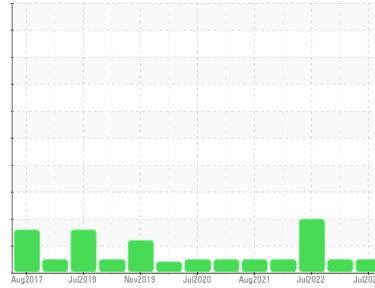




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
63
Machine Id
[63] A63 SPQ 1 Fire Pump

Component
Diesel Engine
Fluid
HIGH PERFORMANCE LUBRICANTS HDMO 15W40 (8 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	HPL0003595	HPL0001736	HPL0000462
Sample Date	Client Info	13 Jul 2023	06 Dec 2022	25 Jul 2022
Machine Age	hrs	86	84	79
Oil Age	hrs	6	4	15
Oil Changed	Client Info	Not Changed	Changed	Not Changed
Sample Status		NORMAL	NORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<1.0	<1.0	<1.0
Glycol	WC Method	NEG	NEG	0.0

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >90	3	8	9
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >2	0	0	0
Titanium	ppm	ASTM D5185m >2	<1	<1	<1
Silver	ppm	ASTM D5185m >2	0	<1	<1
Aluminum	ppm	ASTM D5185m >20	4	2	3
Lead	ppm	ASTM D5185m >40	2	7	6
Copper	ppm	ASTM D5185m >330	84	146	126
Tin	ppm	ASTM D5185m >15	<1	1	1
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	<1	<1	<1

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 200	28	145	149
Barium	ppm	ASTM D5185m	2	0	<1
Molybdenum	ppm	ASTM D5185m 85	478	44	40
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 525	862	344	324
Calcium	ppm	ASTM D5185m 4300	2485	2486	2266
Phosphorus	ppm	ASTM D5185m 1000	1002	781	747
Zinc	ppm	ASTM D5185m 1100	1169	893	891
Sulfur	ppm	ASTM D5185m 20200	9101	10996	10461

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	20	2	5
Sodium	ppm	ASTM D5185m	10	45	51
Potassium	ppm	ASTM D5185m >20	2	0	4

INFRA-RED

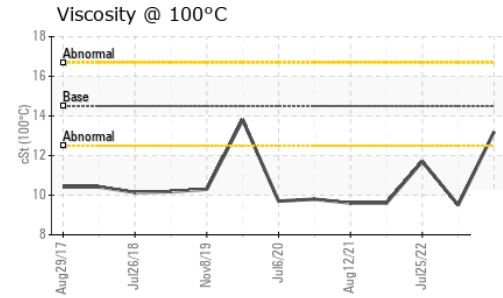
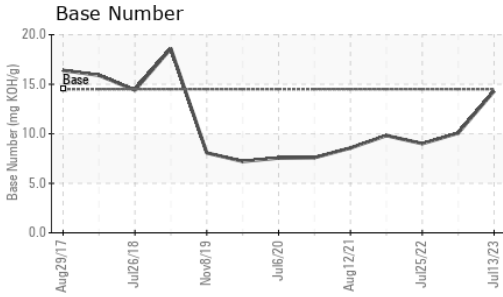
method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >6	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	7.2	6.6	7.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	34.6	21.3	18.9

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	33.6	13.2	12.2
Base Number (BN)	mg KOH/g	ASTM D2896 14.5	14.31	10.07	9.00



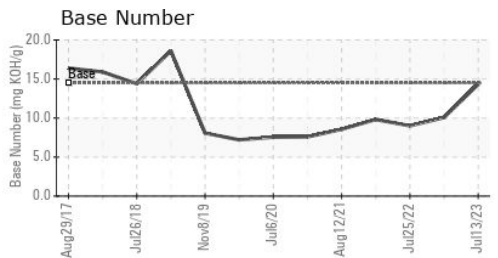
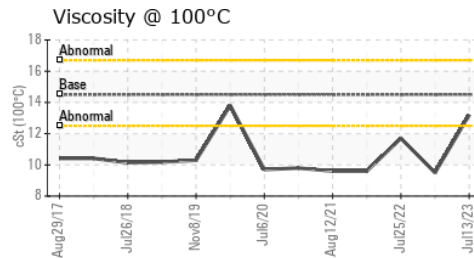
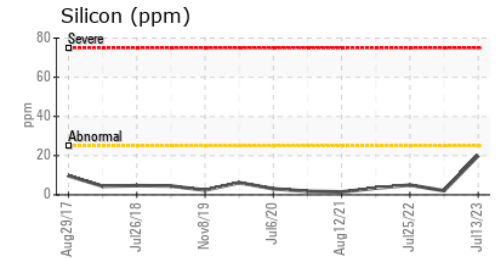
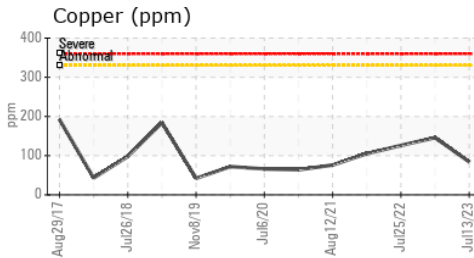
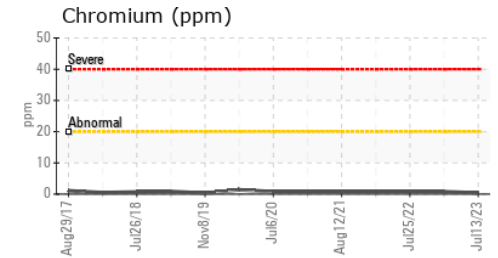
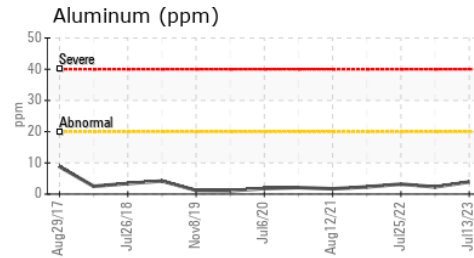
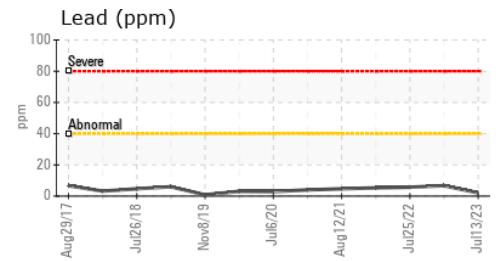
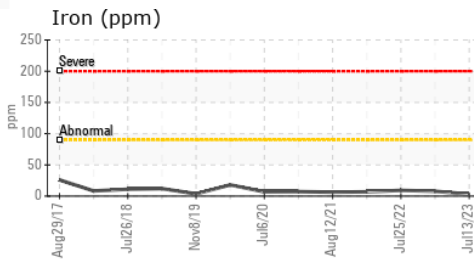
OIL ANALYSIS REPORT



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	▲ MODER
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	▲ 0.2%
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.5	13.2	9.5	11.7

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HPL0003595 **Received** : 18 Jul 2023
Lab Number : 05901455 **Diagnosed** : 26 Jul 2023
Unique Number : 10562811 **Diagnostician** : Doug Bogart
Test Package : MOB 2

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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