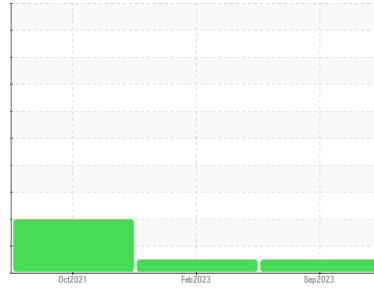




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
GM Seattle Off Road Shop
 Machine Id
[GM Seattle Off Road Shop] 24-846
 Component
Diesel Engine
 Fluid
CASTROL CRB Multi 15W-40 CK-4 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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 suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PE0002351	PE0001066	PE12291122
Sample Date	Client Info		14 Sep 2023	20 Feb 2023	20 Oct 2021
Machine Age	hrs	Client Info	2809	2426	2007
Oil Age	hrs	Client Info	383	419	411
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			NORMAL	NORMAL	MARGINAL

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	17	35	37
Chromium	ppm	ASTM D5185m >20	0	<1	1
Nickel	ppm	ASTM D5185m >4	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >3	0	0	<1
Aluminum	ppm	ASTM D5185m >20	<1	1	3
Lead	ppm	ASTM D5185m >40	<1	0	0
Copper	ppm	ASTM D5185m >330	4	6	▲ 29
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	44	50	15
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	37	45	20
Manganese	ppm	ASTM D5185m	0	1	---
Magnesium	ppm	ASTM D5185m	600	684	139
Calcium	ppm	ASTM D5185m	1741	1536	2599
Phosphorus	ppm	ASTM D5185m	1040	944	1077
Zinc	ppm	ASTM D5185m	1282	1212	1289
Sulfur	ppm	ASTM D5185m	4545	3727	---

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	4	5	8
Sodium	ppm	ASTM D5185m	3	<1	5
Potassium	ppm	ASTM D5185m >20	2	2	3

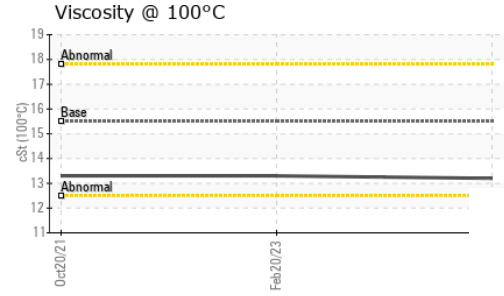
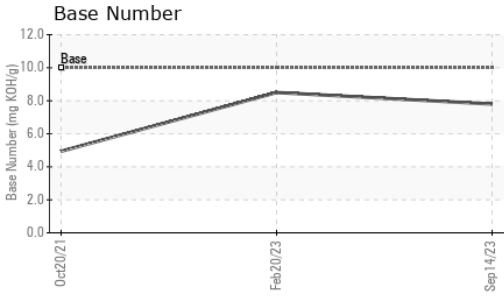
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.2	0.3	0.2
Nitration	Abs/cm	*ASTM D7624 >20	7.9	8.7	11
Sulfation	Abs/.1mm	*ASTM D7415 >30	18.0	18.9	---

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	13.3	14.1	17
Base Number (BN)	mg KOH/g	ASTM D2896 10	7.8	8.5	▲ 4.94

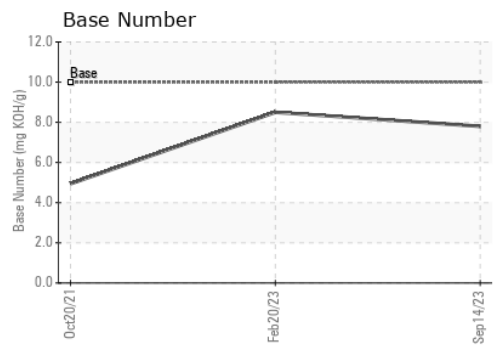
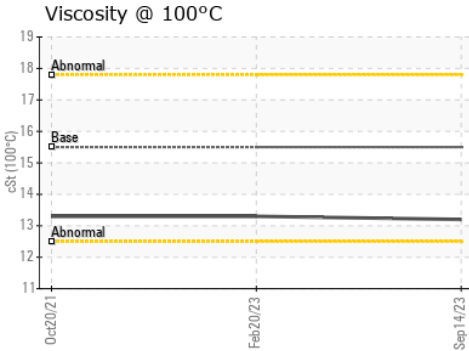
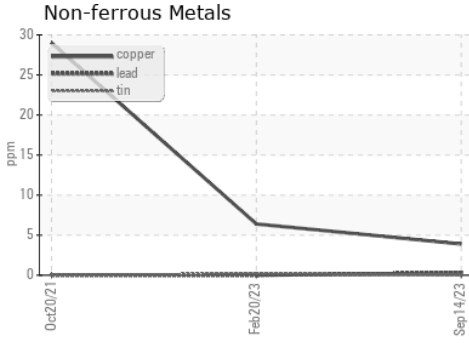
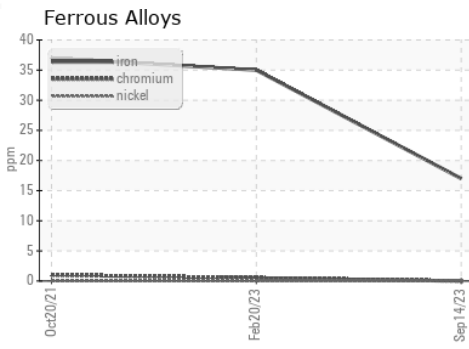
OIL ANALYSIS REPORT



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	13.2	13.3	13.3

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0002351 **Received** : 25 Sep 2023
Lab Number : **05960479** **Diagnosed** : 27 Sep 2023
Unique Number : 10661692 **Diagnostician** : Don Baldrige
Test Package : CONST (Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN)

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 US 98108
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 F:

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)