CA

Address:

Phone: 323-888-4133

Email: compatibility@sbravo.com



www.sbravo.com

I declare, to the best of my knowledge and belief, that this affirmative statement of compatibility and the information contained herein is true, correct, and complete.

Jonathan E. Smith

Print Name

Director

Title

10-21-14

Date

Manufacturer's Authorized Signature

❖ Please complete and submit form to Cory Hootman of the SWRCB at chootman@waterboards.ca.gov.



Tuesday - August 30 - 2011

R2 1.18.12

RE: Bravo Fiberglass Fittings and Alternative fuels

This letter is to certify the compatibility of S. Bravo Systems, Inc. Single and Double Wall Fiberglass Sump Entry Fittings with Alternative Fuels such as Biodiesel and Ethanol blended fuels. It also addresses compatibility with DEF Diesel Exhaust Fluid.

Bravo Systems Fiberglass Fittings are engineered with the same UL Listed materials used in the manufacture and certification of Fiberglass Tanks, matching the UL Standard 1316. Since our Fiberglass Fittings are Built like a Tank, they can withstand continuous fuel exposure to, or submersion in Biodiesel, Ethanol and Alcohol blends without failure.

All Fiberglass Fittings designed for DoubleWall Sumps are engineered to be fully compliant with the California State Water Resource Control Board Assembly Bill AB-2481 for DoubleWall Sumps and Continuous Monitoring Systems.

The following Single and Double Wall Fiberglass Fittings manufactured by Bravo Systems in Commerce, California are compatible with Biodiesel and Ethanol fuel blends up to B100 and E100, respectively.

- > **F-Series** "Full Body" Fiberglass Fittings.
- > **FF-Series** "Flange" Fiberglass Fittings.
- > **FPE-Series** Fiberglass Fittings for Polyethylene pipe.
- > **FR-Series** Fiberglass Split Test Reducers.
- > **F-Series Retrofit-S** Fiberglass Split Retrofit Fittings.
- > **FPE-Retrofit-Si** Fiberglass Split Retrofit Fittings for Polyethylene pipe.
- > **F-Series BLR** "Full Body" Fiberglass Retrofit Fittings.
- > **F-Series D-BLR-S** Fiberglass Split Retrofit Fittings.
- > **TBF-Series** Fiberglass Tank Bung Fittings.

Bravo Systems also certifies that these fittings are compatible with and approved for use in secondarily containing DEF Diesel Exhaust Fluid.

This letter also addresses any fittings above sold under an OEM agreement.

Each respective Series may be UL Listed in addition to being manufactured of UL recognized materials approved for use in the manufacture of Fiberglass UST tanks. Please visit www.sbravo.com/thirdparty to find associated information.

Please feel free to contact us with any questions you may have at:

S. Bravo Systems, Inc.
2929 Vail Avenue
Commerce, CA 90040
323-888-4133
compatibility@sbravo.com

Additionally, you may find further information at www.sbravo.com.

Sincerely,

Jonathan E. Smith
Director of Brand Management
S. Bravo Systems, Inc.

S. Bravo Systems, Inc.

2929 Vail Avenue
Commerce,
CA 90040

1-800-AT-BRAVO

FAX: 323-888-4123

Email:
info@sbravo.com

Website:
www.sbravo.com



Wednesday - August 25 - 2010

R2 5.16.12

RE: Bravo Fiberglass Sumps and Alternative fuels

This letter is to certify the compatibility of S. Bravo Systems, Inc. Single and Double Wall Fiberglass Containment Sumps with Alternative Fuels such as Biodiesel and Ethanol blended fuels. It also addresses compatibility with DEF Diesel Exhaust Fluid.

Bravo Systems Fiberglass products are engineered with the same UL Listed materials used in the manufacture and certification of Fiberglass Tanks, matching the UL Standard 1316. Since our Fiberglass containment sumps are Built like a Tank, they can withstand continuous fuel exposure to Biodiesel, Ethanol and Alcohol blends without failure.

All DoubleWall Containment Sumps are engineered to be fully compliant with the California State Water Resource Control Board Assembly Bill AB-2481 for DoubleWall Sumps and Continuous Monitoring Systems.

The following Single and Double Wall Containment Sumps manufactured by Bravo Systems in Commerce, California are compatible with Biodiesel and Ethanol fuel blends up to B100 and E100, respectively.

- > B3XX Series Spill Buckets
- > B4XX Series Tank Sumps & Covers
- > B5XX Series Planter Transition Sumps
- > B6XX Series Walkover Transition Sumps
- > B7XX Series H-20 Rated Transition Sumps
- > B8XX Series Transition Sumps
- > B7XXX Series Under Dispenser Containment Sumps
- > B8XXX Series Under Dispenser Containment Sumps
- > B9XXX Series Under Dispenser Containment Sumps

Bravo Systems also certifies that these fittings are compatible with and approved for use in secondarily containing DEF Diesel Exhaust Fluid.

Each respective Series may be UL Listed in addition to being manufactured of UL recognized materials approved for use in the manufacture of Fiberglass UST tanks. Please visit www.sbravo.com/thirdparty to find associated information.

Please feel free to contact us with any questions you may have at:

S. Bravo Systems, Inc.
2929 Vail Avenue
Commerce, CA 90040
323-888-4133
compatibility@sbravo.com

Additionally, you may find further information at www.sbravo.com.

Sincerely,

Jonathan E. Smith
Director of Brand Management
S. Bravo Systems, Inc.

S. Bravo Systems, Inc.

2929 Vail Avenue
Commerce,
CA 90040

1-800-AT-BRAVO

FAX: 323-888-4123

Email:
info@sbravo.com

Website:
www.sbravo.com

Certificate of Compliance

Certificate Number **20101221 – MH29867E**
Report Reference **MH29867, 2009 February 03**
Issue Date **2010 December 21**

Page 1 of 1



Issued to:

S BRAVO SYSTEMS INC

**2929 VAIL AVE
COMMERCE, CA 90040 USA**

*This is to certify that
representative samples of*

Flammable and Combustible Liquid Tank Accessories

Model Descriptions: Models F-10-RR, F-10-SS, F-17-RR, F-17-SS, F-20-LL, F-22-LS, F-22-LS-T, F-30-LL, F-30-SS, F-32-TS, F-32-TS-T, F-33-LS, F-33-LS-T, F-40-SS, F-43-TS and F-43-TS-T fiberglass reinforced plastic sump penetration fittings.

Standard(s) for Safety:

*Have been investigated by Underwriters Laboratories Inc.® in accordance
with the Standard(s) indicated on this Certificate.*

**The basic standard used to investigate products in this category is
UL Subject 2258, "Outline of Investigation for Nonmetallic Tanks for Oil Burner
Fuel."**

Additional Information:

See UL On-line Certification Directory at www.ul.com for additional information.

Only those products bearing the UL Listing Mark should be considered as being covered by UL's Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle:  with the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product

William R. Carney

Director, North American Certification Programs

Underwriters Laboratories Inc.

Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

For questions, please contact a local UL Customer Service Representative at <http://www.ul.com/global/eng/pages/corporate/contactus/>

Certificate of Compliance

Certificate Number 20101221 - MH29867E
Report Reference MH29867, 2009 February 03
Issue Date 2010 December 21

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Issued to: S BRAVO SYSTEMS INC
2929 VAIL AVE
COMMERCE, CA 90040 USA

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representative samples of*

Flammable and Combustible Liquid Tank Accessories

Model Descriptions: Models F-10-RR, F-10-SS, F-17-RR, F-17-SS, F-20-LL, F-22-LS, F-22-LS-T, F-30-LL, F-30-SS, F-32-TS, F-32-TS-T, F-33-LS, F-33-LS-T, F-40-SS, F-43-TS and F-43-TS-T fiberglass reinforced plastic sump penetration fittings.

*Have been investigated by Underwriters Laboratories of Canada in
accordance with the Standard(s) indicated on this Certificate.*

Standard(s) for Safety:

The basic standard used to investigate products in this category is ULC-S631-1984, "Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems."

Additional Information:

See UL On-line Certification Directory at www.ul.com for additional information.

Only those products bearing the ULC Listing Mark should be considered as being covered by ULC's Listing and Follow-Up Service.

The ULC Listing Mark generally includes the following elements: the symbol ULC in a circle:  with the word "LISTED"; a control number (may be alphanumeric) assigned by ULC; and the product category name (product identifier) as indicated in the appropriate ULC Directory.

To confirm the current status, validate the above information via the on-line directory.

Look for the ULC Listing Mark on the product

Issued by:

James Larin, Customer Service Professional
Underwriters Laboratories of Canada

Reviewed by:

William R. Carney, Director, North American
Underwriters Laboratories of Canada

Certificate of Compliance

Certificate Number **20101221 – MH29867C**
Report Reference **MH29867, 2005 March 17**
Issue Date **2010 December 21**

Page 1 of 1



Issued to: **S BRAVO SYSTEMS INC**

**2929 VAIL AVE
COMMERCE, CA 90040 USA**

*This is to certify that
representative samples of*

Flammable and Combustible Liquid Tank Accessories

Model Descriptions: Models B-4000, B-5000, B8000, B8000-B and B-9000 single wall fiberglass reinforced plastic dispenser sumps with emergency valve mounting systems.

Models B-4000-D-AB, B-5000-D-AB, B-8000-BD-AB and B-9000-D-AB double wall, monitorable fiberglass reinforced plastic dispenser sumps with emergency valve mounting systems.

Model B-500-JP and B-600-JP single wall fiberglass reinforced plastic transition sump.

Models B-500-D-AB JP and B-600-D-AB double wall, monitorable fiberglass reinforced plastic transition sumps.

Have been investigated by Underwriters Laboratories Inc.® in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety:

The basic standard used to investigate products in this category is UL Subject 2258, "Outline of Investigation for Nonmetallic Tanks for Oil Burner Fuel."

Additional Information:

See UL On-line Certification Directory at www.ul.com for additional information.

Only those products bearing the UL Listing Mark should be considered as being covered by UL's Listing and Follow-Up Service.

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Look for the UL Listing Mark on the product

William R. Carney

Director, North American Certification Programs

Underwriters Laboratories Inc.

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Certificate of Compliance

Certificate Number **20101221 – MH29867D**
Report Reference **MH29867, 2008 November 19**
Issue Date **2010 December 21**

Page 1 of 1



Issued to: **S BRAVO SYSTEMS INC**

**2929 VAIL AVE
COMMERCE, CA 90040 USA**

*This is to certify that
representative samples of*

Flammable and Combustible Liquid Tank Accessories

Model Descriptions: Models B-7000, B-7000-EO, B8000 and B-9000 single wall fiberglass reinforced plastic dispenser sumps with mounting frames.

Model B-500-JP and B-600-JP single wall fiberglass reinforced plastic transition sump.

*Have been investigated by Underwriters Laboratories Inc.® in accordance
with the Standard(s) indicated on this Certificate.*

Standard(s) for Safety:

**The basic standard used to investigate products in this category is
UL Subject 2258, "Outline of Investigation for Nonmetallic Tanks for Oil Burner
Fuel."**

Additional Information:

See UL On-line Certification Directory at www.ul.com for additional information.

Only those products bearing the UL Listing Mark should be considered as being covered by UL's Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle:  with the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product

William R. Carney

Director, North American Certification Programs

Underwriters Laboratories Inc.

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Issue Date 2010 December 21

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**2929 VAIL AVE
COMMERCE, CA 90040 USA**

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**Model Descriptions: Models B-7000, B-7000-EO, B8000 and B-9000 single wall fiberglass reinforced plastic dispenser sumps with mounting frames.
Model B-500-JP and B-600-JP single wall fiberglass reinforced plastic transition sump.**

***Have been investigated by Underwriters Laboratories of Canada in
accordance with the Standard(s) indicated on this Certificate.***

Standard(s) for Safety:

The basic standard used to investigate products in this category is ULC-S631-1984, "Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems."

Additional Information:

See UL On-line Certification Directory at www.ul.com for additional information.

Only those products bearing the ULC Listing Mark should be considered as being covered by ULC's Listing and Follow-Up Service.

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To confirm the current status, validate the above information via the on-line directory.

Look for the ULC Listing Mark on the product

Issued by:

James Larin, Customer Service Professional
Underwriters Laboratories of Canada

Reviewed by:

William R. Carney, Director, North American
Underwriters Laboratories of Canada

Dualoy® 3000/LCX Product Data

Applications

Rigid fiberglass coaxial fuel handling systems requiring Underwriters Laboratories Listing for integral primary and containment piping conveying the following fuels:

- Motor Vehicle (MV)
- Aviation and Marine A&M)
- High Blend (HB)
- Bio-Diesel
- Concentrated (CT)
- Diesel Exhaust Fluid

Description

Dualoy 3000/LCX rigid fiberglass coaxial piping is a cost-effective solution for contained piping systems. LCX is used for product delivery lines in underground fuel handling systems to convey fuel from the tank to the dispensers. Dualoy 3000/LCX pipe is UL Listed for use with motor vehicle (MV), high blend (HB), concentrated (CT) and aviation and marine (A&M) fuels. Based on currently known tests, NOV Fiber Glass Systems found this product to be suitable for conveying all blends of biodiesel and ethanol type fuels and the conveyance of DEF.

The LCX pipe is manufactured as an integral unit. The primary is made of chemically inert, non-permeable, fiberglass reinforced epoxy resin which is inherently resistant to deterioration due to water and microbial attack. This layer is covered with a porous layer to provide the small volume interstitial space, which facilitates rapid leak detection. Then, the containment layer, comprised of the same material as the primary, is wound over the primary and porous layers.

The containment system is installed with custom designed clamshell containment fittings. Both the primary and containment systems are bonded for long-term, reliable performance.

- Dualoy 3000/LCX containment fittings are typically bolted in place while the adhesive cures.
- Dualoy 3000/LCX reduces installation and inspection time dramatically, retaining system integrity.
- Dualoy 3000/LCX double wall design significantly improves impact resistance over single wall pipe.
- Dualoy 3000/LCX systems provide true double wall design which permits rapid communication through the interstice.

Listings and Approvals

The rigid fiberglass piping used in Dualoy 3000/LCX is Listed in the United States with Underwriters Laboratories for nonmetallic underground piping for MV, HB, CT and A&M fuels under File No. MH9162. Dualoy 3000/LCX pipe and fittings are also Listed with Underwriters Laboratories of Canada for Petroleum Products and Oxygenated Fuels (File CMH715). Underwriters Laboratories has also approved Dualoy 3000/L and Dualoy 3000/LCX for use with MTBE fluids.

Performance

Primary operating pressures to 200 psig (13.8 bar)

Continuous operating temperature to 150°F (66°C)

Containment system pressures to 50 psig (3.45 bar)

Individual system components may not have the same ratings as the pipe. Refer to the detailed product information for the specific components to determine the pressure rating for the system as a whole.

Composition

Primary pipe: Filament-wound fiberglass reinforced epoxy pipe with integral epoxy liner. When classified in accordance with ASTM D2310 and ASTM D2996, the pipe meets the following cell limits: RTRP 11CF1-5420.

Pipe containment: Filament-wound fiberglass reinforced epoxy pipe.

Interstitial space: Dry, graded glass beads secured in place with adhesive backed tape.

Fittings: Compression molded or filament-wound fiberglass reinforced epoxy primary fittings. Containment fittings are molded.

Adhesive: PSX™ •20 or PSX™ •34 ambient-cure, two-part epoxy for all services (including alcohols and MTBE).

Joining System Primary:

Bell and spigot taper/taper adhesive-bonded joint

Containment:

Adhesive-bonded clamshell fittings. Parts are compression molded for exact fit and match. Material is identical to primary fittings and is UL Listed for all services, including use in MTBE fluids.

Pipe LengthsStandard 20 ft. (6.1 m) random lengths 17 to 21 ft. (5.2 to 6.4 m)
and 30 ft. (9.1 m) random lengths 27 to 32 ft. (8.2 to 9.7 m)

Other lengths up to 42 ft. (12.8 m) available upon request.

Fittings**Primary**Adapters: bell x NPT male⁽¹⁾Adapters: bell x NPT female⁽²⁾Adapters: spigot x NPT female⁽²⁾Adapters: spigot x NPT male⁽²⁾45° elbows⁽¹⁾90° elbows⁽¹⁾End caps⁽¹⁾Flange rings⁽¹⁾Flange stub ends⁽¹⁾Isolation bushings⁽¹⁾Nipples⁽²⁾Reducer bushings⁽¹⁾Repair couplings⁽¹⁾Sleeve couplings⁽²⁾Tees⁽¹⁾Dispenser pan penetration fittings⁽¹⁾**Containment**45° elbows⁽¹⁾90° elbows⁽¹⁾Termination sleeves^{(1), (3)}Couplings⁽¹⁾Tees⁽¹⁾⁽¹⁾ Molded fitting⁽²⁾ Filament-wound fitting⁽³⁾ 2" (50 mm) available with or without test valve. 3" and 4" (80 and 100 mm) available only with test valve**Typical Pipe Dimensions and Weights**

Pipe Size		Primary Pipe ID		Primary Pipe OD ⁽¹⁾		Primary Wall Thickness		Containment OD		Capacity		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	gal/ft	l/m	lb/ft	kg/m
2	50	2.21	56	2.37	60	0.080	2.03	2.59	66	0.20	0.76	0.90	1.34
3	80	3.32	84	3.50	89	0.085	2.16	3.70	94	0.45	1.70	1.30	1.93
4	100	4.33	110	4.50	114	0.087	2.21	4.70	119	0.77	2.92	1.74	2.59

⁽¹⁾ Typical outside diameters of 2"-4" (50 -100 mm) pipe are within API, ASTM and ANSI fiberglass and steel pipe dimensions.**Typical Primary Pipe Performance**

Pipe Size		Pressure Rating ⁽¹⁾		Ultimate Internal Pressure ⁽¹⁾		Ultimate Collapse Pressure ⁽²⁾	
in	mm	psig	MPa	psig	MPa	psig	MPa
2	50	200	2.07	1500	10.3	153	1.05
3	80	200	1.38	1000	6.9	90	0.62
4	100	175	1.21	750	5.2	39	0.27

⁽¹⁾ At 80°F (27°C)⁽²⁾ At 80°F (27°C) For continuous service do not exceed 75% of these values.**Fittings Pressure Performance**

Pipe Size		Primary All Fittings		Containment Clamshell Fittings	
in	mm	psig	MPa	psig	kPa
2	50	200	1.38	50 ⁽¹⁾	345
3	80	125	0.86	50 ⁽¹⁾	345
4	100	100	0.69	20	138

⁽¹⁾ With reinforcing rings

For dimensions of primary fittings, consult Dualoy 3000/L Fittings Dimensions document. Pressure ratings of fittings without UL Listing are available on request.

Dualoy 3000/LCX piping systems are designed to function at temperatures ranging from -40 to 150°F (-40 to 66°C) at service pressures between -1 and 13.8 bar. Dualoy 3000/LCX pipe conforms to ASTM D2310, D2517 and D2996.

Typical Physical Properties of Primary Pipe			
Pipe Property	Units	Value	ASTM
Thermal conductivity	Btu-in/(h•ft ² •°F)	1.7	C177
	W/m•°C	7.6	
Linear thermal expansion	10 ⁻⁶ in/in/°F	8.5	D696
	10 ⁻⁶ cm/cm/°C	15.3	
Friction factor	Hazen-Williams	150.0	—
Absolute roughness	10 ⁻⁶ ft	15.0	—
	10 ⁻⁶ m	4.6	
Specific gravity	—	1.81	D792
Barcol Hardness	Impressor 934-1	65.0	D2583

Typical Mechanical Properties of Primary Pipe			
Pipe Property ⁽¹⁾	Units	Value ⁽¹⁾	ASTM
Tensile strength Longitudinal	10 ³ psi MPa	35.0	D2105
		241.0	
Circumferential	10 ³ psi MPa	70.0	D1599
		483.0	
Tensile modulus Longitudinal	10 ⁶ psi GPa	2.5	D2105
		17.2	
Circumferential	10 ⁶ psi GPa	3.8	FGSTM
		26.2	
Compressive strength Longitudinal	10 ³ psi MPa	24.5	FGSTM
		168.9	
Compressive modulus Longitudinal	10 ⁶ psi GPa	2.6	FGSTM
		17.8	
Cyclic	10 ³ psi MPa	8.0	D2992(A)
		55.0	
Poisson's Ratio ⁽²⁾ ν_{xy}	—	0.16	FGSTM
		0.17	

⁽¹⁾ Based on structural wall thickness.

⁽²⁾ The first subscript denotes the direction of applied stress and the second that of measured contraction
x denotes longitudinal direction.
y denotes circumferential direction.

Bending Radius						
Pipe Size		Minimum Bending Radius ⁽¹⁾		Maximum Deflection per 20 ft Joint	Minimum Length Required for 10° Change	
in	mm	ft	m	deg	ft	m
2	50	75	23	15	13	4
3	80	100	38	9	22	7
4	100	150	46	7.5	27	8

⁽¹⁾ At rated pressure. Sharper bends may create excessive stress concentrations. Do not bend pipe until adhesive has cured.

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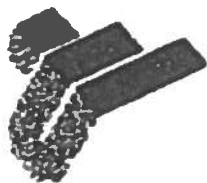
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**FEDERAL PROCESS
CORPORATION**



Waylon Barnes

HFA

**1705 S. Walton Street Blvd., Suite 3
Bentonville
AR 72712**

May 31 2018

Gasolia® E-Seal

We wish to confirm that Gasolia® E-Seal should be compatible with Bio-diesel 100 or

Biodiesel 99.9.

Graham Reed

Graham Reed

Federal Process Corporation

4520 Richmond Road

Cleveland, Ohio 44128

Email: greed@federalprocess.com

Phone Direct: 216 364 0569

Phone: 216 464 6440 Ext. 2242

Loves- Sauget IL B-99 equipment

Probe # TSP- LL2 125-1

Float # TSP IDF4

Sump sensor- TSP- ULS

Interstitial – FMP- E-15

Line leak – TS LSU500 and TS-ELLD

Sub pump FEISTAPKMVS4VL2-24

Overfill drop tube E-708-592-922

October 10, 2019

Chuck Cline
Project Manager
Illinois Oil Marketing Equipment

RE: Fuel Compatibility

This letter is in reference to the following site:

Love's Travel Stop
Wadsworth, IL

Parts and equipment listed are to have been manufactured within calendar year of this letter.

This letter affirms that the list of referenced equipment below is compatible with the following fuels:

Bio Diesel up to 5% B5
Bio Diesel up to 20% B20
Bio Diesel at 97%-100% B99/B100
All ASTM Biofuel blends

Compatible equipment/models:

TSP-LL2-XXX-I (using TSP-SSP Float Only)
FMP-LL3-XXX-I (using TSP-SSP Float Only)
TSP-ULS-C
TSP- DIS, FMP-DIS, FMP-DIS-U (dry interstitial applications only)
TSP-EIS, FMP-EIS, FMP-EIS-U (dry interstitial applications only)

Sincerely



Loren Swalheim
Director, Global Technical Services



Franklin Fueling System

October 15, 2019

Chuck Cline
Project Manager
Illinois Oil Marketing Equipment

RE: Fuel Compatibility

This letter is in reference to the following site:

Love's #758
2005 Moussette Ln
Sauget, IL

Parts and equipment listed are to have been manufactured within calendar year of this letter.

This letter affirms that the list of referenced equipment below is compatible with the following fuels:

Bio Diesel up to 5% B5
Bio Diesel up to 20% B20
Bio Diesel at 97%-100% B99/B100
All ASTM Biofuel blends

Compatible equipment/models:

AGB Models of Defender Series Overfill Prevention valve
708591921, 708591922, 708592921, 708592922, 708594901.

Sincerely



Loren Swalheim
Director, Global Technical Services
Franklin Fueling System

October 15, 2019

Chuck Cline
Project Manager
Illinois Oil Marketing Equipment

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2005 Moussette Ln
Sauget, IL

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Bio Diesel up to 20% B20
Bio Diesel at 97%-100% B99/B100
All ASTM Biofuel blends

Compatible equipment/models:

Defender Series Spill Containment both single and double wall models, specifically part numbers ranges of 705545XXX and 705555XXX.

Sincerely



Loren Swalheim
Director, Global Technical Services
Franklin Fueling System

October 15, 2019

Chuck Cline
Project Manager
Illinois Oil Marketing Equipment

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All ASTM Biofuel blends

Compatible equipment/models:

LS500, LS500/E line leak pressure transducers used for Electronic Line Leak Detection (ELLD) on EVO 550, EVO 5000, TS-550, TS-5000 tank monitoring consoles.

Sincerely



Loren Swalheim
Director, Global Technical Services
Franklin Fueling System

LIMITED WARRANTY

Underground Petroleum Storage Tanks

Xerxes Corporation ("Xerxes") warrants to owner ("Owner") that our underground petroleum storage tanks, if installed, used, and maintained in the United States or Canada in accordance with Xerxes' published specifications, installation instructions and operating guidelines, applicable supplemental materials, all applicable laws and regulations, and limited to storage of the products listed below at ambient temperatures or fuel oils, used in oil burning equipment, at temperatures not to exceed 150°F (65° C):

- 1) Will not fail for a period of thirty (30) years from date of original delivery by Xerxes due to natural external corrosion.
- 2) Will not fail for a period of thirty (30) years from date of original delivery by Xerxes due to internal corrosion, provided the tank is used solely, with or without tank water bottoms, to store the following products:
 - a. gasoline, jet fuel, aviation fuels, motor oils, motor vehicle waste oils, kerosene, diesel fuel, or fuel oils
 - gasoline with up to 20%, by volume, of methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary butyl alcohol (TBA), tertiary amyl methyl ether (TAME), or tertiary amyl ethyl ether (TAE)
 - b. gasoline and ethanol blended motor fuels (per applicable ASTM fuel standards)
 - E10 (90% gasoline and 10% ethanol)
 - E15 (85% gasoline and 15% ethanol)
 - E85 (85% ethanol and 15% gasoline)
 - other ethanol blends up to and including 100% ethanol
 - c. gasoline and methanol blended motor fuels (per applicable ASTM fuel standards)
 - M85 (85% methanol and 15% gasoline)
 - other methanol blends up to and including 100% methanol
 - Oxinol-50 waiver (90.5% gasoline and 9.5% Oxinol-50 comprised of a 4.75% methanol and 4.75% gasoline-grade tertiary butyl alcohol (GTBA) mixture)
 - Dupont EPA waiver (gasoline with 5% methanol and a minimum of 2.5% cosolvent – the blend may contain a maximum concentration of up to 3.7%, by weight, oxygen in the final fuel)
 - d. biodiesel fuel blends up to 100% biodiesel (per applicable ASTM fuel standards)
- 3) Will not fail for a period of thirty (30) years from date of original delivery by Xerxes due to structural failure (defined as spontaneous breaking or collapse caused by material defects in materials or workmanship).
- 4) Will meet Xerxes' published specifications and will be free of material defects in materials and workmanship for a period of one (1) year following the date of original delivery by Xerxes.

Xerxes warrants to Owner that all Xerxes-manufactured tank accessories, if installed, used and maintained in Canada or the United States in accordance with Xerxes' published specifications, installation instructions and operating guidelines, applicable supplemental materials, and all applicable laws and regulations, will be free of material defects in materials and workmanship for a period of one (1) year following the date of original delivery by Xerxes.

If any tank or accessory is to be removed from an installation, moved and reinstalled at Owner's new location and is intended for active service at the new location, the tank and accessories must be recertified by Xerxes to continue the balance of the limited warranty as originally extended.

The foregoing limited warranty does not extend to tanks or accessories ("individually and collectively Goods") damaged due to acts of God, war, terrorism, or failure of Goods caused, in whole or in part, by misuse, unlawful use, improper installation, storage, servicing or maintenance, or operation in excess of their rated capacity or contrary to their recommended use, whether intentional or otherwise, or any other cause or damage of any kind not the fault of Xerxes. Xerxes only warrants repairs or alterations performed by Xerxes or its authorized contractors performing work authorized in advance, in writing, by Xerxes. Xerxes does not warrant any product, components or parts manufactured by others. All consumable components including but not limited to o-rings and gaskets are excluded from this limited warranty.

Owner's sole and exclusive remedy for breach of warranty is limited at Xerxes' option to: (a) repair of the defective tank or accessory, (b) delivery of a replacement tank or accessory to the point of original delivery, or (c) refund of the original purchase price. No warranty claim will be considered without removing the tank and any accessory from the ground if Xerxes deems it necessary to evaluate a warranty claim. In the event of a breach of warranty claim, a claimant must give Xerxes the opportunity to observe and inspect the installation prior to the removal of any backfill below the tank top, and the removal of the tank and any accessory from the ground, or the claim will be forever barred. All claims must be made in writing within one (1) year after tank or accessory failure or be forever barred. ALL RIGHTS, OBLIGATIONS AND CLAIMS UNDER THIS LIMITED WARRANTY SHALL BE EXCLUSIVELY MADE AND DETERMINED IN THE COURTS OF, AND GOVERNED BY THE LAWS OF, THE STATE OF MINNESOTA, U.S.A., EXCLUDING ITS CONFLICT OF LAW PRINCIPLES.

THE FOREGOING WARRANTY CONSTITUTES XERXES' EXCLUSIVE OBLIGATION AND XERXES MAKES NO OTHER WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, WITH RESPECT TO THE GOODS, OR ANY SERVICE, ADVICE, OR CONSULTATION, IF ANY, FURNISHED TO OWNER BY XERXES OR ITS REPRESENTATIVES, WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE. THE SELLER (XERXES) UNDERTAKES NO RESPONSIBILITY FOR THE QUALITY OF THE GOODS, EXCEPT AS OTHERWISE PROVIDED IN THIS CONTRACT. THE SELLER (XERXES) ASSUMES NO RESPONSIBILITY THAT THE GOODS WILL BE FIT FOR ANY PARTICULAR PURPOSE FOR WHICH YOU (OWNER) MAY BE BUYING THESE GOODS, EXCEPT AS OTHERWISE PROVIDED IN THE CONTRACT. THE REMEDIES SET FORTH IN THE ABOVE WARRANTY ARE THE ONLY REMEDIES AVAILABLE TO ANY PERSON OR ENTITY FOR BREACH OF WARRANTY OR FOR BREACH OF ANY OTHER COVENANT, DUTY, OR OBLIGATION ON THE PART OF XERXES. XERXES SHALL HAVE NO LIABILITY OR OBLIGATION TO ANY PERSON OR ENTITY FOR BREACH OF ANY OTHER COVENANT, DUTY, OR OBLIGATION UNDER THIS WARRANTY EXCEPT AS EXPRESSLY SET FORTH HEREIN. IT IS EXPRESSLY AGREED THAT THIS WARRANTY DOES NOT FAIL OF ITS ESSENTIAL PURPOSE. XERXES SHALL HAVE NO LIABILITY FOR COSTS OF INSTALLATION OR REMOVAL OF GOODS, ENVIRONMENTAL CONTAMINATION, FIRES, EXPLOSIONS, OR ANY OTHER CONSEQUENCES ALLEGEDLY ATTRIBUTABLE TO A BREACH OF WARRANTY, OR INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR OTHER DAMAGES OF ANY DESCRIPTION, WHETHER ANY SUCH CLAIM OR DAMAGES BE BASED UPON WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER TORT, OR OTHERWISE. IN NO EVENT SHALL XERXES' TOTAL LIABILITY HEREUNDER EXCEED THE ORIGINAL PURCHASE PRICE OF THE GOODS WHICH GAVE RISE TO SUCH LIABILITY.

Consumer Notice: This warranty gives you (Owner) specific legal rights. You (Owner) may also have other rights which vary from state to state.

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Effective: May 1, 2019

XERXES
CORPORATION