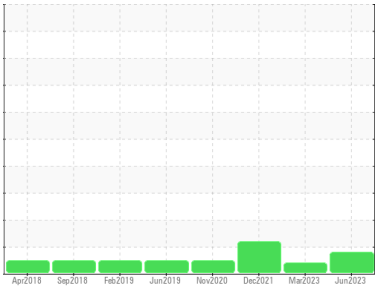
PROBLEM SUMMARY

Sample Rating Trend

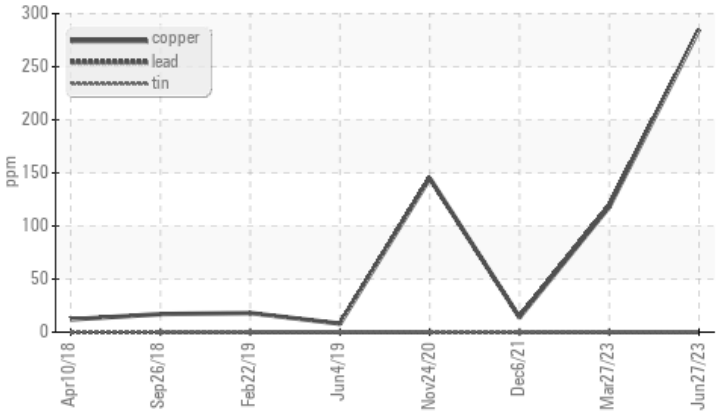


WEAR

Area
GM Seattle Off Raod Shop
Machine Id
[GM Seattle Off Raod Shop] 24-745
Component
Diesel Engine
Fluid
SHELL 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals



RECOMMENDATION

No corrective action is recommended at this time.
Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				**MARGINAL**	ATTENTION	MARGINAL
Copper	ppm	ASTM D5185m	>330	▲ **285**	118	14

Customer Id: GARSEA
Sample No.: PE0001396
Lab Number: 05903590
Test Package: CONST

To manage this report scan the QR code

To discuss the diagnosis or test data:
Doug Bogart +1 (800)237-1369 x4016
dougb@wearcheckusa.com

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

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

27 Mar 2023 Diag: Don Baldridge

VISCOSITY

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. Fuel content negligible. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

view report

06 Dec 2021 Diag: Wes Davis

DEGRADATION

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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

24 Nov 2020 Diag: Wes Davis

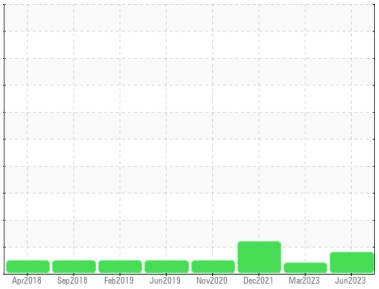
NORMAL

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



WEAR

Area
GM Seattle Off Raod Shop
Machine Id
[GM Seattle Off Raod Shop] 24-745
Component
Diesel Engine
Fluid
SHELL 15W40 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

Contamination

No evidence of excessive fuel present in the oil. There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PE0001396**	PE0001779	PE12291026
Sample Date		Client Info		**27 Jun 2023**	27 Mar 2023	06 Dec 2021
Machine Age	hrs	Client Info		**2431**	2225	1640
Oil Age	hrs	Client Info		**2431**	585	455
Oil Changed		Client Info		**Not Changd**	Changed	Changed
Sample Status				**MARGINAL**	ATTENTION	MARGINAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	0.8	<1.0
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**6**	5	5
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	1
Nickel	ppm	ASTM D5185m	>4	**0**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>20	**7**	3	1
Lead	ppm	ASTM D5185m	>40	**0**	0	0
Copper	ppm	ASTM D5185m	>330	▲ **285**	118	14
Tin	ppm	ASTM D5185m	>15	**0**	<1	0
Antimony	ppm	ASTM D5185m		**---**	---	1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**59**	73	39
Barium	ppm	ASTM D5185m		**0**	0	1
Molybdenum	ppm	ASTM D5185m		**59**	55	58
Manganese	ppm	ASTM D5185m		**<1**	<1	---
Magnesium	ppm	ASTM D5185m		**942**	827	991
Calcium	ppm	ASTM D5185m		**1403**	1242	962
Phosphorus	ppm	ASTM D5185m		**1081**	990	997
Zinc	ppm	ASTM D5185m		**1366**	1188	1190
Sulfur	ppm	ASTM D5185m		**4358**	3164	---

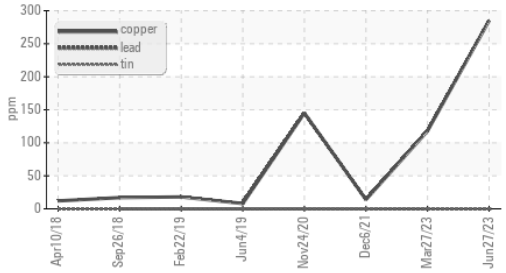
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	4	5
Sodium	ppm	ASTM D5185m	>150	**<1**	0	2
Potassium	ppm	ASTM D5185m	>20	**3**	4	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	**9.1**	7.3	8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.5**	17.7	---

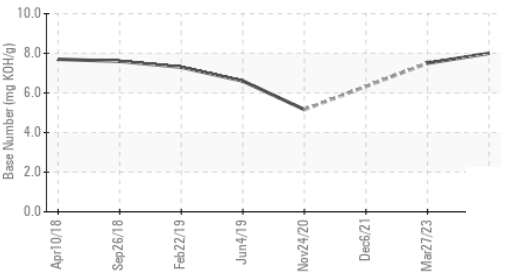
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.7**	14.5	12
Base Number (BN)	mg KOH/g	ASTM D2896		**8.0**	7.5	---

OIL ANALYSIS REPORT

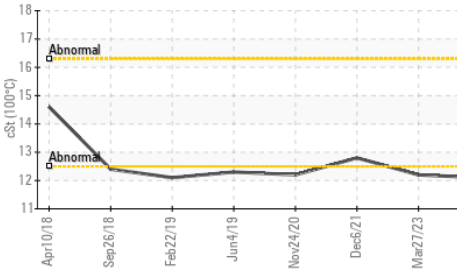
Non-ferrous Metals



Base Number



Viscosity @ 100°C

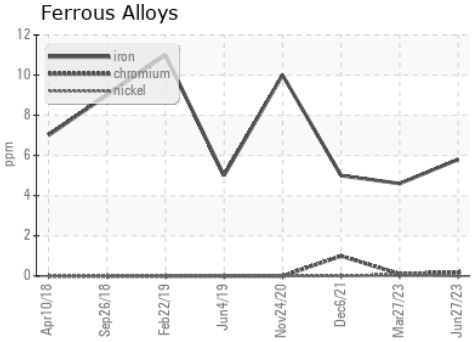


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	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	---

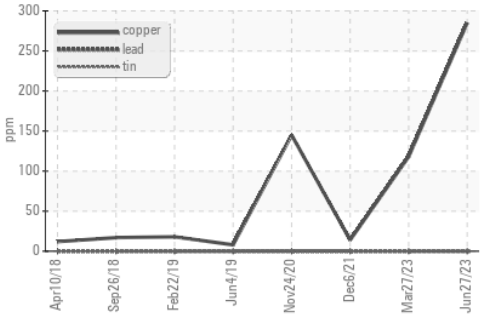
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**12.1**	▲ 12.2	12.8

GRAPHS

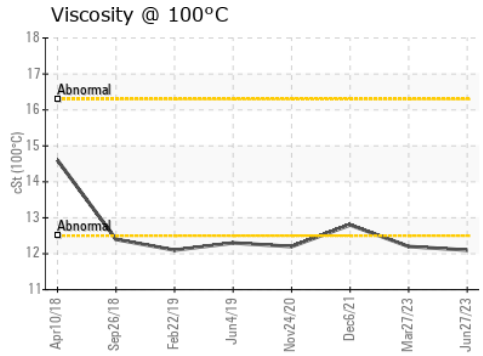
Ferrous Alloys



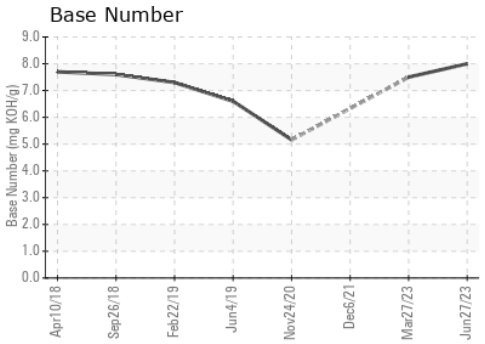
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0001396 **Received** : 20 Jul 2023
Lab Number : 05903590 **Diagnosed** : 24 Jul 2023
Unique Number : 10564946 **Diagnostician** : Doug Bogart
Test Package : CONST (Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN)

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: Jesse Patterson
oilsamples@gmccinc.com
T: 1(866)292-1303
F:

Report Id: GARSEA [WUSCAR] 05903590 (Generated: 07/24/2023 21:40:28) Rev: 1

Submitted By: Stoneway Concrete - Seattle - Jesse Patterson