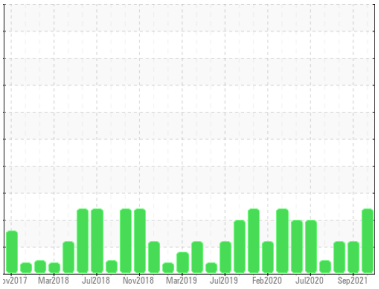
PROBLEM SUMMARY

Sample Rating Trend

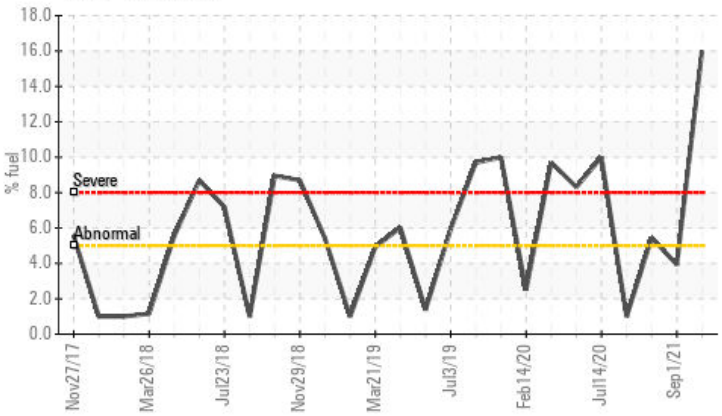


FUEL

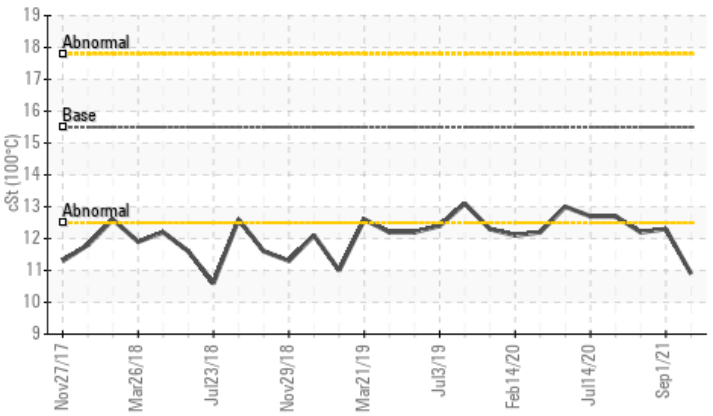
Area
GM Renton Dump Truck Shop
Machine Id
[GM Renton Dump Truck Shop] 16-754
Component
Diesel Engine
Fluid
CASTROL CRB Multi 15W-40 CK-4 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Fuel Dilution



▲ Viscosity @ 100°C



RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	MARGINAL	ABNORMAL
Fuel	%	ASTM D3524	>5	▲ **16.0**	▲ 3.93	▲ 5.44
Visc @ 100°C	cSt	ASTM D445	15.5	▲ **10.9**	▲ 12.3	▲ 12.2

Customer Id: GARSEA
Sample No.: PE0003132
Lab Number: 06220567
Test Package: CONST

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

FUEL

01 Sep 2021 Diag: Wes Davis
No corrective action is recommended at this time. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.Metal levels are typical for a components first oil change. Light fuel dilution occurring. No other contaminants were detected in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The condition of the oil is suitable for further service.

view report

FUEL

12 Jul 2021 Diag: Wes Davis
The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The oil is no longer serviceable due to the presence of contaminants.

view report

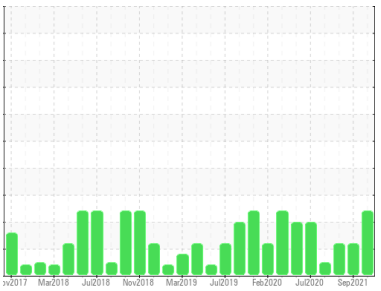
NORMAL

09 Dec 2020 Diag: Wes Davis
Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Area
GM Renton Dump Truck Shop
Machine Id
[GM Renton Dump Truck Shop] 16-754
Component
Diesel Engine
Fluid
CASTROL CRB Multi 15W-40 CK-4 (--- GAL)

DIAGNOSIS

▲ Recommendation
We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

▲ Contamination
There is a high amount of fuel present in the oil.

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PE0003132**	PE12290251	PE12290270
Sample Date		Client Info		**11 Jun 2024**	01 Sep 2021	12 Jul 2021
Machine Age	hrs	Client Info		**12305**	496	10019
Oil Age	hrs	Client Info		**312**	496	473
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	MARGINAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**45**	24	46
Chromium	ppm	ASTM D5185m	>20	**<1**	1	1
Nickel	ppm	ASTM D5185m	>4	**<1**	0	1
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	<1	<1
Aluminum	ppm	ASTM D5185m	>20	**5**	2	6
Lead	ppm	ASTM D5185m	>40	**2**	2	3
Copper	ppm	ASTM D5185m	>330	**2**	1	1
Tin	ppm	ASTM D5185m	>15	**<1**	0	0
Antimony	ppm	ASTM D5185m		**---**	1	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**17**	7	4
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**8**	13	11
Manganese	ppm	ASTM D5185m		**<1**	---	---
Magnesium	ppm	ASTM D5185m		**89**	213	158
Calcium	ppm	ASTM D5185m		**1845**	2295	2049
Phosphorus	ppm	ASTM D5185m		**747**	992	877
Zinc	ppm	ASTM D5185m		**911**	1171	1054
Sulfur	ppm	ASTM D5185m		**3412**	---	---

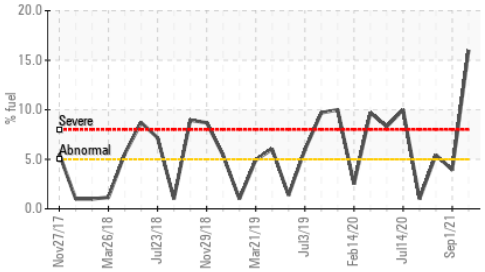
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	4	5
Sodium	ppm	ASTM D5185m		**2**	7	0
Potassium	ppm	ASTM D5185m	>20	**5**	2	2
Fuel	%	ASTM D3524	>5	▲ **16.0**	▲ 3.93	▲ 5.44

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.5**	0.2	1.0
Nitration	Abs/cm	*ASTM D7624	>20	**11.2**	11	14
Sulfation	Abs/.1mm	*ASTM D7415	>30	**22.1**	---	---

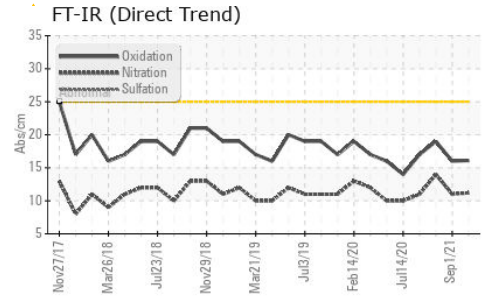
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.1**	16	19
Base Number (BN)	mg KOH/g	ASTM D2896	10	**6.9**	5.22	4.82

OIL ANALYSIS REPORT

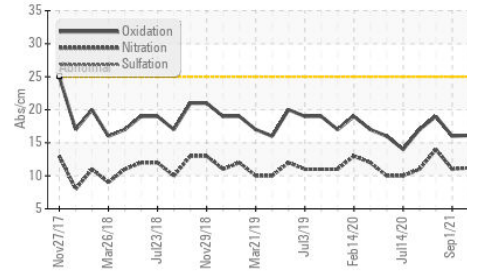
▲ Fuel Dilution



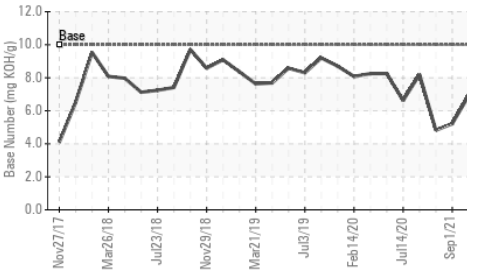
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Base Number

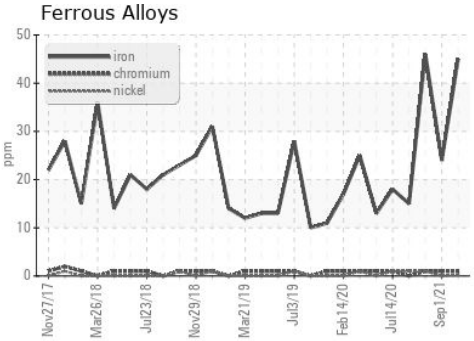


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar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

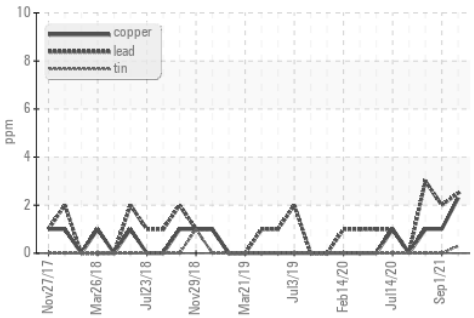
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.5	▲ **10.9**	▲ 12.3	▲ 12.2

GRAPHS

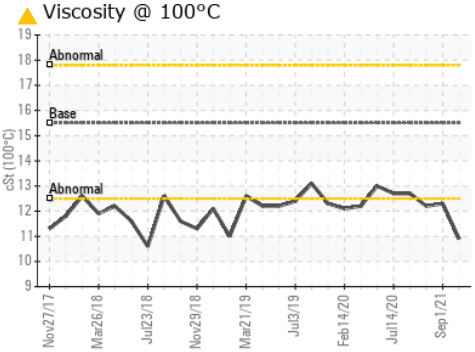
Ferrous Alloys



Non-ferrous Metals



▲ Viscosity @ 100°C



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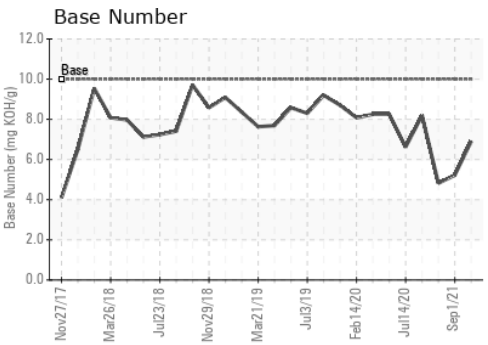

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0003132
Lab Number : 06220567
Unique Number : 11098764
Test Package : CONST (Additional Tests: FT-IR, FuelDilution, ICP, KV100, PercentFuel, SCREEN, TBN)

Received : 25 Jun 2024
Tested : 28 Jun 2024
Diagnosed : 28 Jun 2024 - Jonathan Hester

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)

Gary Merlino Construction - Off Road Shop
9125 10TH AVE SOUTH
SEATTLE, WA
US 98108
Contact: Zack
oilsamples@gmccinc.com
T:
F:

Report Id: GARSEA [WUSCAR] 06220567 (Generated: 06/29/2024 08:29:33) Rev: 1

Submitted By: Dump Truck Shop - Zack