



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**35158**  
Component  
**Diesel Engine**  
Fluid  
**{not provided} (--- QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KL0012025</b>	KL0012105	KL0012045
Sample Date		Client Info		<b>02 Feb 2024</b>	10 Nov 2023	25 Jul 2023
Machine Age	mls	Client Info		<b>192583</b>	188353	180284
Oil Age	mls	Client Info		<b>188353</b>	0	0
Filter Age	mls	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	ATTENTION	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>8</b>	17	13
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	4	2
Lead	ppm	ASTM D5185m	>40	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>1</b>	3	3
Tin	ppm	ASTM D5185m	>15	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

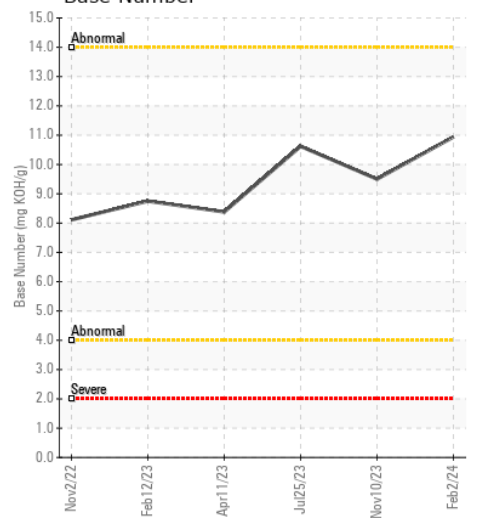
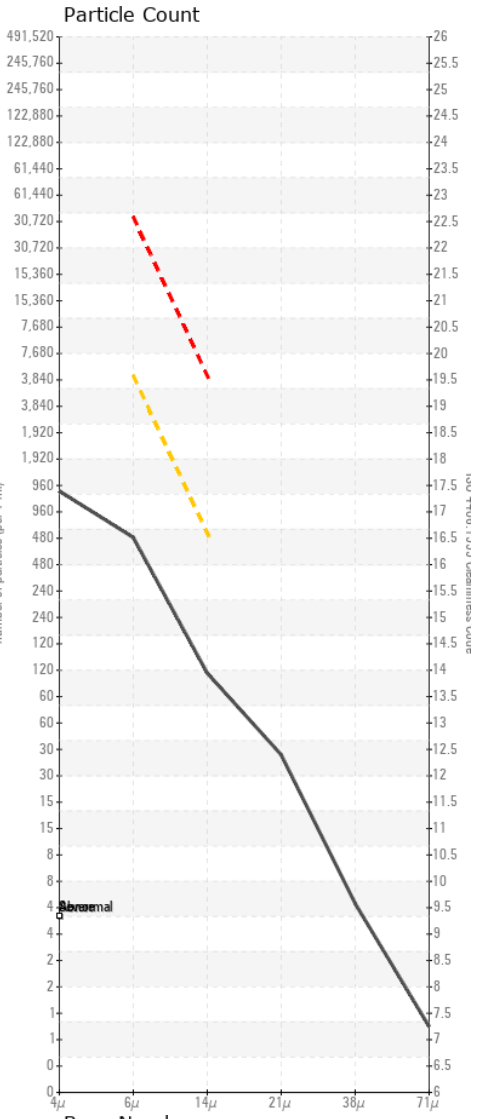
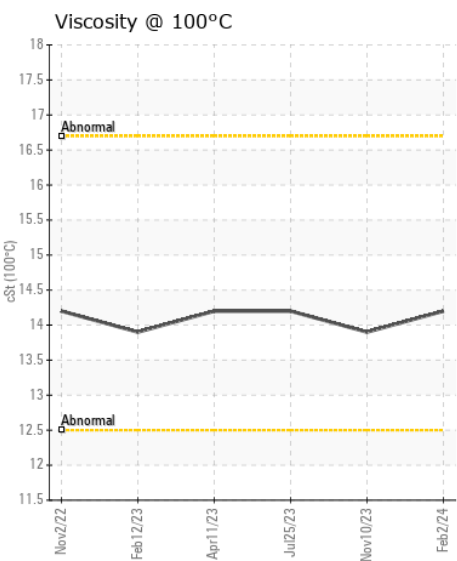
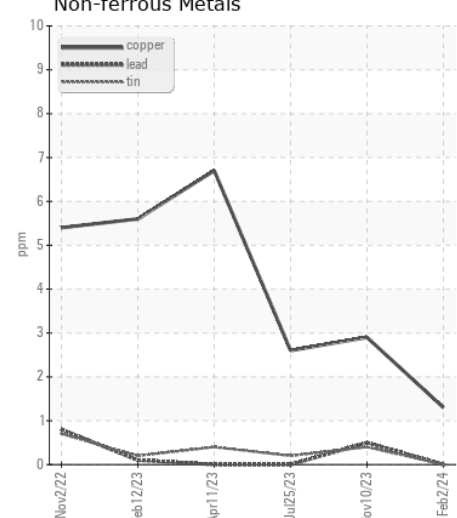
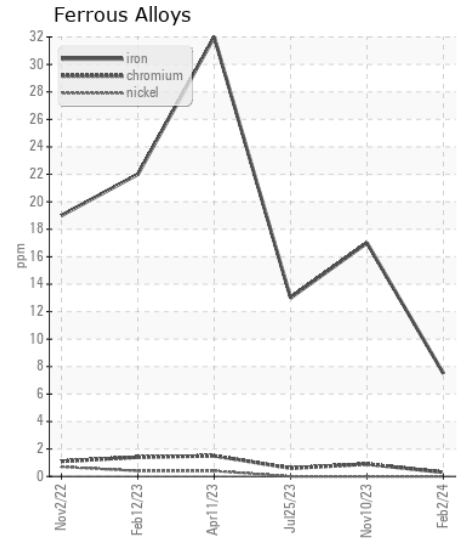
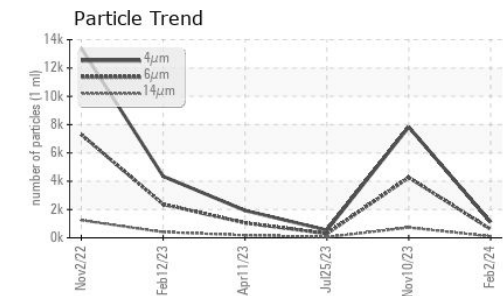
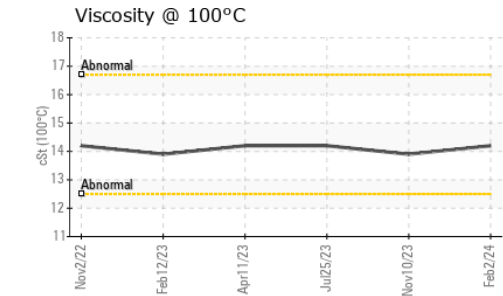
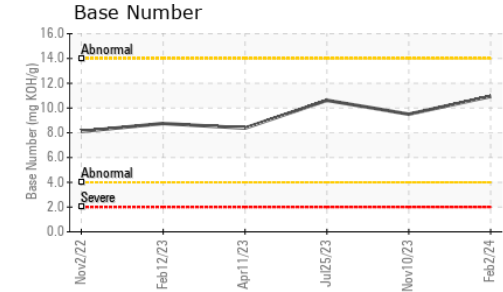
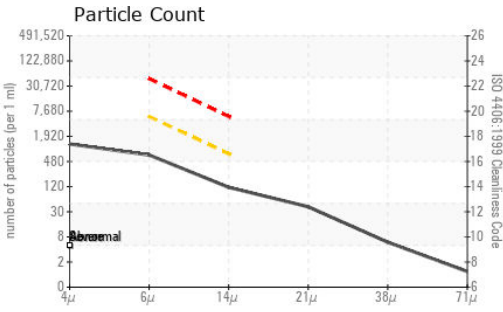
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	>25	<b>5</b>	8	6
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	7	3
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.3</b>	0.8	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.0</b>	10.1	7.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.9</b>	22.4	20.3
Particles >4µm		ASTM D7647		<b>1105</b>	7830	539
Particles >6µm		ASTM D7647	>5000	<b>602</b>	4265	294
Particles >14µm		ASTM D7647	>640	<b>102</b>	▲ 726	50
Particles >21µm		ASTM D7647	>160	<b>35</b>	▲ 245	17
Particles >38µm		ASTM D7647	>40	<b>5</b>	38	3
Particles >71µm		ASTM D7647	>10	<b>1</b>	4	0
Oil Cleanliness		ISO 4406 (c)	>19/16	<b>16/14</b>	▲ 19/17	15/13
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## 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.

Sodium	ppm	ASTM D5185m		<b>2</b>	6	5
Boron	ppm	ASTM D5185m		<b>85</b>	29	76
Barium	ppm	ASTM D5185m		<b>11</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>59</b>	64	64
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>966</b>	991	1022
Calcium	ppm	ASTM D5185m		<b>945</b>	1295	1165
Phosphorus	ppm	ASTM D5185m		<b>967</b>	1133	1084
Zinc	ppm	ASTM D5185m		<b>1142</b>	1402	1317
Sulfur	ppm	ASTM D5185m		<b>3463</b>	3640	4113
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.9</b>	18.8	15.9
Base Number (BN)	mg KOH/g	ASTM D2896		<b>10.94</b>	9.50	10.62
Visc @ 100°C	cSt	ASTM D445		<b>14.2</b>	13.9	14.2



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0012025 **Received** : 14 Feb 2024  
**Lab Number** : 06089640 **Tested** : 16 Feb 2024  
**Unique Number** : 10877085 **Diagnosed** : 16 Feb 2024 - Jonathan Hester  
**Test Package** : MOB 2 ( Additional Tests: PrtCount )  
 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)

**CITY & COUNTY HONOLULU**  
 99-999 IWAENA RD  
 AIEA, HI  
 US 96701  
 Contact: CLYDE OMIJA  
 comija@honolulu.gov  
 T: (575)623-9952  
 F: