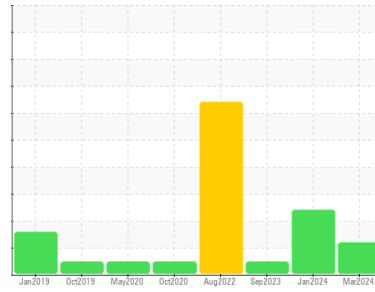




# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id  
**FORD F550 XL CT 21 (S/N 1FD0X5HTGHEE81366)**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL ROTELLA T 15W40 (13 QTS)**

## DIAGNOSIS

### Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>WC0889908</b>	WC0791741	WC0791718
Sample Date	Client Info	<b>29 Mar 2024</b>	15 Jan 2024	04 Sep 2023
Machine Age	mls	<b>0</b>	76821	72271
Oil Age	mls	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	Changed	Changed
Sample Status		<b>ABNORMAL</b>	SEVERE	NORMAL

## CONTAMINATION

method	limit/base	current	history1	history2	
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>100	<b>31</b>	38	14
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>25	<b>4</b>	4	2
Lead	ppm	ASTM D5185m	>40	<b>0</b>	1	0
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	2	<1
Tin	ppm	ASTM D5185m	>15	<b>0</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	316	<b>61</b>	37	2
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>52</b>	40	6
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	24	<b>360</b>	277	30
Calcium	ppm	ASTM D5185m	2292	<b>1894</b>	1877	2259
Phosphorus	ppm	ASTM D5185m	1064	<b>1000</b>	928	904
Zinc	ppm	ASTM D5185m	1160	<b>1203</b>	1063	1050
Sulfur	ppm	ASTM D5185m	4996	<b>3787</b>	2885	4169

## CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>25	<b>13</b>	19	13
Sodium	ppm	ASTM D5185m		<b>2</b>	4	2
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	4	0
Fuel	%	ASTM D3524	>5	<b>▲ 7.2</b>	▲ 9.1	<1.0

## INFRA-RED

method	limit/base	current	history1	history2		
Soot %	%	*ASTM D7844	>3	<b>0.5</b>	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.9</b>	9.0	6.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.4</b>	19.4	15.8

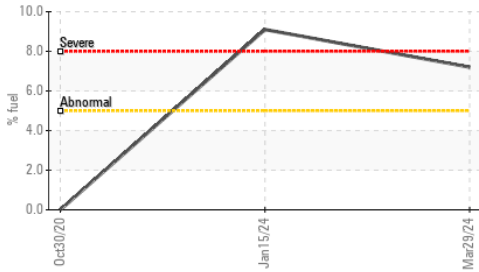
## FLUID DEGRADATION

method	limit/base	current	history1	history2		
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.3</b>	14.7	9.3
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>7.9</b>	7.5	6.9

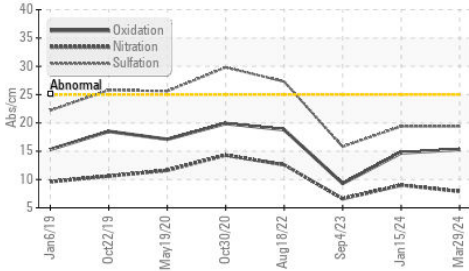


# OIL ANALYSIS REPORT

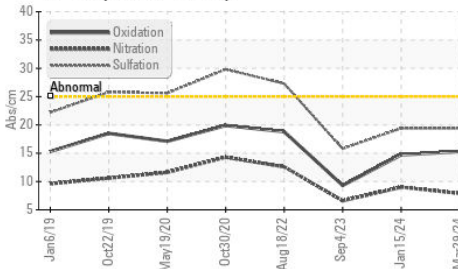
### ▲ Fuel Dilution



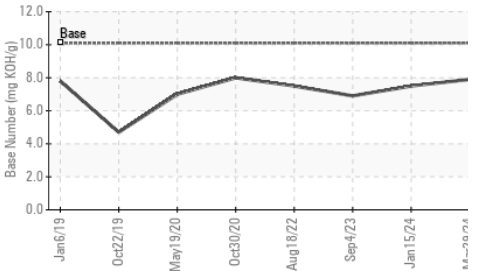
### ● FT-IR (Direct Trend)



### ● FT-IR (Direct Trend)



### Base Number

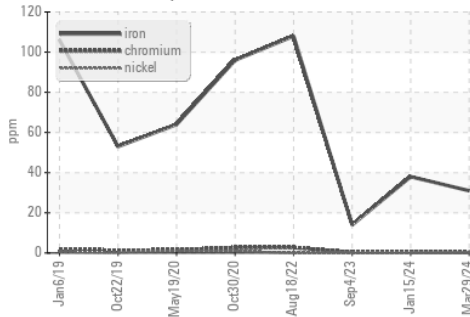


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

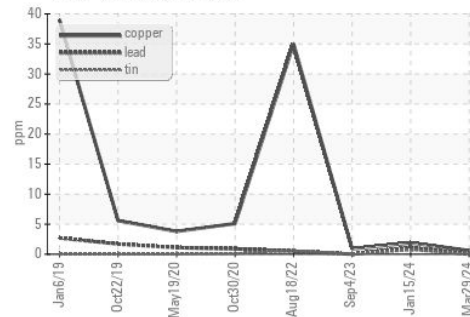
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.7 ▲ 12.3	▲ 11.9	13.0

### GRAPHS

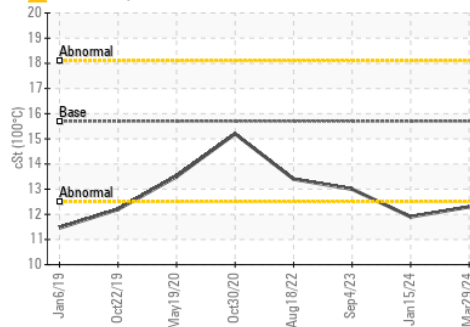
#### Ferrous Alloys



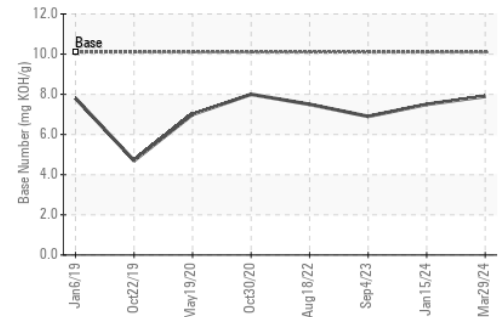
#### Non-ferrous Metals



### ▲ Viscosity @ 100°C



### Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0889908      **Received** : 08 Apr 2024  
**Lab Number** : 06141971      **Tested** : 10 Apr 2024  
**Unique Number** : 10966779      **Diagnosed** : 10 Apr 2024 - Wes Davis  
**Test Package** : CONST ( Additional Tests: PercentFuel, TBN )

**CUSHNIE CONSTRUCTION CO INC**  
 4702 LAE RD  
 KALAHEO, HI  
 US 96741  
 Contact: RALPH CUSHNIE  
 ralph@cushniecci.com  
 T: (808)332-9000  
 F: (808)332-9400

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)