



Industrial Tank Field Report

GROUP INFO: MUSC Health

DATE: 08/09/2019

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Building 108 #2 (Pharmacy gen. Tank)

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 : 108-FT-28

Type : AST

Capacity : 3,000

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

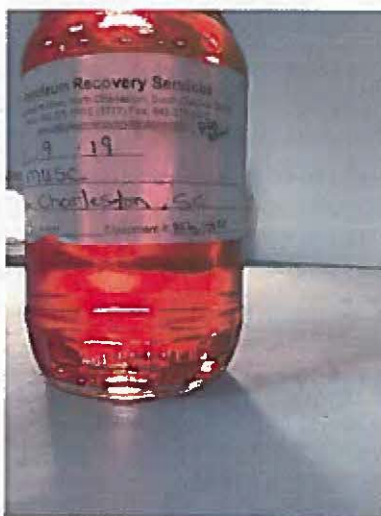
Fuel Treatment:

☒ 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: This is after cleaning sample

SERVICE TECHNICIAN: Mike and Tommie

DATE: 08/09/2019

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

4310 Amsterdam St., N. Charleston, SC 29418

www.petroileumrecoveryervices.com



Certificate of Analysis

Laboratory Number: 82319516

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

Sample Taken From: 108-FT-28
Sample ID: 108-FT-28
PO: 632519
WO: MUSC - University - Post

Sample Collection Date: 08/9/2019
Date Received: 08/23/2019
Date Released: 08/30/2019
Component Make:
Component Model: AST
Tank Capacity: 3,000 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	37
Cetane Index	40 minimum	ASTM D976-01	44.6
Cloud Point	report °C	ASTM D2500-99	-9
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	58.33
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	20
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

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: 7-2-19

CUSTOMER: MUSC

INFO-OTHER: Hospital tanks

FACILITY: Building 600 - Clinical Science (7th Floor)

ADDRESS: 127 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0441

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

CELL: (843) 792-3540

Unit Id : New-600-7th-275g

Type : SBT

Capacity : 275

Material: Dsl

Last Tank Service: New

FUEL SAMPLE TAKEN:

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

SERVICES PERFORMED:

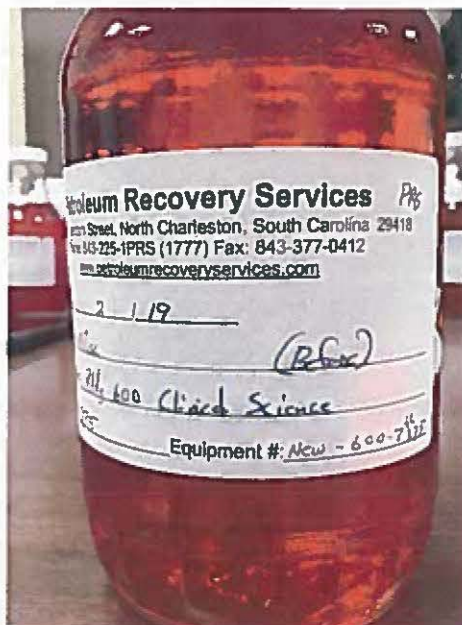
- ☐ Maintenance
☐ STI 001 Inspection
☐ Tank Cleaning
☐ Bottom Sweep
☒ Pre-clean Lab Analysis
☐ Post-clean Lab Analysis

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

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-2-19

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: 71619530

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

Sample Taken From: NEW-600-7th-275
Sample ID: NEW-600-7th-275
PO: 632488
WO: MUSC-Hospital - Pre

Sample Collection Date: 07/2/2019
Date Received: 07/16/2019
Date Released: 07/19/2019
Component Make:
Component Model: SBT
Tank Capacity: 275 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	44
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	240.56
Distillation, 90%	282 - 338 °C	ASTM D86-08a	306.67
Flash Point	52 °C minimum	ASTM D93-10	75.56
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	0
Sulfur	15 ppm maximum	ASTM D5453-09	25
Visual Appearance	Visual	ASTM D4176-04	Clear, Few Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.001
Water by Karl Fischer	report in ppm	ASTM D6304-16	39

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: 07-03-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: BSB Grounds (White Port Gen)

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

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0411

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

CELL: (843) 792-3510

Unit Id : 100-01-100DT

Type : SBT

Capacity : 200

Material: Dsl

Last Tank Service: 2018

FUEL SAMPLE TAKEN:

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

SERVICES PERFORMED:

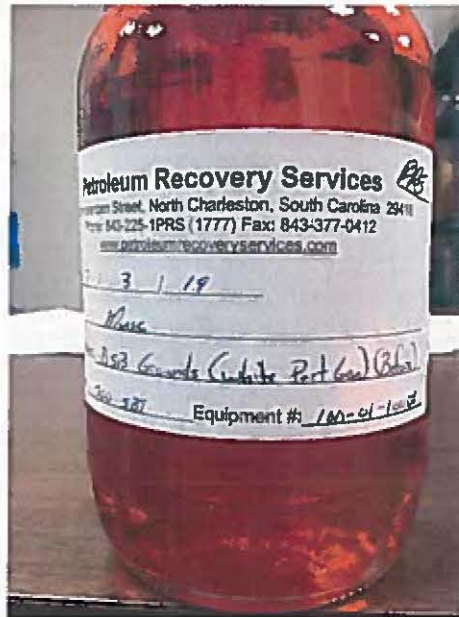
- ☐ Maintenance
☐ STI 001 Inspection
☐ Tank Cleaning
☐ Bottom Sweep
☒ Pre-clean Lab Analysis
☐ Post-clean Lab Analysis

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

SERVICE TECHNICIAN: Ron, Steven & Mike

DATE: 07-03-19

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



Certificate of Analysis

Laboratory Number: 71519502

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

Sample Taken From: 100-01-100DT
Sample ID: 100-01-100DT
PO: 632487
WO: MUSC-University - Pre

Sample Collection Date: 07/3/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: SBT
Tank Capacity: 200 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
Type of Fuel: ULSD
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	36
Cetane Index	40 minimum	ASTM D976-01	44.2
Cloud Point	report °C	ASTM D2500-99	-8
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	247.78
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	72.22
Microbial Growth	report	Micro/Culture Medium	Positive
Particulate Contamination	report in milligrams/liter	ASTM D7321-08	1.3
Sulfur	15 ppm maximum	ASTM D5453-09	12
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	79

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: 07-03-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: BSB Grounds (Emg Light Terex)

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

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0412

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

CELL: (843) 792-3511

Unit Id : 100-01-123DT

Type : SBT

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: Picture of the before cleaning sample

SERVICE TECHNICIAN: Ron, Steven & Mike

DATE: 07-03-19

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



Certificate of Analysis

Laboratory Number: 71519503

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

Sample Taken From: 100-01-123DT
Sample ID: 100-01-123DT
PO: 632487
WO: MUSC-University - Pre

Sample Collection Date: 07/3/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: SBT
Tank Capacity: 50 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	65.0
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	31
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	79

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: 07-02-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Building 770 (ST Under Stairs) (770-01-124DT)

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

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0413

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

CELL: (843) 792-3512

Unit Id : 100-01-124-DT

Type : AST

Capacity : 200

Material: Dsl

Last Tank Service: 2018

FUEL SAMPLE TAKEN:

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

SERVICES PERFORMED:

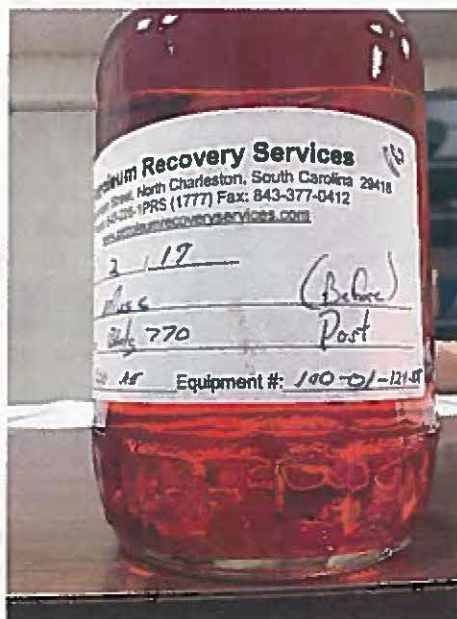
- ☐ Maintenance
☐ STI 001 Inspection
☐ Tank Cleaning
☐ Bottom Sweep
☒ Pre-clean Lab Analysis
☐ Post-clean Lab Analysis

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

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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

SERVICE TECHNICIAN: Ron and Steven

DATE: 07-02-19

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: 71519504

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

Sample Taken From: 100-01-124DT
Sample ID: 100-01-124DT
PO: 632487
WO: MUSC-University - Pre

Sample Collection Date: 07/2/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: AST
Tank Capacity: 200 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	-12
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	306.67
Flash Point	52 °C minimum	ASTM D93-10	72.22
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D7321-08	2.7
Sulfur	15 ppm maximum	ASTM D5453-09	17
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	55

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: 7-24-2019

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: 230 Albemarle Rd (Black Beauty #1)

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 : 100-01-GEN1DT

Type : AST

Capacity : 500

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: 7-24-2019

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



Certificate of Analysis

Laboratory Number: 80219530

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

Sample Taken From: 100-01-GEN1DT
Sample ID: 100-01-GEN1DT
PO: 632504
WO: MUSC - University - Post

Sample Collection Date: 07/24/2019
Date Received: 08/2/2019
Date Released: 08/7/2019
Component Make:
Component Model: AST
Tank Capacity: 500 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	47.7
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	247.78
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 D7321-08	5.3
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	72

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: University Tanks

FACILITY: 230 Albemarle Rd (Black Beauty #2)

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 : 100-01-GEN2DT

Type : AST

Capacity : 1,000

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: 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: 80219531

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

Sample Taken From: 100-01-GEN2DT
Sample ID: 100-01-GEN2DT
PO: 632504
WO: MUSC - University - Post

Sample Collection Date: 07/22/2019
Date Received: 08/2/2019
Date Released: 08/7/2019
Component Make:
Component Model: AST
Tank Capacity: 1,000 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	36
Cetane Index	40 minimum	ASTM D976-01	42.7
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	307.78
Flash Point	52 °C minimum	ASTM D93-10	74.44
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	8
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: 7-22-2019

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: 230 Albemarle Rd (Black Beauty #3)

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 : 100-01-GEN3DT

Type : AST

Capacity : 1,000

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: 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: 80219532

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

Sample Taken From: 100-01-GEN3DT
Sample ID: 100-01-GEN3DT
PO: 632504
WO: MUSC - University - Post

Sample Collection Date: 07/22/2019
Date Received: 08/2/2019
Date Released: 08/7/2019
Component Make:
Component Model: AST
Tank Capacity: 1,000 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	37
Cetane Index	40 minimum	ASTM D976-01	45.1
Cloud Point	report °C	ASTM D2500-99	-8
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	4.7
Sulfur	15 ppm maximum	ASTM D5453-09	8
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	98

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: 07-03-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Portable Fuel Trailer (810-01-01P)

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

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0417

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

CELL: (843) 792-3516

Unit Id : 100-FT-990G

Type : AST

Capacity : 990

Material: Dsl

Last Tank Service: 2018

FUEL SAMPLE TAKEN:

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

SERVICES PERFORMED:

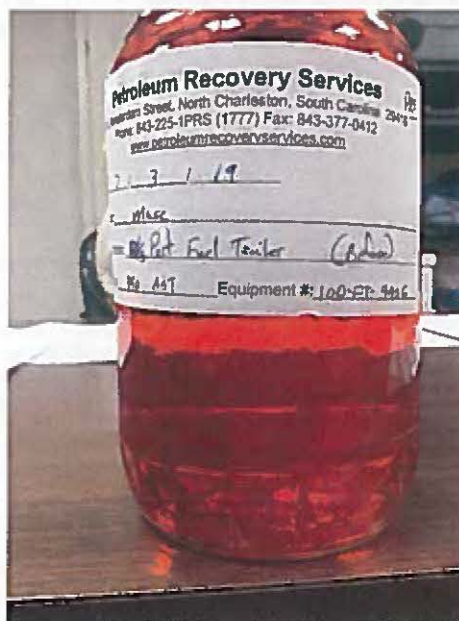
- ☐ Maintenance
☐ STI 001 Inspection
☐ Tank Cleaning
☐ Bottom Sweep
☒ Pre-clean Lab Analysis
☐ Post-clean Lab Analysis

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

SERVICE TECHNICIAN: Ron and Steven

DATE: 07-03-19

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: 71519505

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

Sample Taken From: 100-FT-990G
Sample ID: 100-FT-990G
PO: 643487
WO: MUSC-University - Pre

Sample Collection Date: 07/3/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: AST
Tank Capacity: 990 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	46.6
Cloud Point	report °C	ASTM D2500-99	-11
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	250.0
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	62.78
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	4
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	63

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: 07-03-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Building 108 (Caterpillar Day Tank)

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

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0419

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

CELL: (843) 792-3518

Unit Id : 108-01-15DT

Type : AST

Capacity : 75

Material: Dsl

Last Tank Service: 2018

FUEL SAMPLE TAKEN:

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

SERVICES PERFORMED:

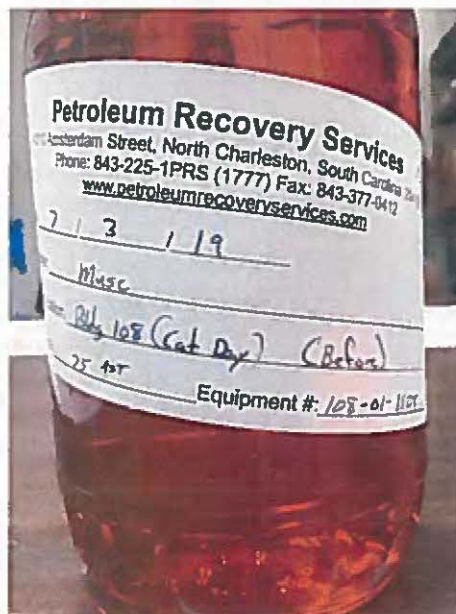
- ☐ Maintenance
☐ STI 001 Inspection
☐ Tank Cleaning
☐ Bottom Sweep
☒ Pre-clean Lab Analysis
☐ Post-clean Lab Analysis

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

SERVICE TECHNICIAN: Ron and Steven

DATE: 07-03-19

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: 71519507

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

Sample Taken From: 108-01-15DT
Sample ID: 108-01-15DT
PO: 632487
WO: MUSC-University - Pre

Sample Collection Date: 07/3/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: AST
Tank Capacity: 75 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	44.6
Cloud Point	report °C	ASTM D2500-99	-9
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	61.67
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	8.7
Sulfur	15 ppm maximum	ASTM D5453-09	23
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	95

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: 8/9/19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Building 108 (Detroit Day Tank)

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 : 108-01-123DT

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:

This is your after cleaning sample

SERVICE TECHNICIAN: Mike & Tommie

DATE: 8/9/19

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: 82319515

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

Sample Taken From: 108-01-123DT
Sample ID: 108-01-123DT
PO: 632519
WO: MUSC - University - Post

Sample Collection Date: 08/9/2019
Date Received: 08/23/2019
Date Released: 08/30/2019
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
Cetane Index	40 minimum	ASTM D976-01	44.9
Cloud Point	report °C	ASTM D2500-99	-9
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	243.89
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	57.22
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	6
Sulfur	15 ppm maximum	ASTM D5453-09	20
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	69

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: 07-03-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Building 108 #1 (Behind research Tank)

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 : 108-FT-22

Type : AST

Capacity : 2,000

Material: Dsl

Last Tank Service: 2018

FUEL SAMPLE TAKEN:

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

SERVICES PERFORMED:

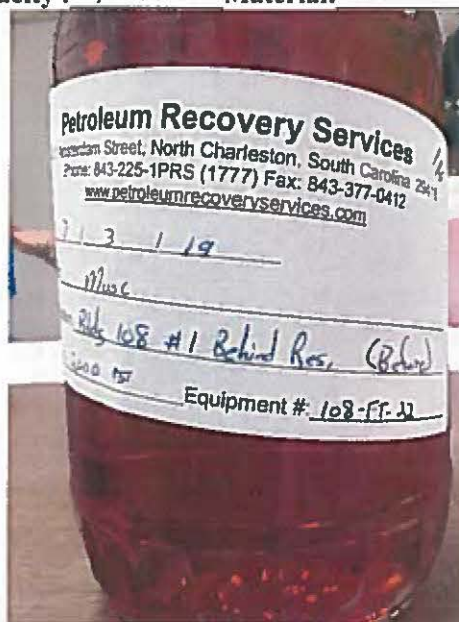
- ☐ Maintenance
☐ STI 001 Inspection
☐ Tank Cleaning
☐ Bottom Sweep
☒ Pre-clean Lab Analysis
☐ Post-clean Lab Analysis

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

SERVICE TECHNICIAN: Ron and Steven

DATE: 07-03-19

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: 71519508

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

Sample Taken From: 108-FT-22
Sample ID: 108-FT-22
PO: 632487
WO: MUSC-University - Pre

Sample Collection Date: 07/3/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: AST
Tank Capacity: 2,000 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	44.7
Cloud Point	report °C	ASTM D2500-99	-8
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	76.67
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	4
Sulfur	15 ppm maximum	ASTM D5453-09	76
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	66

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: 07-02-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Building 112

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 : _____ Type : AST Capacity : 500 Material: Dsl

Last Tank Service: 2018

FUEL SAMPLE TAKEN:

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

SERVICES PERFORMED:

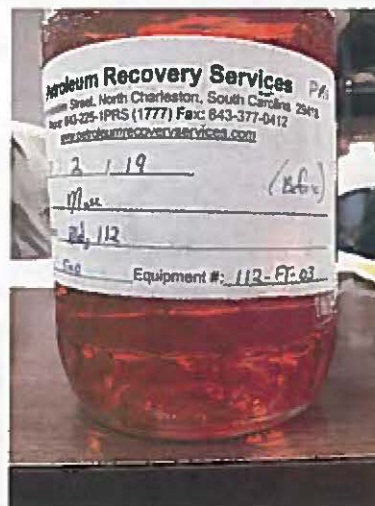
- ☐ Maintenance
☐ STI 001 Inspection
☐ Tank Cleaning
☐ Bottom Sweep
☒ Pre-clean Lab Analysis
☐ Post-clean Lab Analysis

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

SERVICE TECHNICIAN: Ron and Steven

DATE: 07-02-19

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: 71619519

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

Sample Taken From: 112-FT-03
Sample ID: 112-FT-03
PO: 632488
WO: MUSC-University - Pre

Sample Collection Date: 07/2/2019
Date Received: 07/16/2019
Date Released: 07/19/2019
Component Make:
Component Model: AST
Tank Capacity: 500 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
Type of Fuel: ULSD
Serial Number:

Test	Limits	Methods	Result
API Gravity by Hydrometer	report	ASTM D1298-99	35
Cetane Index	40 minimum	ASTM D976-01	41.2
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	67.78
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	2
Sulfur	15 ppm maximum	ASTM D5453-09	67
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	81

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: 8/15/19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: County Garage (Gen)

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

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0424

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

CELL: (843) 792-3523

Unit Id : 130-01-1DT

Type : AST

Capacity : 125

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

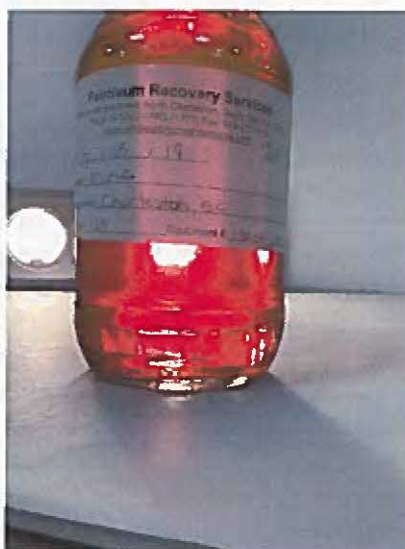
Fuel Treatment:

☒ 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: Photo shows after cleaning sample

SERVICE TECHNICIAN: Mike & Tommie

DATE: 8/15/19

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: 82319517

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

Sample Taken From: 130-01-1DT
Sample ID: 130-01-1DT
PO: 632519
WO: MUSC - University - Post

Sample Collection Date: 08/15/2019
Date Received: 08/23/2019
Date Released: 08/30/2019
Component Make:
Component Model: AST
Tank Capacity: 125 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	36
Cetane Index	40 minimum	ASTM D976-01	42.9
Cloud Point	report °C	ASTM D2500-99	-12
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	77.22
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	35
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	78

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: 7-1-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: County Garage (Fire Pump)

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 : 130-01-02dt

Type : AST

Capacity : 175

Material: Dsl

Last Tank Service: 2018

FUEL SAMPLE TAKEN:

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

SERVICES PERFORMED:

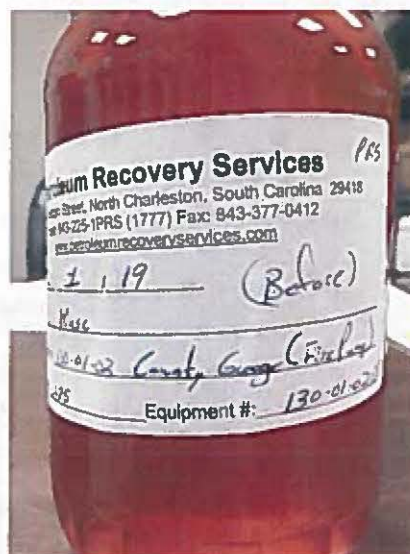
- ☐ Maintenance
☐ STI 001 Inspection
☐ Tank Cleaning
☐ Bottom Sweep
☒ Pre-clean Lab Analysis
☐ Post-clean Lab Analysis

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

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-1-19

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



Certificate of Analysis

Laboratory Number: 71519509

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

Sample Taken From: 130-01-02DT
Sample ID: 130-01-02DT
PO: 632487
WO: MUSC-University - Pre

Sample Collection Date: 07/11/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: AST
Tank Capacity: 175 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	-10
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	64.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	8.7
Sulfur	15 ppm maximum	ASTM D5453-09	39
Visual Appearance	Visual	ASTM D4176-04	Cloudy, Light Sediment, Few Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.01
Water by Karl Fischer	report in ppm	ASTM D6304-16	90

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: 7-2-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: 56 Courtney Dr. Fuel Tank #40 (PG1-Roof)

ADDRESS: 111 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0425

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

CELL: (843) 792-3524

Unit Id : 145-FT-40

Type : AST

Capacity : 250

Material: Dsl

Last Tank Service: 2018

FUEL SAMPLE TAKEN:

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

SERVICES PERFORMED:

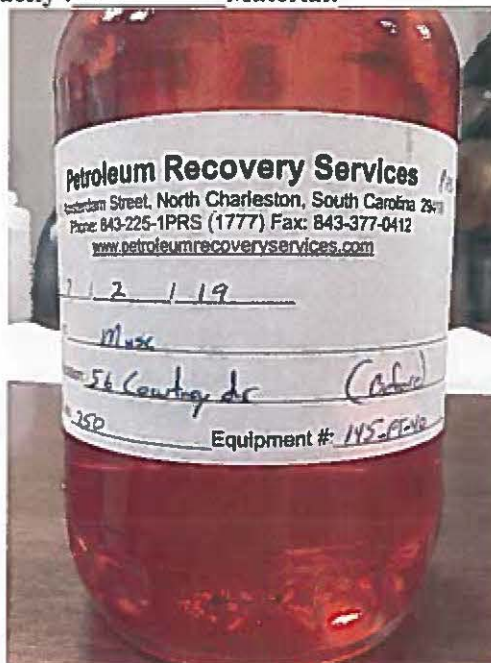
- ☐ Maintenance
☐ STI 001 Inspection
☐ Tank Cleaning
☐ Bottom Sweep
☒ Pre-clean Lab Analysis
☐ Post-clean Lab Analysis

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

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-2-19

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: 71519511

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

Sample Taken From: 145-FT-40
Sample ID: 145-FT-40
PO: 632487
WO: MUSC-University - Pre

Sample Collection Date: 07/2/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: AST
Tank Capacity: 250 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	47.8
Cloud Point	report °C	ASTM D2500-99	-14
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	248.33
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	14
Sulfur	15 ppm maximum	ASTM D5453-09	7
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	61

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: 7-22-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: 135 Cannon (Day Tank)

ADDRESS: 112 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0426

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

CELL: (843) 792-3525

Unit Id : 148-08-251DT

Type : SBT

Capacity : 200

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

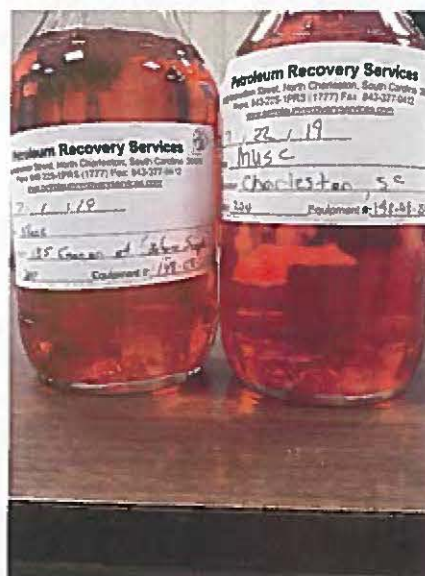
☐ Biocide Predator 6000

☐ 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: Mike and Tommie

DATE: 7-22-19

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: 80219533

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

Sample Taken From: 148-08-251DT
Sample ID: 148-08-251DT
PO: 632504
WO: MUSC - University - Post

Sample Collection Date: 07/22/2019
Date Received: 08/2/2019
Date Released: 08/7/2019
Component Make:
Component Model: SBT
Tank Capacity: 200 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	46.9
Cloud Point	report °C	ASTM D2500-99	-9
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	245.0
Distillation, 90%	282 - 338 °C	ASTM D86-08a	307.78
Flash Point	52 °C minimum	ASTM D93-10	74.44
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	20
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	60

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: 7-22-2019

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Building 163 (Helicopter Pad)

ADDRESS: 113 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0427

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

CELL: (843) 792-3526

Unit Id : 163H-01-1DT

Type : SBT

Capacity : 425

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.petroileumrecoveryservices.com



Certificate of Analysis

Laboratory Number: 80219534

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

Sample Taken From: 163H-01-1DT
Sample ID: 163H-01-1DT
PO: 632504
WO: MUSC - University - Post

Sample Collection Date: 07/22/2019
Date Received: 08/2/2019
Date Released: 08/7/2019
Component Make:
Component Model: SBT
Tank Capacity: 425 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	-11
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	308.33
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	2
Sulfur	15 ppm maximum	ASTM D5453-09	15
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	80

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: 7-3-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Bio-Engineering (334/339-FT-36)

ADDRESS: 114 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0428

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

CELL: (843) 792-3527

Unit Id : 334/339-FT-40

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:

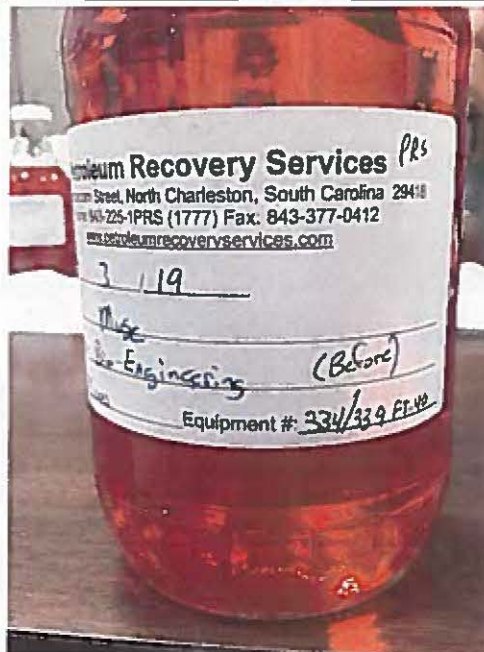
- | | | |
|--|------------------------------|---|
| <input checked="" type="checkbox"/> Good | <input type="checkbox"/> Bad | <input type="checkbox"/> N/A -Fill Cap |
| <input checked="" type="checkbox"/> Good | <input type="checkbox"/> Bad | <input type="checkbox"/> N/A - Vent |
| <input checked="" 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: Picture of the before cleaning sample

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-3-19

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



Certificate of Analysis

Laboratory Number: 71519512

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

Sample Taken From: 334/339-FT-40
Sample ID: 334/339-FT-40
PO: 632487
WO: MUSC-University - Pre

Sample Collection Date: 07/3/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: UST
Tank Capacity: 15,000 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	43.4
Cloud Point	report °C	ASTM D2500-99	-12
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	238.89
Distillation, 90%	282 - 338 °C	ASTM D86-08a	305.0
Flash Point	52 °C minimum	ASTM D93-10	73.33
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	4
Sulfur	15 ppm maximum	ASTM D5453-09	14
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: 7-3-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Building 334 (Drug Discovery Day Tank)

ADDRESS: 115 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0429

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

CELL: (843) 792-3528

Unit Id : 334/08-124DT

Type : AST

Capacity : 275

Material: Dsl

Last Tank Service: 2018

FUEL SAMPLE TAKEN:

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

SERVICES PERFORMED:

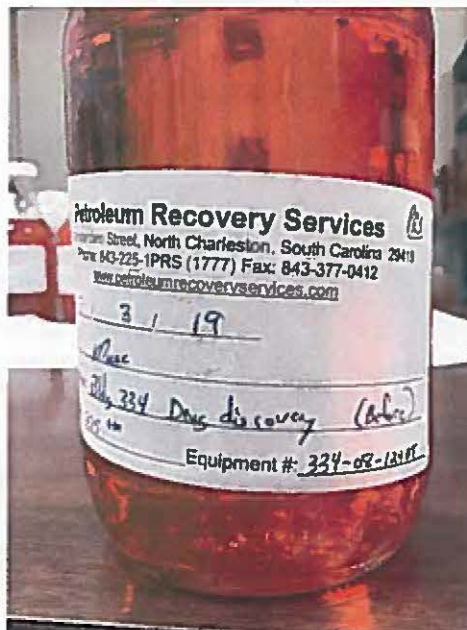
- ☐ Maintenance
☐ STI 001 Inspection
☐ Tank Cleaning
☐ Bottom Sweep
☒ Pre-clean Lab Analysis
☐ Post-clean Lab Analysis

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

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-3-19

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: 71519513

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

Sample Taken From: 334-08-124DT
Sample ID: 334-08-124DT
PO: 632487
WO: MUSC-University - Pre

Sample Collection Date: 07/3/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: AST
Tank Capacity: 275 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	44.1
Cloud Point	report °C	ASTM D2500-99	-12
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	241.11
Distillation, 90%	282 - 338 °C	ASTM D86-08a	306.67
Flash Point	52 °C minimum	ASTM D93-10	66.67
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	14
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	95

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: 7-3-19

CUSTOMER: MUSC

INFO-OTHER: University Tanks

FACILITY: Building 339 (Bio Gen Day Tank)

ADDRESS: 116 Jonathan Lucas St. MSC 190, Charleston, SC 29425

CONTACT: Rick Burt, Matthew Long

PHONE: 843-323-0430

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

CELL: (843) 792-3529

Unit Id : 339/08-106DT

Type : AST

Capacity : 100

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

SERVICE TECHNICIAN: Ron and Steven

DATE: 7-3-19

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: 71519514

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

Sample Taken From: 339-08-106DT
Sample ID: 339-08-106DT
PO: 632487
WO: MUSC-University - Pre

Sample Collection Date: 07/3/2019
Date Received: 07/15/2019
Date Released: 07/18/2019
Component Make:
Component Model: AST
Tank Capacity: 100 g
Quantity in Tank:
Test Package: Petroleum Recovery Pkg.
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	44.1
Cloud Point	report °C	ASTM D2500-99	-10
Copper Strip Corrosion	3 maximum	ASTM D130-04	1a
Distillation, 50%	report °C	ASTM D86-08a	241.11
Distillation, 90%	282 - 338 °C	ASTM D86-08a	306.67
Flash Point	52 °C minimum	ASTM D93-10	74.44
Microbial Growth	report	Micro/Culture Medium	Negative
Particulate Contamination	report in milligrams/liter	ASTM D6217-08	159.3
Sulfur	15 ppm maximum	ASTM D5453-09	17
Visual Appearance	Visual	ASTM D4176-04	Clear, High Sediment, Many Particles
Water and Sediment	0.05 maximum (% volume)	ASTM D2709	0.9
Water by Karl Fischer	report in ppm	ASTM D6304-16	160

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.

Water and Sediment exceeded acceptable limits. . Sediment can cause clogged filters and may lead to failed fuel injectors.

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: 8/15/19
CUSTOMER: MUSC INFO-OTHER: University Tanks
FACILITY: Building 500 (Roof Day Tank)
ADDRESS: 117 Jonathan Lucas St. MSC 190, Charleston, SC 29425
CONTACT: Rick Burt, Matthew Long PHONE: 843-323-0431
EMAIL: burtd@musc.edu, Longmat@musc.edu CELL: (843) 792-3530
Unit Id : 500-01-CDT Type : AST Capacity : 75 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: Photo shows after cleaning sample

SERVICE TECHNICIAN: Mike & Tommie

DATE: 8/15/19

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



Certificate of Analysis

Laboratory Number: 82319519

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

Sample Taken From: 500-01-CDT
Sample ID: 500-01-CDT
PO: 632519
WO: MUSC - University - Post

Sample Collection Date: 08/15/2019
Date Received: 08/23/2019
Date Released: 08/30/2019
Component Make:
Component Model: AST
Tank Capacity: 75 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	36
Cetane Index	40 minimum	ASTM D976-01	42.7
Cloud Point	report °C	ASTM D2500-99	-16
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	307.22
Flash Point	52 °C minimum	ASTM D93-10	73.33
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	82
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	68

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.

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