CONST

PetroCard™ MORE THAN JUST FUEL.

OIL ANALYSIS REPORT

WEAR	MARGINAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Area
GM Seattle Off Raod Shop
Machine Id
[GM Seattle Off Raod Shop] 14-684
Component
Diesel Engine
Fluid
SHELL 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

An increase in the lead level is noted. All other component wear rates are normal.

CONTAMINATION

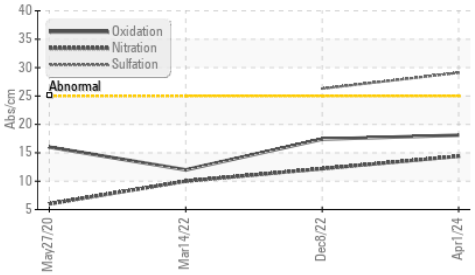
There is an abnormal amount of solids and carbon present in the oil.

FLUID CONDITION

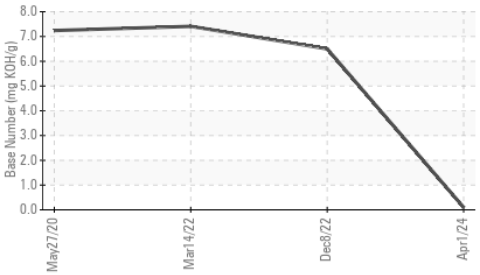
The oil viscosity is higher than normal. The BN level is low. The oil is no longer serviceable.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PE0003025	PE0000561	PE12290968
Sample Date		Client Info		01 Apr 2024	08 Dec 2022	14 Mar 2022
Machine Age	hrs	Client Info		5895	5024	4170
Oil Age	hrs	Client Info		871	854	344
Filter Age	hrs	Client Info		0	854	---
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	ABNORMAL	MARGINAL
Iron	ppm	ASTM D5185m	>100	100	92	69
Chromium	ppm	ASTM D5185m	>20	2	1	1
Nickel	ppm	ASTM D5185m	>4	2	<1	1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	4	1	2
Lead	ppm	ASTM D5185m	>40	▲ 34	14	2
Copper	ppm	ASTM D5185m	>330	7	24	▲ 55
Tin	ppm	ASTM D5185m	>15	2	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---
Silicon	ppm	ASTM D5185m	>25	6	4	2
Potassium	ppm	ASTM D5185m	>20	3	2	1
Fuel	%	ASTM D3524	>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	▲ 4.5	▲ 3.7	0.6
Nitration	Abs/cm	*ASTM D7624	>20	14.4	12.2	10
Sulfation	Abs/.1mm	*ASTM D7415	>30	29.1	26.3	---
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	---
Sodium	ppm	ASTM D5185m	>150	<1	<1	3
Boron	ppm	ASTM D5185m		29	32	17
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		57	46	18
Manganese	ppm	ASTM D5185m		1	<1	---
Magnesium	ppm	ASTM D5185m		625	581	117
Calcium	ppm	ASTM D5185m		1665	1773	2564
Phosphorus	ppm	ASTM D5185m		1108	952	968
Zinc	ppm	ASTM D5185m		1297	1201	1161
Sulfur	ppm	ASTM D5185m		3372	2377	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.1	17.4	12
Base Number (BN)	mg KOH/g	ASTM D2896		▲ 0.1	6.5	7.41
Visc @ 100°C	cSt	ASTM D445		▲ 18.3	15.0	14.2

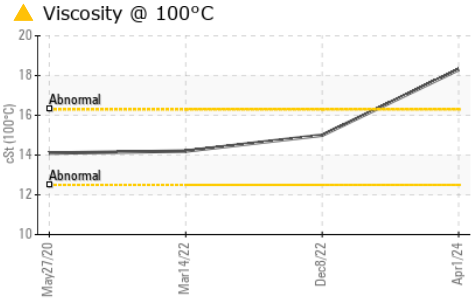
FT-IR (Direct Trend)



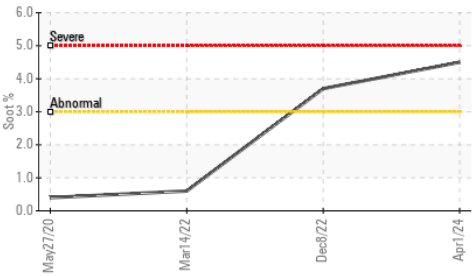
Base Number



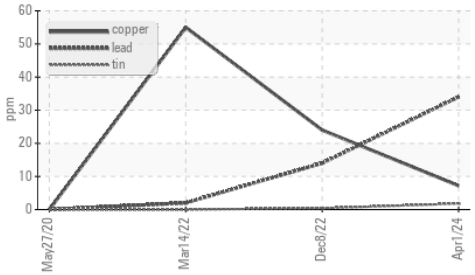
Viscosity @ 100°C



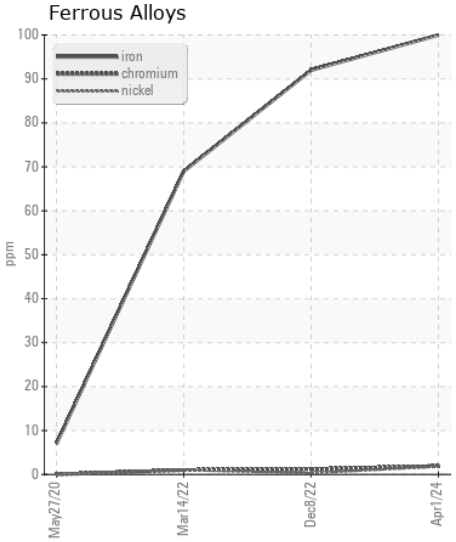
Soot %



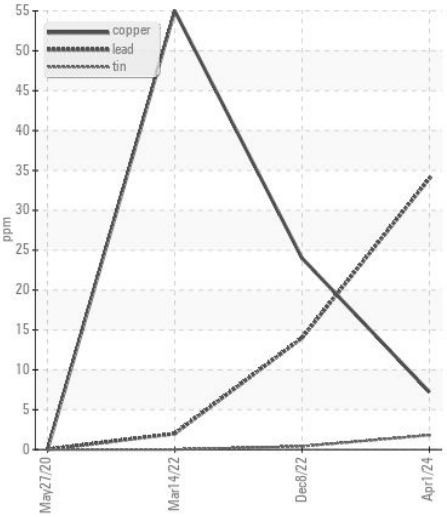
Non-ferrous Metals



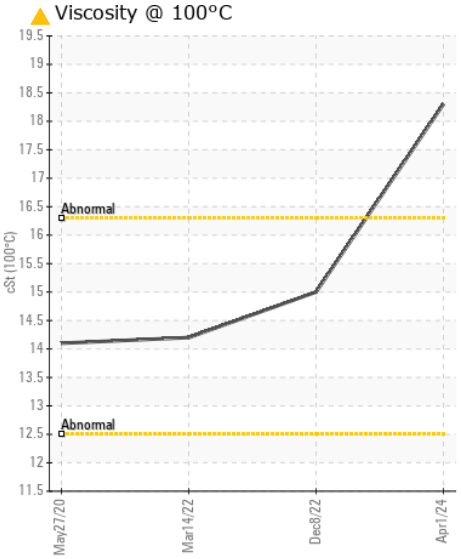
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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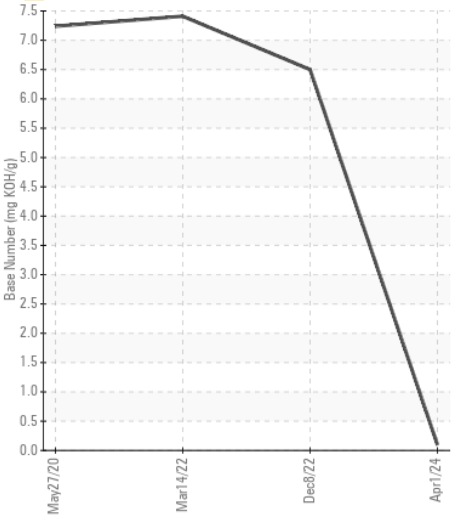

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0003025
Lab Number : 06156719
Unique Number : 10992142
Test Package : CONST (Additional Tests: FT-IR, FuelDilution, ICP, KV100, SCREEN, TBN)

Received : 22 Apr 2024
Tested : 24 Apr 2024
Diagnosed : 24 Apr 2024 - Angela Borella

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)

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