



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

GM Seattle Off Road Shop

Machine Id

[GM Seattle Off Road Shop] 24-151

Component

Diesel Engine

Fluid

CASTROL CRB Multi 15W-40 CK-4 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PE0003082	PE0001036	PE12230633
Sample Date		Client Info		22 Apr 2024	13 Feb 2023	24 May 2022
Machine Age	hrs	Client Info		1718	1013	689
Oil Age	hrs	Client Info		705	422	267
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Changed	Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	---
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	37	39	15
Chromium	ppm	ASTM D5185m	>20	<1	1	1
Nickel	ppm	ASTM D5185m	>4	0	0	1
Titanium	ppm	ASTM D5185m		0	0	1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	4	4	2
Lead	ppm	ASTM D5185m	>40	0	<1	1
Copper	ppm	ASTM D5185m	>330	2	4	3
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	1
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

There is no indication of any contamination in the oil.

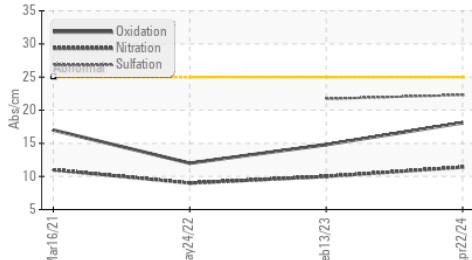
Silicon	ppm	ASTM D5185m	>25	7	9	7
Potassium	ppm	ASTM D5185m	>20	2	20	17
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.7	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	11.4	10.0	9
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.3	21.7	---
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	---

FLUID CONDITION

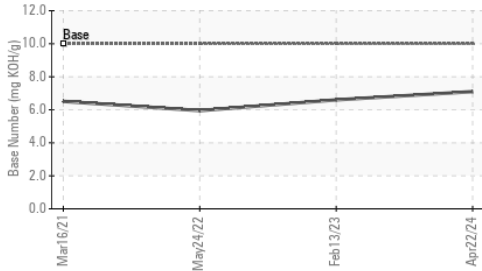
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		1	2	1
Boron	ppm	ASTM D5185m		25	8	15
Barium	ppm	ASTM D5185m		0	0	1
Molybdenum	ppm	ASTM D5185m		38	17	15
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m		595	69	65
Calcium	ppm	ASTM D5185m		2008	2404	2128
Phosphorus	ppm	ASTM D5185m		1063	874	841
Zinc	ppm	ASTM D5185m		1359	1109	1001
Sulfur	ppm	ASTM D5185m		4036	3600	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.1	14.8	12
Base Number (BN)	mg KOH/g	ASTM D2896	10	7.1	6.6	5.95
Visc @ 100°C	cSt	ASTM D445	15.5	14.7	14.4	14.3

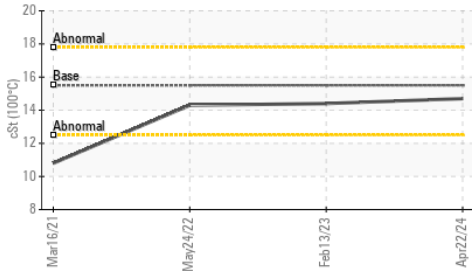
FT-IR (Direct Trend)



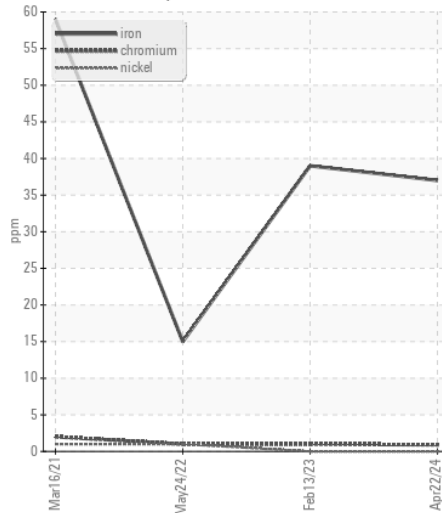
Base Number



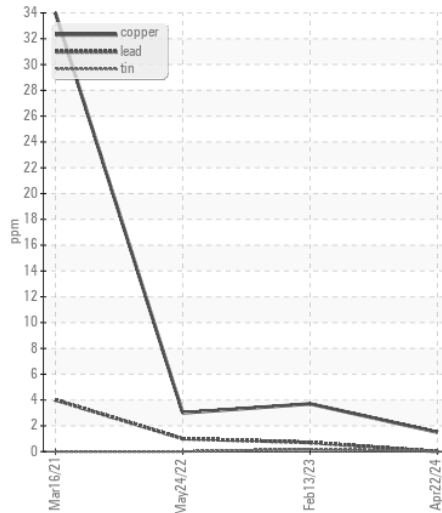
Viscosity @ 100°C



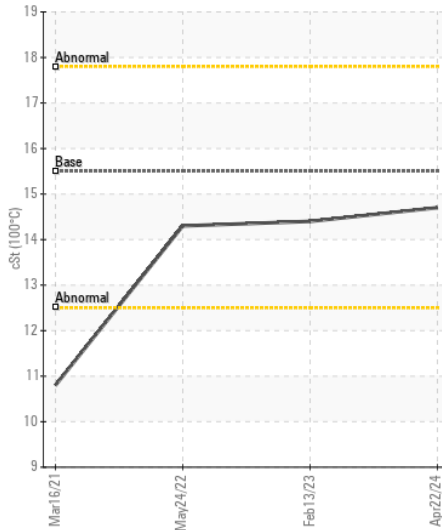
Ferrous Alloys



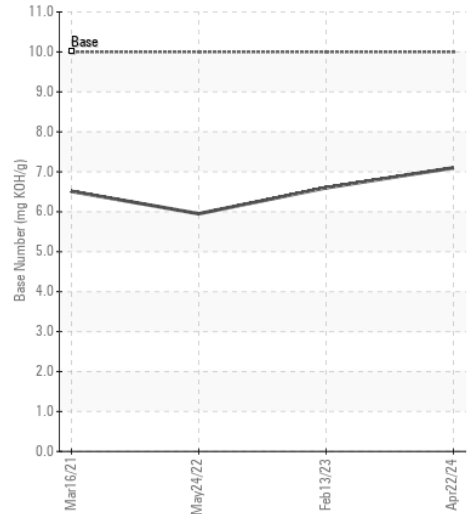
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0003082
Lab Number : 06211070
Unique Number : 11083934
Test Package : CONST (Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN)

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

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)

T: 1(866)292-1303

F: