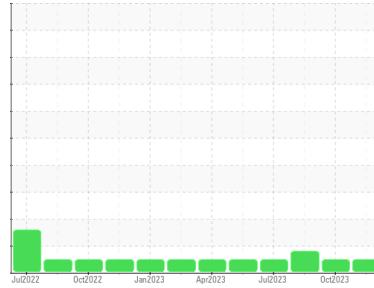




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
MACHINE SHOP
 Machine Id
L-0510-0000

Component
Diesel Engine
 Fluid
ROYAL PURPLE 15W40 CI-4 (HD) (--- 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		WC0864197	WC0864207	WC0821647
Sample Date	Client Info		05 Dec 2023	08 Oct 2023	26 Aug 2023
Machine Age	hrs	Client Info	7406	5582	5731
Oil Age	hrs	Client Info	7406	5582	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	NORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	<1.0
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	30	37	▲ 101
Chromium	ppm	ASTM D5185m >20	<1	<1	1
Nickel	ppm	ASTM D5185m >4	1	<1	<1
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >20	2	11	4
Lead	ppm	ASTM D5185m >40	1	0	0
Copper	ppm	ASTM D5185m >330	4	7	21
Tin	ppm	ASTM D5185m >15	<1	0	0
Vanadium	ppm	ASTM D5185m	<1	<1	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<1	<1	1
Barium	ppm	ASTM D5185m	0	2	0
Molybdenum	ppm	ASTM D5185m 120	81	59	67
Manganese	ppm	ASTM D5185m	0	<1	<1
Magnesium	ppm	ASTM D5185m	19	16	45
Calcium	ppm	ASTM D5185m 3000	3295	3141	3402
Phosphorus	ppm	ASTM D5185m 1150	1073	1087	1119
Zinc	ppm	ASTM D5185m 1250	1365	1330	1350
Sulfur	ppm	ASTM D5185m 16000	15320	17137	15690

CONTAMINANTS

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

INFRA-RED

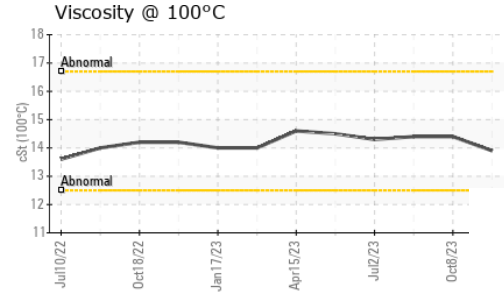
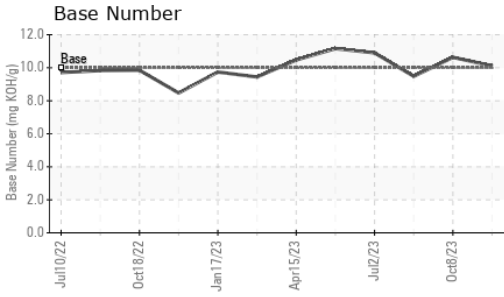
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.7	0.9	1.4
Nitration	Abs/cm	*ASTM D7624 >20	7.9	8.5	10.3
Sulfation	Abs/.1mm	*ASTM D7415 >30	27.6	28.6	31.4

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	18.9	18.9	21.0
Base Number (BN)	mg KOH/g	ASTM D2896 10	10.11	10.63	9.48



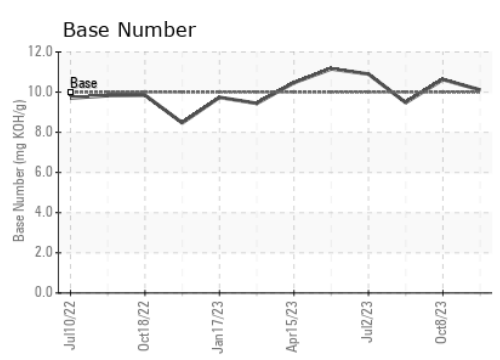
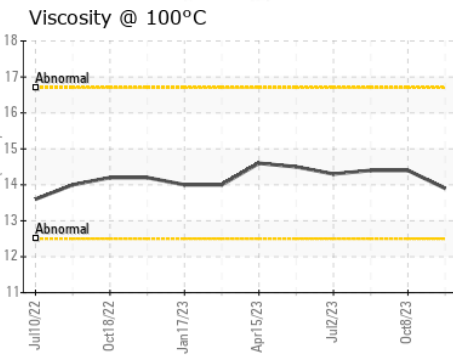
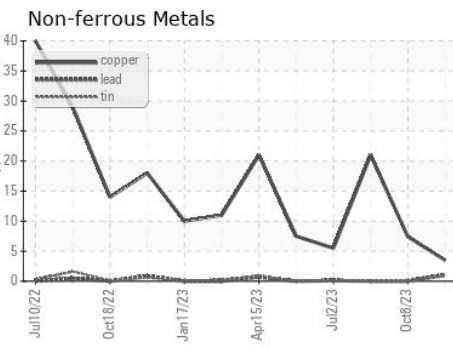
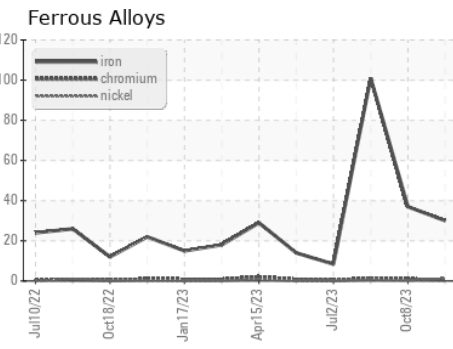
OIL ANALYSIS REPORT



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	13.9	14.4	14.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0864197 **Received** : 06 Dec 2023
Lab Number : **06026676** **Diagnosed** : 07 Dec 2023
Unique Number : 10776467 **Diagnostician** : Sean Felton
Test Package : IND 2

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 MONROE, NC
 US 28110
 Contact: mark eilerman
 mark.eilerman@atimaterials.com
 T: (704)292-4051
 F: (704)282-0665

Certificate L2367
 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)