



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-17-19

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 600 Clinical Science 2 (600 EP 14k)

ADDRESS: 97 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0411

EMAIL: burtld@musc.edu, Longmat@musc.edu

CELL: (843) 792-3510

Unit Id : 300-FT-04

Type : UST

Capacity : 15,000

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

☐ Annual/Pre-Clean

☒ Post Clean

☐ None

### SERVICES PERFORMED:

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

☐ ILFC 1032

☐ Biocide Predator 6000

☐ None



### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection

### PARTS CONDITION:

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

### CONTAMINANTS FOUND:

☒ Pre-Clean ☐ Post Clean

☐ None

☐ Bulk Water

☐ Suspended Water

☐ Micro-organisms

☒ Sediments

☐ Rust

☐ Sludge

### VISUAL FUEL RATING:

☐ Pre-Clean ☒ Post Clean

☐ Refinery Fresh

☒ Good

☐ Watch Closely

☐ Advanced Aging

☐ Bad-Not Recommended

☐ Severe-Do Not Use

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: The before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Willi & Tommie

DATE: 7-17-19

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)

4310 Amsterdam St., N. Charleston, SC 29418

www.petroleumrecoveryservices.com



## Certificate of Analysis

Laboratory Number: 73119531

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 300-FT-04  
Sample ID: 300-FT-04  
PO: 632498  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/17/2019  
Date Received: 07/31/2019  
Date Released: 08/5/2019  
Component Make:  
Component Model: UST  
Tank Capacity: 15,000 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	48.8
Cloud Point	report °C	ASTM D2500-99	-11
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	252.22
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	64.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	5.3
Sulfur	15 ppm maximum	ASTM D5453-09	5
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	62

**Comments**

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.

915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-17-19

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 600 Clinical Science 1 (600-CE-16UST)

ADDRESS: 98 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0412

EMAIL: burtld@musc.edu, Longmat@musc.edu

CELL: (843) 792-3511

Unit Id : 300-FT-05

Type : UST

Capacity : 16,000

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

☐ Annual/Pre-Clean

☒ Post Clean

☐ None

### SERVICES PERFORMED:

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

☐ ILFC 1032

☐ Biocide Predator 6000

☐ None



### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection

### PARTS CONDITION:

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

### CONTAMINANTS FOUND:

☒ Pre-Clean ☐ Post Clean

☐ None

☐ Bulk Water

☐ Suspended Water

☐ Micro-organisms

☒ Sediments

☐ Rust

☐ Sludge

### VISUAL FUEL RATING:

☐ Pre-Clean ☒ Post Clean

☐ Refinery Fresh

☒ Good

☐ Watch Closely

☐ Advanced Aging

☐ Bad-Not Recommended

☐ Severe-Do Not Use

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: The before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Willi & Tommie

DATE: 7-17-19

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)

4310 Amsterdam St., N. Charleston, SC 29418

www.petroleumrecoveryservices.com



## Certificate of Analysis

Laboratory Number: 73119532

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 300-FT-05  
Sample ID: 300-FT-05  
PO: 632498  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/17/2019  
Date Received: 07/31/2019  
Date Released: 08/5/2019  
Component Make:  
Component Model: UST  
Tank Capacity: 16,000 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	49
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	252.78
Distillation, 90%	282 - 338 °C	ASTM D86-08a	308.33
Flash Point	52 °C minimum	ASTM D93-10	63.89
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	2.7
Sulfur	15 ppm maximum	ASTM D5453-09	10
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	54

**Comments**

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.

915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-10-19

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: ART Hospital - 38 (AT-1)

ADDRESS: 99 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0413

EMAIL: burtld@musc.edu, Longmat@musc.edu

CELL: (843) 792-3512

Unit Id : 320-0127

Type : AST

Capacity : 10,000

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

☐ Annual/Pre-Clean

☒ Post Clean

☐ None

### SERVICES PERFORMED:

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

☐ ILFC 1032

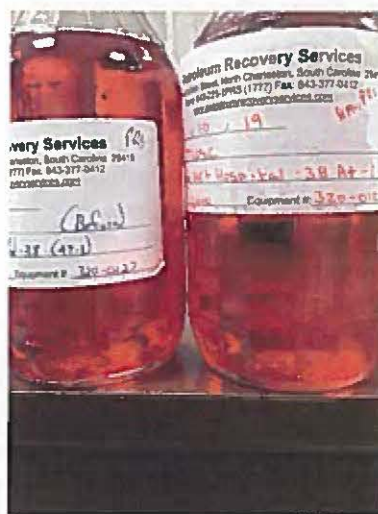
☐ Biocide Predator 6000

☐ None

### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection



### PARTS CONDITION:

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

### CONTAMINANTS FOUND:

<input type="checkbox"/> Pre-Clean	<input checked="" type="checkbox"/> Post Clean
<input checked="" type="checkbox"/> None	
<input type="checkbox"/> Bulk Water	
<input type="checkbox"/> Suspended Water	
<input type="checkbox"/> Micro-organisms	
<input type="checkbox"/> Sediments	
<input type="checkbox"/> Rust	
<input type="checkbox"/> Sludge	

### VISUAL FUEL RATING:

<input type="checkbox"/> Pre-Clean	<input checked="" type="checkbox"/> Post Clean
<input type="checkbox"/> Refinery Fresh	
<input checked="" type="checkbox"/> Good	
<input type="checkbox"/> Watch Closely	
<input type="checkbox"/> Advanced Aging	
<input type="checkbox"/> Bad-Not Recommended	
<input type="checkbox"/> Severe-Do Not Use	

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: Picture of the before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-10-19

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)  
4310 Amsterdam St., N. Charleston, SC 29418  
www.petroileumrecoveryservices.com



Certificate of Analysis

Laboratory Number: 73119533

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 320-0127  
Sample ID: 320-0127  
PO: 632498  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/10/2019  
Date Received: 07/31/2019  
Date Released: 08/5/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 10,000 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46.3
Cloud Point	report °C	ASTM D2500-99	-11
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.78
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.22
Flash Point	52 °C minimum	ASTM D93-10	84.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	3.3
Sulfur	15 ppm maximum	ASTM D5453-09	6
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	57

#### Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

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915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-10-19

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: ART Hospital - 39 (AT-2)

ADDRESS: 100 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0414

EMAIL: burtd@musc.edu, Longmat@musc.edu

CELL: (843) 792-3513

Unit Id : 320-0128

Type : AST

Capacity : 10,000

Material: Dsl

Last Tank Service: 2018

**FUEL SAMPLE TAKEN:**

☐ Annual/Pre-Clean

☒ Post Clean

☐ None

**SERVICES PERFORMED:**

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

**Fuel Treatment:**

☒ HydroClean

☐ ILFC 1032

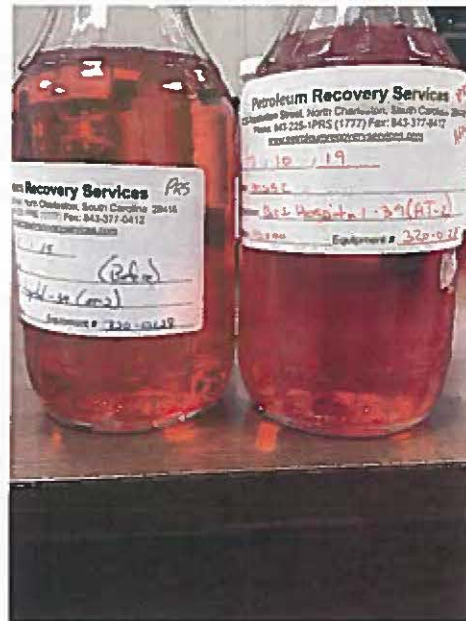
☐ Biocide Predator 6000

☐ None

**Exterior Tank Condition:**

☒ Good ☐ Bad

☐ Recommend Inspection



**PARTS CONDITION:**

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

**CONTAMINANTS FOUND:**

<input type="checkbox"/> Pre-Clean	<input checked="" type="checkbox"/> Post Clean
<input checked="" type="checkbox"/> None	
<input type="checkbox"/> Bulk Water	
<input type="checkbox"/> Suspended Water	
<input type="checkbox"/> Micro-organisms	
<input type="checkbox"/> Sediments	
<input type="checkbox"/> Rust	
<input type="checkbox"/> Sludge	

**VISUAL FUEL RATING:**

<input type="checkbox"/> Pre-Clean	<input checked="" type="checkbox"/> Post Clean
<input type="checkbox"/> Refinery Fresh	
<input checked="" type="checkbox"/> Good	
<input type="checkbox"/> Watch Closely	
<input type="checkbox"/> Advanced Aging	
<input type="checkbox"/> Bad-Not Recommended	
<input type="checkbox"/> Severe-Do Not Use	

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: Picture of the before cleaning sample is on the left and the after cleaning sample is on the right.

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-10-19

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)  
4310 Amsterdam St., N. Charleston, SC 29418  
www.petroileumrecoveryservices.com



## Certificate of Analysis

Laboratory Number: 73119534

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 320-0128  
Sample ID: 320-0128  
PO: 632498  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/10/2019  
Date Received: 07/31/2019  
Date Released: 08/5/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 10,000 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46.1
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.22
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.22
Flash Point	52 °C minimum	ASTM D93-10	78.33
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	0.7
Sulfur	15 ppm maximum	ASTM D5453-09	5
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	51

**Comments**

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

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915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-23-2019

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 320 Ashley Bldg DT2 (320-0974-DT2)

ADDRESS: 101 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0415

EMAIL: burtd@musc.edu, Longmat@musc.edu

CELL: (843) 792-3514

Unit Id : 320-0974

Type : AST

Capacity : 50

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

☐ Annual/Pre-Clean

☒ Post Clean

☐ None

### SERVICES PERFORMED:

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

☐ ILFC 1032

☐ Biocide Predator 6000

☐ None



### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection

### PARTS CONDITION:

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

### CONTAMINANTS FOUND:

☒ Pre-Clean ☐ Post Clean

☐ None

☐ Bulk Water

☐ Suspended Water

☐ Micro-organisms

☒ Sediments

☐ Rust

☐ Sludge

### VISUAL FUEL RATING:

☐ Pre-Clean ☒ Post Clean

☐ Refinery Fresh

☒ Good

☐ Watch Closely

☐ Advanced Aging

☐ Bad-Not Recommended

☐ Severe-Do Not Use

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: The before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Mike & Tommie

DATE: 7-23-2019

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)  
4310 Amsterdam St., N. Charleston, SC 29418  
www.petroileumrecoveryservices.com



Certificate of Analysis

Laboratory Number: 80219518

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 320-0974  
Sample ID: 320-0974  
PO: 632503  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/23/2019  
Date Received: 08/2/2019  
Date Released: 08/7/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 50 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46.5
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	243.33
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	84.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	0
Sulfur	15 ppm maximum	ASTM D5453-09	6
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	166

#### Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.

915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-23-2019

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 320 Ashley Bldg DT1 (320-0976-DT1)

ADDRESS: 102 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0416

EMAIL: burtd@musc.edu, Longmat@musc.edu

CELL: (843) 792-3515

Unit Id : 320-0976

Type : AST

Capacity : 50

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

Annual/Pre-Clean

☒ Post Clean

None

### SERVICES PERFORMED:

Maintenance

STI 001 Inspection

☒ Tank Cleaning

Bottom Sweep

Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

ILFC 1032

Biocide Predator 6000

None



### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection

### PARTS CONDITION:

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

### CONTAMINANTS FOUND:

☒ Pre-Clean ☐ Post Clean

None

Bulk Water

Suspended Water

Micro-organisms

☒ Sediments

Rust

Sludge

### VISUAL FUEL RATING:

☐ Pre-Clean ☒ Post Clean

Refinery Fresh

☒ Good

Watch Closely

Advanced Aging

Bad-Not Recommended

Severe-Do Not Use

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: The before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Mike & Tommie

DATE: 7-23-2019

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)  
4310 Amsterdam St., N. Charleston, SC 29418  
www.petroleumrecoveryservices.com



Certificate of Analysis

Laboratory Number: 80219519

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 320-0976  
Sample ID: 320-0976  
PO: 632503  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/23/2019  
Date Received: 08/2/2019  
Date Released: 08/7/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 50 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	37
Celane Index	40 minimum	ASTM D976-01	44.7
Cloud Point	report °C	ASTM D2500-99	-11
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	243.33
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	76.67
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	4.7
Sulfur	15 ppm maximum	ASTM D5453-09	6
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	127

#### Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.

915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-22-2019

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 325 CEP DT1 (325-0030-DT1)

ADDRESS: 103 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0417

EMAIL: burttd@musc.edu, Longmat@musc.edu

CELL: (843) 792-3516

Unit Id : 325-0030

Type : AST

Capacity : 150

Material: Dsl

Last Tank Service: 2018

**FUEL SAMPLE TAKEN:**

- ☐ Annual/Pre-Clean  
☒ Post Clean  
☐ None

**SERVICES PERFORMED:**

- ☐ Maintenance  
☐ STI 001 Inspection  
☒ Tank Cleaning  
☐ Bottom Sweep  
☐ Pre-clean Lab Analysis  
☒ Post-clean Lab Analysis

**Fuel Treatment:**

- ☒ HydroClean  
☐ ILFC 1032  
☐ Biocide Predator 6000  
☐ None

**Exterior Tank Condition:**

- ☒ Good ☐ Bad  
☐ Recommend Inspection



**PARTS CONDITION:**

<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Fill Cap
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Vent
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Fill Port
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Sump
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Spill Bucket
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Gauge
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Gaskets

**CONTAMINANTS FOUND:**

- ☒ Pre-Clean ☐ Post Clean  
☐ None  
☐ Bulk Water  
☐ Suspended Water  
☐ Micro-organisms  
☒ Sediments  
☐ Rust  
☐ Sludge

**VISUAL FUEL RATING:**

- ☐ Pre-Clean ☒ Post Clean  
☐ Refinery Fresh  
☒ Good  
☐ Watch Closely  
☐ Advanced Aging  
☐ Bad-Not Recommended  
☐ Severe-Do Not Use

**THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION**

*\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications*

**THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.**

*\*Lab Report will determine fuel parameters based on ASTM D975 Specifications*

COMMENTS: The before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Mike & Tommie

DATE: 7-22-2019

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)  
4310 Amsterdam St., N. Charleston, SC 29418  
www.petroleumrecoveryservices.com



## Certificate of Analysis

Laboratory Number: 80219520

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 325-0030  
Sample ID: 325-0030  
PO: 632503  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/22/2019  
Date Received: 08/2/2019  
Date Released: 08/7/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 150 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	37
Cetane Index	40 minimum	ASTM D976-01	46.4
Cloud Point	report °C	ASTM D2500-99	-9
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	249.44
Distillation, 90%	282 - 338 °C	ASTM D86-08a	308.89
Flash Point	52 °C minimum	ASTM D93-10	70.0
Microbial Growth	report	Micro/Culture Medium	Negative
Sulfur	15 ppm maximum	ASTM D5453-09	7
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	91

**Comments**

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.

915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-9-19

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Central Energy - 35 (CE-35)

ADDRESS: 104 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0418

EMAIL: burtd@musc.edu, Longmat@musc.edu

CELL: (843) 792-3517

Unit Id : 325-0148

Type : AST

Capacity : 12,000

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

☐ Annual/Pre-Clean

☒ Post Clean

☐ None

### SERVICES PERFORMED:

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

☐ ILFC 1032

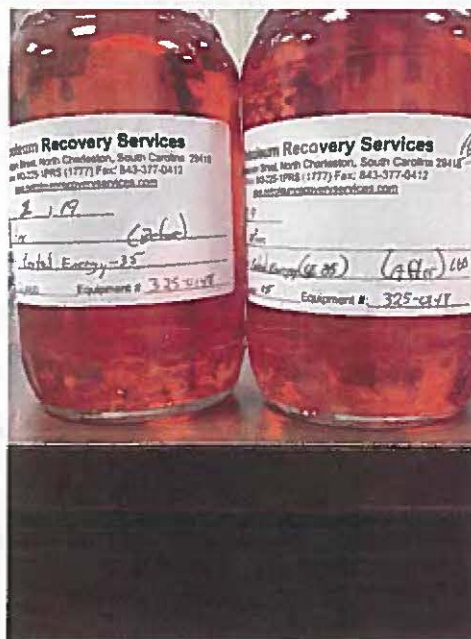
☐ Biocide Predator 6000

☐ None

### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection



### PARTS CONDITION:

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

### CONTAMINANTS FOUND:

☒ Pre-Clean ☐ Post Clean

☐ None

☐ Bulk Water

☐ Suspended Water

☐ Micro-organisms

☒ Sediments

☐ Rust

☐ Sludge

### VISUAL FUEL RATING:

☐ Pre-Clean ☒ Post Clean

☐ Refinery Fresh

☒ Good

☐ Watch Closely

☐ Advanced Aging

☐ Bad-Not Recommended

☐ Severe-Do Not Use

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: Picture of the before cleaning sample is on the left and the after cleaning sample is on the right.

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-9-19

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)  
4310 Amsterdam St., N. Charleston, SC 29418  
www.petroileumrecoveryservices.com



## Certificate of Analysis

Laboratory Number: 73119535

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 325-0148  
Sample ID: 325-0148  
PO: 632498  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/9/2019  
Date Received: 07/31/2019  
Date Released: 08/5/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 12,000 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	48.2
Cloud Point	report °C	ASTM D2500-99	-13
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	249.44
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	71.11
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	5.3
Sulfur	15 ppm maximum	ASTM D5453-09	5
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	64

## Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.

915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-9-19

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Central Energy - 36 (CE-36)

ADDRESS: 105 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0419

EMAIL: burtld@musc.edu, Longmat@musc.edu

CELL: (843) 792-3518

Unit Id : 325-0149

Type : AST

Capacity : 12,000

Material: Dsl

Last Tank Service: 2018

**FUEL SAMPLE TAKEN:**

☐ Annual/Pre-Clean

☒ Post Clean

☐ None

**SERVICES PERFORMED:**

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

**Fuel Treatment:**

☒ HydroClean

☐ ILFC 1032

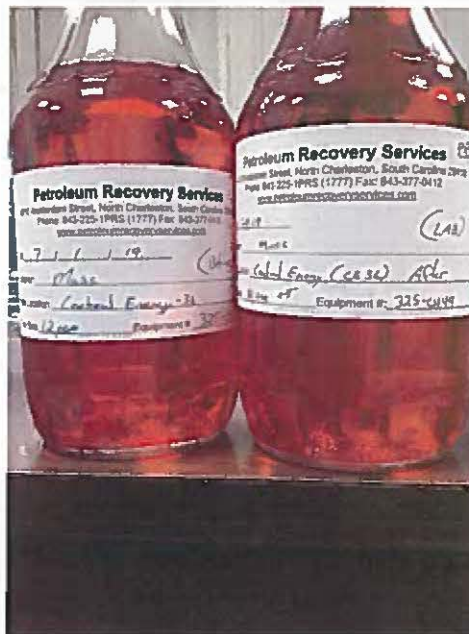
☐ Biocide Predator 6000

☐ None

**Exterior Tank Condition:**

☒ Good ☐ Bad

☐ Recommend Inspection



**PARTS CONDITION:**

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

**CONTAMINANTS FOUND:**

☒ Pre-Clean ☐ Post Clean

☐ None

☐ Bulk Water

☐ Suspended Water

☐ Micro-organisms

☒ Sediments

☐ Rust

☐ Sludge

**VISUAL FUEL RATING:**

☐ Pre-Clean ☒ Post Clean

☐ Refinery Fresh

☒ Good

☐ Watch Closely

☐ Advanced Aging

☐ Bad-Not Recommended

☐ Severe-Do Not Use

**THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION**

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

**THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.**

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: Picture of the before cleaning sample is on the left and the after cleaning sample is on the right.

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-9-19

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)

4310 Amsterdam St., N. Charleston, SC 29418

www.petroleumrecoveryservices.com



Certificate of Analysis

Laboratory Number: 73119536

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 325-0149  
Sample ID: 325-0149  
PO: 632498  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/9/2019  
Date Received: 07/31/2019  
Date Released: 08/5/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 12,000 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46.8
Cloud Point	report °C	ASTM D2500-99	-12
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	244.44
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	64.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	1.3
Sulfur	15 ppm maximum	ASTM D5453-09	10
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	70

#### Comments

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.

915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-10-19

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Central Energy - 37 (CE-37)

ADDRESS: 106 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0420

EMAIL: burtd@musc.edu, Longmat@musc.edu

CELL: (843) 792-3519

Unit Id : 325-0150

Type : AST Capacity : 12,000

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

Annual/Pre-Clean

☒ Post Clean

None

### SERVICES PERFORMED:

Maintenance

STI 001 Inspection

☒ Tank Cleaning

Bottom Sweep

Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

ILFC 1032

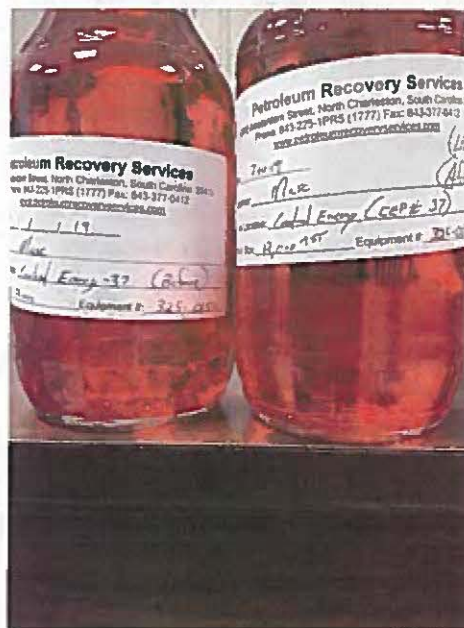
Biocide Predator 6000

None

### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection



### PARTS CONDITION:

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

### CONTAMINANTS FOUND:

<input type="checkbox"/> Pre-Clean	<input checked="" type="checkbox"/> Post Clean
<input checked="" type="checkbox"/> None	
<input type="checkbox"/> Bulk Water	
<input type="checkbox"/> Suspended Water	
<input type="checkbox"/> Micro-organisms	
<input type="checkbox"/> Sediments	
<input type="checkbox"/> Rust	
<input type="checkbox"/> Sludge	

### VISUAL FUEL RATING:

<input type="checkbox"/> Pre-Clean	<input checked="" type="checkbox"/> Post Clean
<input type="checkbox"/> Refinery Fresh	
<input checked="" type="checkbox"/> Good	
<input type="checkbox"/> Watch Closely	
<input type="checkbox"/> Advanced Aging	
<input type="checkbox"/> Bad-Not Recommended	
<input type="checkbox"/> Severe-Do Not Use	

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: Picture of the before cleaning sample is on the left and the after cleaning sample is on the right.

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-10-19

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)  
4310 Amsterdam St., N. Charleston, SC 29418  
www.petroileumrecovery.com



## Certificate of Analysis

Laboratory Number: 73119537

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 325-0150  
Sample ID: 325-0150  
PO: 632498  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/10/2019  
Date Received: 07/31/2019  
Date Released: 08/5/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 12,000 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	48.7
Cloud Point	report °C	ASTM D2500-99	-12
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	251.67
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	71.11
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D7321-08	0.7
Sulfur	15 ppm maximum	ASTM D5453-09	6
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	51

**Comments**

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.

915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 07-22-2019

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 325 CEP (600)

ADDRESS: 121 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0435

EMAIL: burtd@musc.edu, Longmat@musc.edu

CELL: (843) 792-3534

Unit Id : 325-36201

Type : SBT

Capacity : 600

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

Annual/Pre-Clean

☒ Post Clean

☐ None

### SERVICES PERFORMED:

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

☐ ILFC 1032

☐ Biocide Predator 6000

☐ None



### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection

### PARTS CONDITION:

<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Fill Cap
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Vent
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Fill Port
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Sump
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Spill Bucket
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Gauge
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Gaskets

### CONTAMINANTS FOUND:

<input checked="" type="checkbox"/>	Pre-Clean	<input type="checkbox"/>	Post Clean
<input type="checkbox"/>	None		
<input type="checkbox"/>	Bulk Water		
<input type="checkbox"/>	Suspended Water		
<input type="checkbox"/>	Micro-organisms		
<input checked="" type="checkbox"/>	Sediments		
<input type="checkbox"/>	Rust		
<input type="checkbox"/>	Sludge		

### VISUAL FUEL RATING:

<input type="checkbox"/>	Pre-Clean	<input checked="" type="checkbox"/>	Post Clean
<input type="checkbox"/>	Refinery Fresh		
<input checked="" type="checkbox"/>	Good		
<input type="checkbox"/>	Watch Closely		
<input type="checkbox"/>	Advanced Aging		
<input type="checkbox"/>	Bad-Not Recommended		
<input type="checkbox"/>	Severe-Do Not Use		

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: The before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Mike & Tommie

DATE: 07-22-2019

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)  
4310 Amsterdam St., N. Charleston, SC 29418  
www.petroileumrecoveryservices.com



## Certificate of Analysis

Laboratory Number: 80219528

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 325-36201  
Sample ID: 325-36201  
PO: 632503  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/22/2019  
Date Received: 08/2/2019  
Date Released: 08/7/2019  
Component Make:  
Component Model: SBT  
Tank Capacity: 600 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46.3
Cloud Point	report °C	ASTM D2500-99	-11
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.78
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.22
Flash Point	52 °C minimum	ASTM D93-10	63.33
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	0.7
Sulfur	15 ppm maximum	ASTM D5453-09	11
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	62

**Comments**

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.

915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-23-2019

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 358 SCEP (Sabin St) DT1 (358-0146-DT1)

ADDRESS: 107 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0421

EMAIL: burtd@musc.edu, Longmat@musc.edu

CELL: (843) 792-3520

Unit Id : 358-0146DT

Type : AST

Capacity : 400

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

☐ Annual/Pre-Clean

☒ Post Clean

☐ None

### SERVICES PERFORMED:

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

☐ ILFC 1032

☐ Biocide Predator 6000

☐ None



### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection

### PARTS CONDITION:

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

### CONTAMINANTS FOUND:

☒ Pre-Clean ☐ Post Clean

☐ None  
☐ Bulk Water  
☐ Suspended Water  
☐ Micro-organisms  
☒ Sediments  
☐ Rust  
☐ Sludge

### VISUAL FUEL RATING:

☐ Pre-Clean ☒ Post Clean

☐ Refinery Fresh  
☒ Good  
☐ Watch Closely  
☐ Advanced Aging  
☐ Bad-Not Recommended  
☐ Severe-Do Not Use

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS: The before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Mike & Tommie

DATE: 7-23-2019

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)  
4310 Amsterdam St., N. Charleston, SC 29418  
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## Certificate of Analysis

Laboratory Number: 80219521

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 358-0146DT  
Sample ID: 358-0146DT  
PO: 632503  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/23/2019  
Date Received: 08/2/2019  
Date Released: 08/7/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 400 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46
Cloud Point	report °C	ASTM D2500-99	-9
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	241.67
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	65.0
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	7.3
Sulfur	15 ppm maximum	ASTM D5453-09	27
Visual Appearance	Visual	ASTM D4176-04	Clear, Few Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.005
Water by Karl Fischer	report in ppm	ASTM D6304-16	73

**Comments**

**High Sulfur:** Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

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## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-23-2019

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 358 SCEP (Sabin St) DT2 (358-0147-DT2)

ADDRESS: 108 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0422

EMAIL: burtd@musc.edu, Longmat@musc.edu

CELL: (843) 792-3521

Unit Id : 358-0147DT

Type : AST

Capacity : 400

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

Annual/Pre-Clean

☒ Post Clean

None

### SERVICES PERFORMED:

Maintenance

STI 001 Inspection

☒ Tank Cleaning

Bottom Sweep

Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

ILFC 1032

Biocide Predator 6000

None



### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection

### PARTS CONDITION:

<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Fill Cap
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Vent
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Fill Port
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Sump
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Spill Bucket
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Gauge
<input checked="" type="checkbox"/>	Good	<input type="checkbox"/>	Bad	<input type="checkbox"/>	N/A - Gaskets

### CONTAMINANTS FOUND:

☒ Pre-Clean ☐ Post Clean

None

Bulk Water

Suspended Water

Micro-organisms

☒ Sediments

Rust

Sludge

### VISUAL FUEL RATING:

☐ Pre-Clean ☒ Post Clean

Refinery Fresh

☒ Good

Watch Closely

Advanced Aging

Bad-Not Recommended

Severe-Do Not Use

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications



THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications



COMMENTS: The before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Mike & Tommie

DATE: 7-23-2019

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www.petroleumrecoveryservices.com



## Certificate of Analysis

Laboratory Number: 80219522

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 358-0147DT  
Sample ID: 358-0147DT  
PO: 632503  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/23/2019  
Date Received: 08/2/2019  
Date Released: 08/7/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 400 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46
Cloud Point	report °C	ASTM D2500-99	-12
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	241.67
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	66.11
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	5.3
Sulfur	15 ppm maximum	ASTM D5453-09	27
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	56

## Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

These results are submitted pursuant to our terms, conditions and limitations and laboratory pricing policy. No responsibility is assumed for the manner in which these results are used or interpreted.

915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-23-2019

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 358 SCEP (Sabin St) DT3 (358-0148-DT3)

ADDRESS: 109 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0423

EMAIL: burtd@musc.edu, Longmat@musc.edu

CELL: (843) 792-3522

Unit Id : 358-0148DT

Type : AST

Capacity : 400

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

☐ Annual/Pre-Clean

☒ Post Clean

☐ None

### SERVICES PERFORMED:

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

☐ ILFC 1032

☐ Biocide Predator 6000

☐ None



### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection

### PARTS CONDITION:

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

### CONTAMINANTS FOUND:

☒ Pre-Clean ☐ Post Clean

☐ None

☐ Bulk Water

☐ Suspended Water

☐ Micro-organisms

☒ Sediments

☐ Rust

☐ Sludge

### VISUAL FUEL RATING:

☐ Pre-Clean ☒ Post Clean

☐ Refinery Fresh

☒ Good

☐ Watch Closely

☐ Advanced Aging

☐ Bad-Not Recommended

☐ Severe-Do Not Use

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications



THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications



COMMENTS:

The before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Mike & Tommie

DATE: 7-23-2019

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)  
4310 Amsterdam St., N. Charleston, SC 29418  
www.petroleumrecoveryservices.com



## Certificate of Analysis

Laboratory Number: 80219523

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 358-0148DT  
Sample ID: 358-0148DT  
PO: 632503  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/23/2019  
Date Received: 08/2/2019  
Date Released: 08/7/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 400 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46
Cloud Point	report °C	ASTM D2500-99	-12
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	241.67
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	76.67
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	2.7
Sulfur	15 ppm maximum	ASTM D5453-09	27
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	61

## Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

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915 Jefferson St., Vancouver, WA 98660 : 360-546-3835



## Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 7-23-2019

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 358 SCEP (Sabin St) DT4 (358-0149-DT4)

ADDRESS: 110 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0424

EMAIL: burt@musc.edu, Longmat@musc.edu

CELL: (843) 792-3523

Unit Id : 358-0149DT

Type : AST

Capacity : 400

Material: Dsl

Last Tank Service: 2018

### FUEL SAMPLE TAKEN:

☐ Annual/Pre-Clean

☒ Post Clean

☐ None

### SERVICES PERFORMED:

☐ Maintenance

☐ STI 001 Inspection

☒ Tank Cleaning

☐ Bottom Sweep

☐ Pre-clean Lab Analysis

☒ Post-clean Lab Analysis

### Fuel Treatment:

☒ HydroClean

☐ ILFC 1032

☐ Biocide Predator 6000

☐ None



### Exterior Tank Condition:

☒ Good ☐ Bad

☐ Recommend Inspection

### PARTS CONDITION:

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Cap
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Vent
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Fill Port
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Sump
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Spill Bucket
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gauge
<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Bad	<input type="checkbox"/> N/A - Gaskets

### CONTAMINANTS FOUND:

<input checked="" type="checkbox"/> Pre-Clean	<input type="checkbox"/> Post Clean
<input type="checkbox"/> None	
<input type="checkbox"/> Bulk Water	
<input type="checkbox"/> Suspended Water	
<input type="checkbox"/> Micro-organisms	
<input checked="" type="checkbox"/> Sediments	
<input type="checkbox"/> Rust	
<input type="checkbox"/> Sludge	

### VISUAL FUEL RATING:

<input type="checkbox"/> Pre-Clean	<input checked="" type="checkbox"/> Post Clean
<input type="checkbox"/> Refinery Fresh	
<input checked="" type="checkbox"/> Good	
<input type="checkbox"/> Watch Closely	
<input type="checkbox"/> Advanced Aging	
<input type="checkbox"/> Bad-Not Recommended	
<input type="checkbox"/> Severe-Do Not Use	

THIS TANK DOES NOT PASS ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION

\*Tank cleaning is recommended based on Visual Fuel Inspection ONLY. Lab Report will determine fuel parameters based on ASTM D975 Specifications

THIS TANK PASSES THE ASTM D975 "CLEAR & BRIGHT" VISUAL INSPECTION.

\*Lab Report will determine fuel parameters based on ASTM D975 Specifications

COMMENTS:

The before cleaning sample is on the left and the after cleaning sample is on the right

SERVICE TECHNICIAN: Mike & Tommie

DATE: 7-23-2019

877-252-6396 (Toll Free) • 843-225-1777 • 843-377-0412 (Fax)

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www.petroleumrecoveryservices.com



## Certificate of Analysis

Laboratory Number: 80219524

Loretta Shaw  
Petroleum Recovery Services  
4310 Amsterdam St.  
North Charleston, SC 29418  
843-225-1777

Sample Taken From: 358-0149DT  
Sample ID: 358-0149DT  
PO: 632503  
WO: MUSC - Hospital - Post

Sample Collection Date: 07/23/2019  
Date Received: 08/2/2019  
Date Released: 08/7/2019  
Component Make:  
Component Model: AST  
Tank Capacity: 400 g  
Quantity in Tank:  
Test Package: PRS Package  
Type of Fuel: ULSD  
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	38
Cetane Index	40 minimum	ASTM D976-01	46.1
Cloud Point	report °C	ASTM D2500-99	-7
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	242.22
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	68.33
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	2.7
Sulfur	15 ppm maximum	ASTM D5453-09	66
Visual Appearance	Visual	ASTM D4176-04	Clear, Trace Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	47

## Comments

High Sulfur: Too much sulfur can cause wear in diesel engines as a result of the corrosive nature of its combustion by-products. It also increases the amount of deposits in the combustion chamber and on the pistons. ASTM sets limits at 15ppm ULSD, 500ppm LSD & 5,000 High Sulfur.

Limits for Particulate Contamination are 10 mg/L in Marine diesel fuel; Petroleum Recovery Services recommends fuel maintenance/filtration on any fuel with 200 ppm or higher of water present.

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