



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>ABNORMAL</b>
FLUID CONDITION	<b>ABNORMAL</b>

Area  
**GUAY SON [CONHER]**  
Machine Id  
**IBACO BM ISMAR II**  
Component  
**Diesel Engine**  
Fluid  
**RALOY 15W40 (160 LTR)**

## RECOMMENDATION

We advise that you check the fuel injection system. Resample at the next service interval to monitor. ( Customer Sample Comment: Fluid: Raloy 15W40  
Drained 80 liters and then added new 80 liters )

## WEAR

All component wear rates are normal.

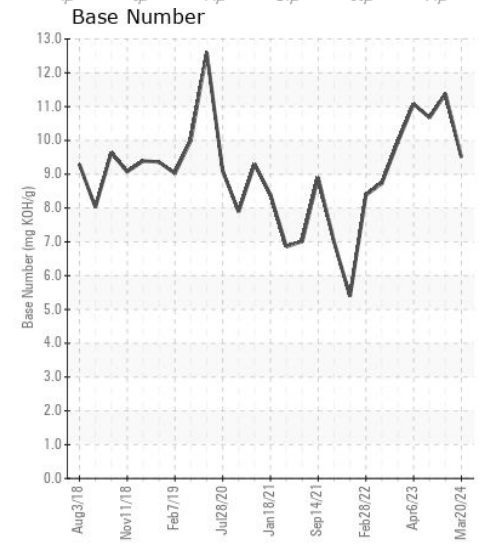
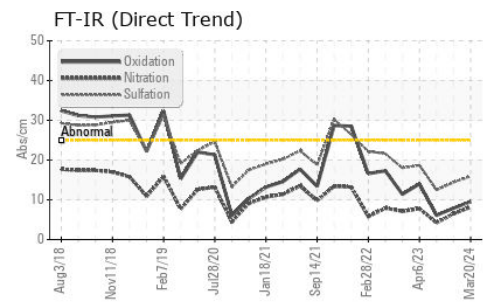
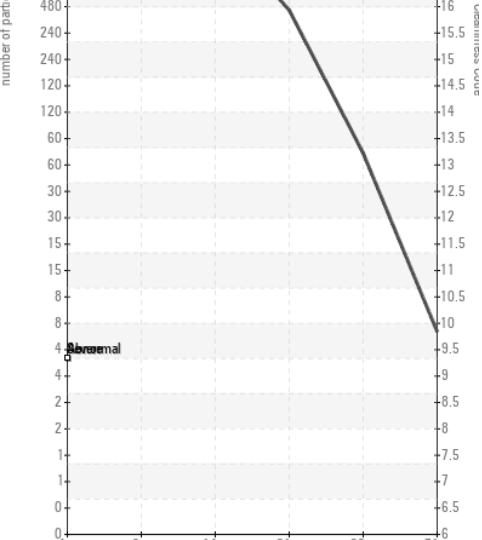
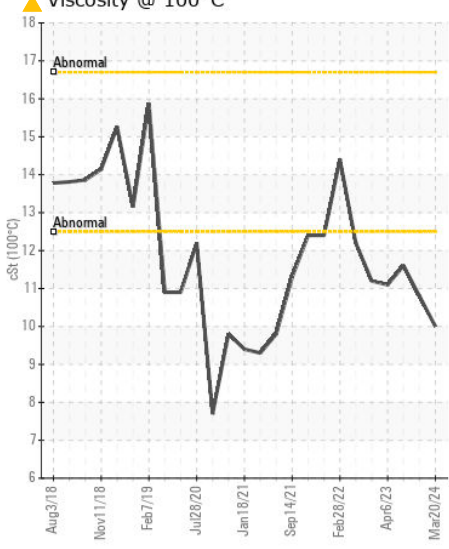
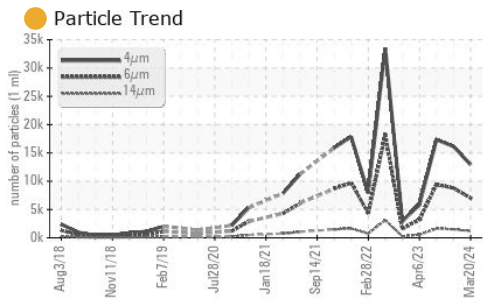
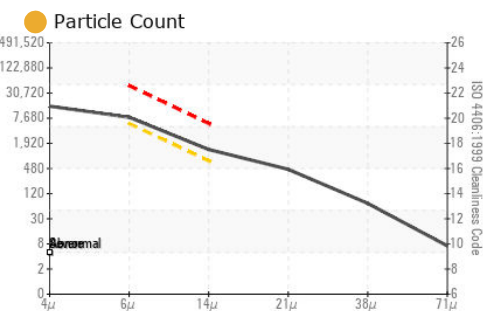
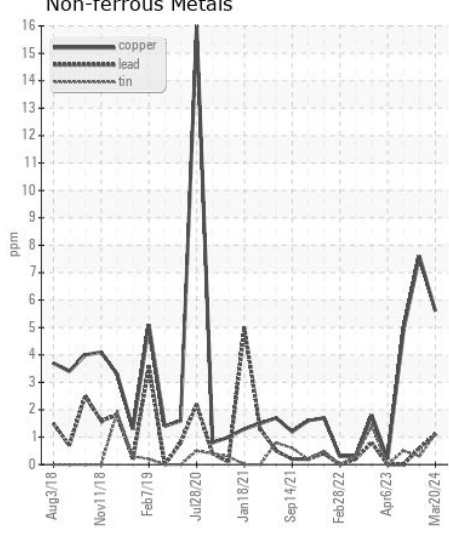
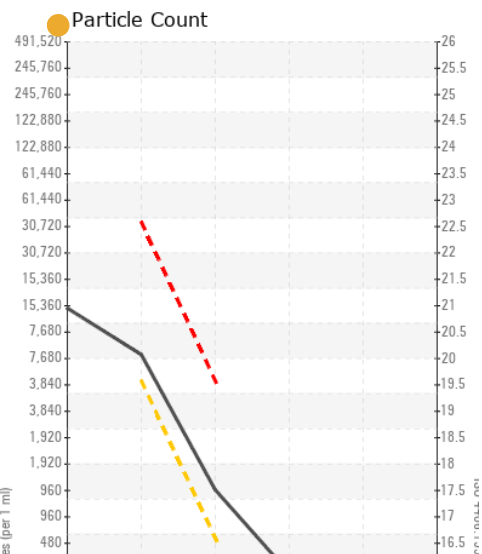
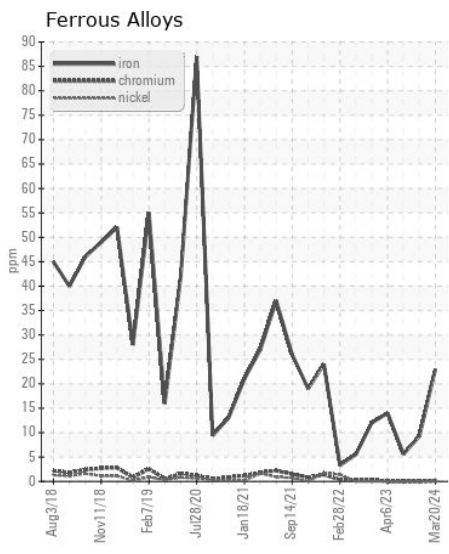
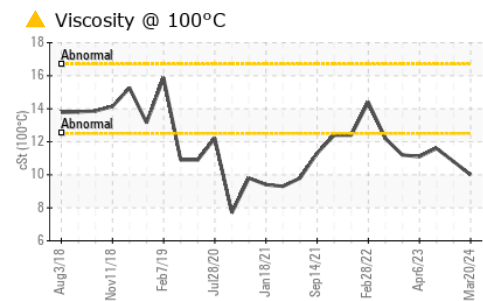
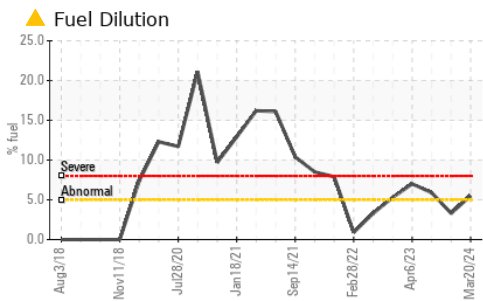
## CONTAMINATION

There is a moderate amount of particulates present in the oil. There is a moderate amount of fuel present in the oil.

## FLUID CONDITION

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KL0014205</b>	KL0013399	KL0012850
Sample Date		Client Info		<b>20 Mar 2024</b>	14 Nov 2023	20 Sep 2023
Machine Age	hrs	Client Info		<b>15348</b>	13688	12985
Oil Age	hrs	Client Info		<b>919</b>	400	10
Filter Age	hrs	Client Info		<b>919</b>	400	10
Oil Changed		Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Filter Changed		Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	<b>23</b>	9	6
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>1</b>	1	3
Lead	ppm	ASTM D5185m	>40	<b>1</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>6</b>	8	5
Tin	ppm	ASTM D5185m	>15	<b>1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	<b>8</b>	8	9
Potassium	ppm	ASTM D5185m	>20	<b>6</b>	9	23
Fuel	%	ASTM D3524	>5	<b>▲ 5.5</b>	▲ 3.3	▲ 5.9
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>	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.2</b>	6.5	4.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>15.9</b>	14.4	12.5
Particles >4µm		ASTM D7647		<b>12919</b>	16129	17312
Particles >6µm		ASTM D7647	>5000	<b>● 7038</b>	▲ 8786	● 9431
Particles >14µm		ASTM D7647	>640	<b>● 1198</b>	▲ 1495	▲ 1605
Particles >21µm		ASTM D7647	>160	<b>● 403</b>	▲ 504	▲ 541
Particles >38µm		ASTM D7647	>40	<b>● 62</b>	▲ 78	▲ 83
Particles >71µm		ASTM D7647	>10	<b>6</b>	8	9
Oil Cleanliness		ISO 4406 (c)	>19/16	<b>● 20/17</b>	▲ 20/18	▲ 20/18
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
Sodium	ppm	ASTM D5185m		<b>1</b>	3	6
Boron	ppm	ASTM D5185m		<b>0</b>	6	9
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>3</b>	3	6
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>4</b>	12	23
Calcium	ppm	ASTM D5185m		<b>2641</b>	2646	2498
Phosphorus	ppm	ASTM D5185m		<b>1112</b>	1203	1098
Zinc	ppm	ASTM D5185m		<b>1263</b>	1331	1332
Sulfur	ppm	ASTM D5185m		<b>3809</b>	3406	3699
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.5</b>	7.9	6.1
Base Number (BN)	mg KOH/g	ASTM D2896		<b>9.50</b>	11.38	10.67
Visc @ 100°C	cSt	ASTM D445		<b>▲ 10.0</b>	● 10.8	▲ 11.6



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0014205 **Received** : 18 Apr 2024  
**Lab Number** : 06153302 **Tested** : 23 Apr 2024  
**Unique Number** : 10983380 **Diagnosed** : 23 Apr 2024 - Jonathan Hester  
**Test Package** : MOB 2 ( Additional Tests: FuelDilution, PercentFuel, 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)

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