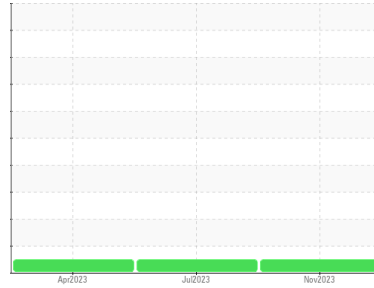




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
27317
 Component
Diesel Engine
 Fluid
NOT GIVEN (--- 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. The amount and size of particulates present in the system are acceptable.

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		KL0012101	KL0012008	KLM2339462
Sample Date	Client Info		10 Nov 2023	28 Jul 2023	10 Apr 2023
Machine Age	mls	Client Info	54937	49265	46403
Oil Age	mls	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	NORMAL	NORMAL

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	32	9	15
Chromium	ppm	ASTM D5185m >20	1	<1	<1
Nickel	ppm	ASTM D5185m >4	0	0	0
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >20	3	2	2
Lead	ppm	ASTM D5185m >40	<1	0	0
Copper	ppm	ASTM D5185m >330	2	<1	1
Tin	ppm	ASTM D5185m >15	<1	0	0
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	24	63	53
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	78	83	64
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	393	304	1132
Calcium	ppm	ASTM D5185m	1822	1963	1038
Phosphorus	ppm	ASTM D5185m	1024	1067	1030
Zinc	ppm	ASTM D5185m	1285	1274	1295
Sulfur	ppm	ASTM D5185m	3608	4488	4071

CONTAMINANTS

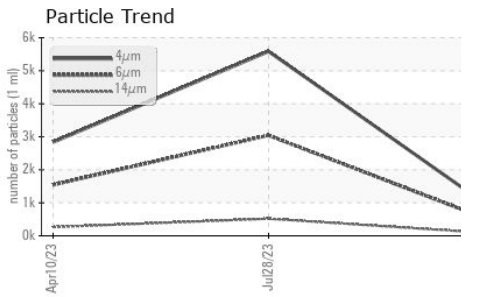
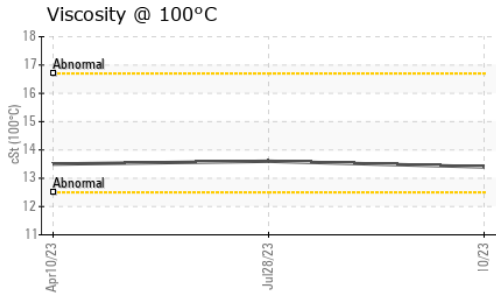
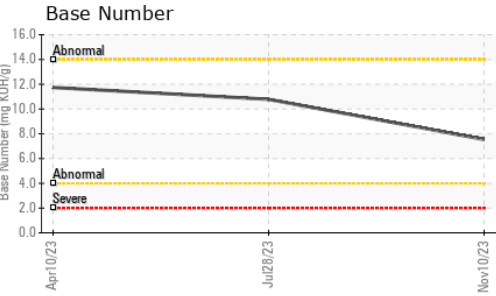
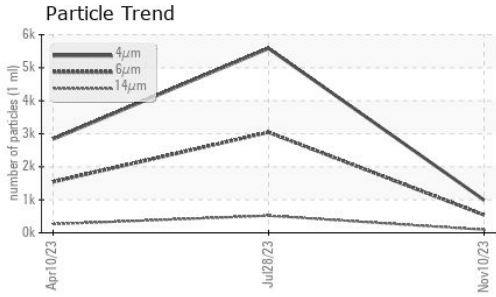
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	8	4	5
Sodium	ppm	ASTM D5185m	7	2	3
Potassium	ppm	ASTM D5185m >20	4	2	6

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.9	0.3	0.6
Nitration	Abs/cm	*ASTM D7624 >20	11.7	8.2	9.3
Sulfation	Abs./1mm	*ASTM D7415 >30	28.0	18.8	23.1



OIL ANALYSIS REPORT



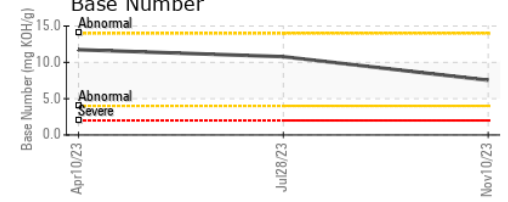
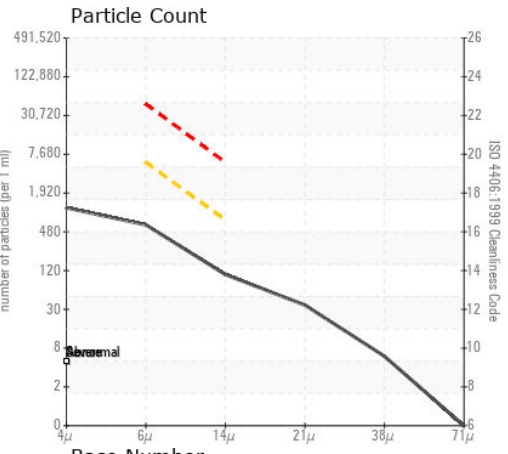
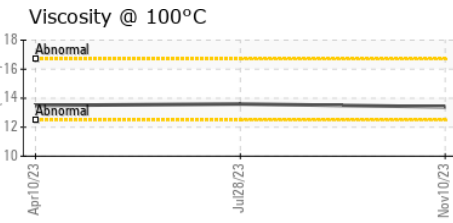
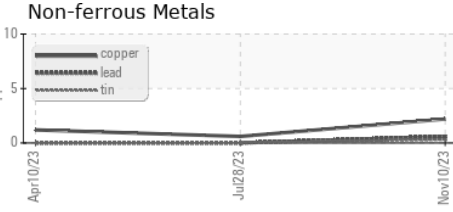
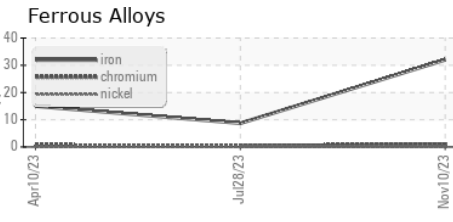
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		992	5585	2836
Particles >6µm	ASTM D7647	>5000	540	3043	1545
Particles >14µm	ASTM D7647	>640	92	518	263
Particles >21µm	ASTM D7647	>160	31	174	89
Particles >38µm	ASTM D7647	>40	5	27	14
Particles >71µm	ASTM D7647	>10	0	3	1
Oil Cleanliness	ISO 4406 (c)	>19/16	16/14	19/16	18/15

FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414	>25	28.3	16.1	21.7
Base Number (BN)	mg KOH/g ASTM D2896		7.54	10.78	11.74

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar *Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar *Visual	NONE	NONE	NONE	NONE
Precipitate	scalar *Visual	NONE	NONE	NONE	NONE
Silt	scalar *Visual	NONE	NONE	NONE	NONE
Debris	scalar *Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar *Visual	NONE	NONE	NONE	NONE
Appearance	scalar *Visual	NORML	NORML	NORML	NORML
Odor	scalar *Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar *Visual	>0.2	NEG	NEG	NEG
Free Water	scalar *Visual		NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt ASTM D445		13.4	13.6	13.5

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012101 **Received** : 20 Nov 2023
Lab Number : **06013435** **Diagnosed** : 23 Nov 2023
Unique Number : 10752579 **Diagnostician** : Don Baldrige
Test Package : MOB 2 (Additional Tests: PrtCount)

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 AIEA, HI
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 Contact: CLYDE OMIJA
 comija@honolulu.gov
 T: (575)623-9952
 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)