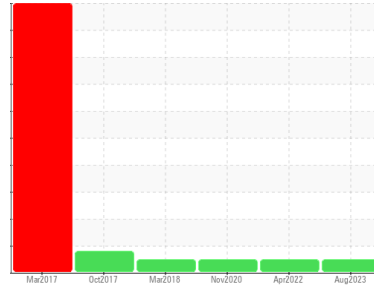


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
JOHN DEERE 600-163
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (5 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	PCA0089596	PCA0057423	PCA0021666
Sample Date	Client Info	07 Aug 2023	05 Apr 2022	17 Nov 2020
Machine Age	hrs	3527	3000	2577
Oil Age	hrs	527	500	500
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		NORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >2.1	<1.0	<1.0	<1.0
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >51	31	17	25
Chromium	ppm ASTM D5185m >11	<1	<1	<1
Nickel	ppm ASTM D5185m >5	<1	<1	<1
Titanium	ppm ASTM D5185m	0	0	0
Silver	ppm ASTM D5185m >3	0	0	<1
Aluminum	ppm ASTM D5185m >31	3	2	1
Lead	ppm ASTM D5185m >26	0	<1	<1
Copper	ppm ASTM D5185m >26	5	6	5
Tin	ppm ASTM D5185m >4	<1	<1	<1
Antimony	ppm ASTM D5185m	---	---	0
Vanadium	ppm ASTM D5185m	0	0	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	1	6	7
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	59	46	61
Manganese	ppm ASTM D5185m 0	<1	<1	<1
Magnesium	ppm ASTM D5185m 1010	895	786	929
Calcium	ppm ASTM D5185m 1070	1117	887	1092
Phosphorus	ppm ASTM D5185m 1150	1026	830	1031
Zinc	ppm ASTM D5185m 1270	1201	1016	1259
Sulfur	ppm ASTM D5185m 2060	3011	2291	2693
Lithium	ppm ASTM D5185m	---	---	---

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >22	3	2	2
Sodium	ppm ASTM D5185m >31	<1	2	3
Potassium	ppm ASTM D5185m >20	1	<1	<1

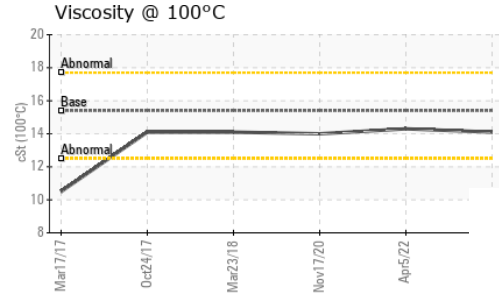
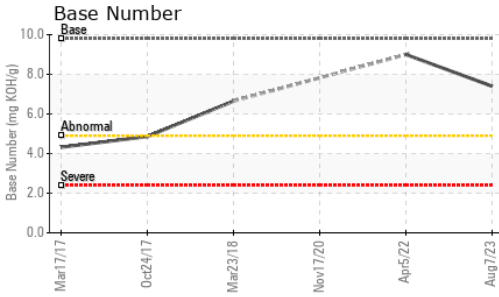
INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.6	0.5	0.6
Nitration	Abs/cm *ASTM D7624 >20	9.1	9.8	10.1
Sulfation	Abs/.1mm *ASTM D7415 >30	18.5	19.6	19.7

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	14.8	16.1	16.1
Base Number (BN)	mg KOH/g ASTM D2896 9.8	7.4	9.0	---

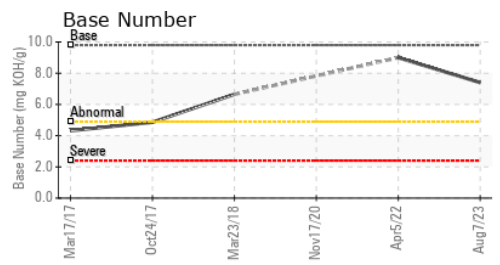
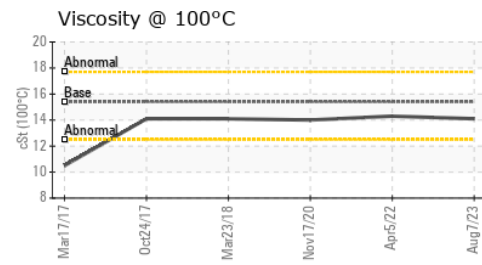
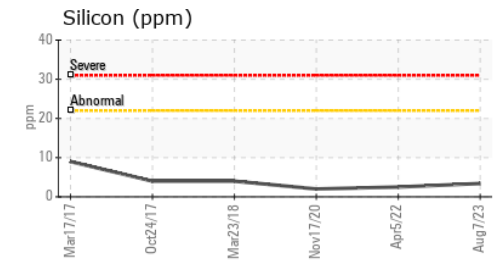
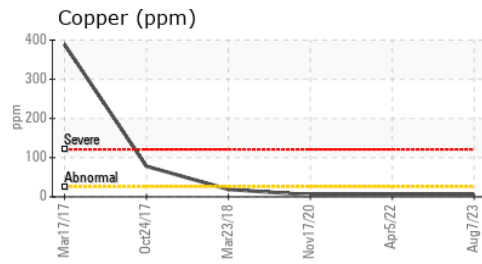
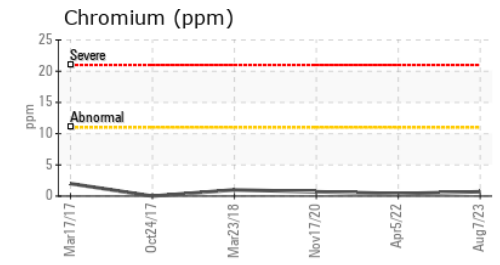
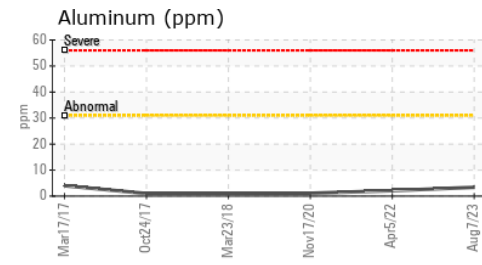
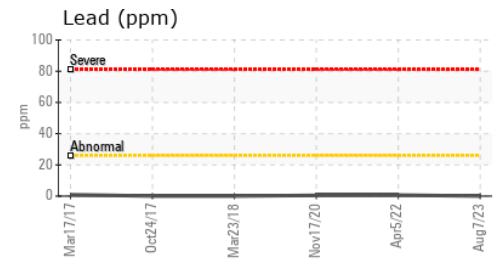
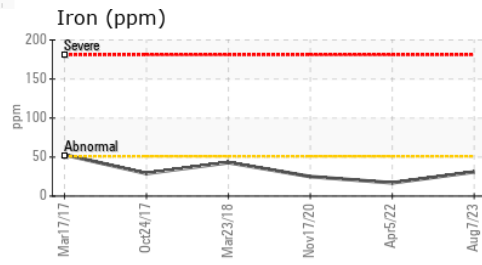
OIL ANALYSIS REPORT



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	>0.21	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.3	14.0

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0089596 **Received** : 15 Aug 2023
Lab Number : 05924659 **Diagnosed** : 15 Aug 2023
Unique Number : 10604606 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: TBN)

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 1351 JOLIET RD
 VALPARAISO, IN
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 Contact: MARK STEFFEL
 mark.steffel@gemarshall.com
 T:
 F:

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)