

# **OIL ANALYSIS REPORT**

RIG 6 **R6-G-03 NKL** 

Diesel Engine

**DIESEL ENGINE OIL SAE 40 (--- GAL)** 

# Sample Rating Trend



# **DIAGNOSIS**

# Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

All component wear rates are normal.

# Contamination

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

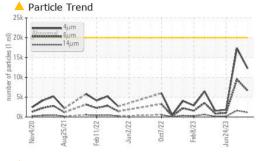
# **Fluid Condition**

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

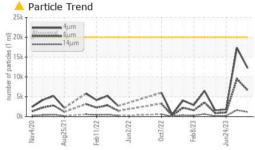
		ov2020 Aug				
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KL0012960	KL0012688	KL0012524
Sample Date		Client Info		13 Sep 2023	26 Jul 2023	24 Jun 2023
Machine Age	days	Client Info		45180	45134	45099
Oil Age	days	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ATTENTION	ABNORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	3	5	3
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	7	6	3
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	<1	2	<1
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	403	451	433
Barium	ppm	ASTM D5185m	10	0	<1	0
Molybdenum			10	U	< 1	Ü
•	ppm	ASTM D5185m	100	137	179	130
Manganese	ppm	ASTM D5185m ASTM D5185m		-		
				137	179	130
Manganese	ppm	ASTM D5185m	100	137 0	179 <1	130
Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	100 450	137 0 707	179 <1 900	130 <1 727
Manganese Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000	137 0 707 1612	179 <1 900 2091	130 <1 727 1633
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150	137 0 707 1612 728	179 <1 900 2091 925	130 <1 727 1633 729
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150 1350	137 0 707 1612 728 878	179 <1 900 2091 925 1166	130 <1 727 1633 729 870
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	450 3000 1150 1350 4250	137 0 707 1612 728 878 2574 current	179 <1 900 2091 925 1166 3609 history1 8	130 <1 727 1633 729 870 3102 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	100 450 3000 1150 1350 4250 limit/base	137 0 707 1612 728 878 2574 current 6 46	179 <1 900 2091 925 1166 3609 history1 8 7	130 <1 727 1633 729 870 3102 history2 8
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	100 450 3000 1150 1350 4250 limit/base >25	137 0 707 1612 728 878 2574 current	179 <1 900 2091 925 1166 3609 history1 8	130 <1 727 1633 729 870 3102 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	100  450 3000 1150 1350 4250  limit/base >25 >216	137 0 707 1612 728 878 2574 current 6 46	179 <1 900 2091 925 1166 3609 history1 8 7	130 <1 727 1633 729 870 3102 history2 8 2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm	ASTM D5185m	100 450 3000 1150 1350 4250 limit/base >25 >216 >20	137 0 707 1612 728 878 2574 current 6 46	179 <1 900 2091 925 1166 3609 history1 8 7 2	130 <1 727 1633 729 870 3102 history2 8 2 3
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	100  450 3000 1150 1350 4250  limit/base >25 >216 >20  limit/base >3	137 0 707 1612 728 878 2574 current 6 46 0	179 <1 900 2091 925 1166 3609 history1 8 7 2 history1	130 <1 727 1633 729 870 3102 history2 8 2 3 history2



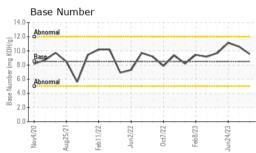
# **OIL ANALYSIS REPORT**



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	12223	17338	1810
Particles >6µm	ASTM D7647	>5000	<b>^</b> 6659	<b>△</b> 9445	986
Particles >14µm	ASTM D7647	>640	<u> </u>	<u> </u>	168
Particles >21µm	ASTM D7647	>160	<b>4</b> 382	<u></u> 541	57
Particles >38µm	ASTM D7647	>40	<b>4</b> 59	<u></u> 84	9
Particles >71µm	ASTM D7647	>10	6	9	1
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<u>^</u> 21/20/17	<u>\$\lambda\$\$ 21/20/18</u>	18/17/15
FLUID DEGRADATION	method	limit/base	current	history1	history2

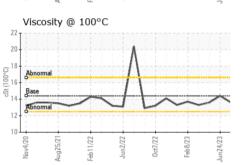


Oxidation	Abs/.1mm	*ASTM D7414	>25	16.1	17.2	15.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	9.54	10.61	11.13
VISUAL		method	limit/hasa	current	history1	history2



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
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water scalar		*Visual		NEG	NEG	NEG
ELLID DRODERTIES		mothod	limit/baco	ourropt	history1	history?

13.6



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	iron			A			491,520 Sev	ere				
	enness chrom	nium		$\Lambda$	1		122,880					-24
1		5	$\nearrow$	V	<b>'V</b>	$\vee$	30,720 Abr	iormal				-22
20	21	22	22	22	23	23	- ≘ 7,680	-	150			20
Nov4/20	Aug25/21	Feb11/22	Jun2/22	0ct7/22	Feb8/23	Jun24/23	图 1,920-					18
	-ferrou	ıs Met	als				7,680 - 1,920 - 480 -			1		-16
T	coppe	er j					120 - 120 - 30 -				\	114 112
- 100000	tin	J					图 30-				1	-12
0		3					8-					10
Nov4/20	Aug25/21.	Feb 11/22	Jun2/22	Oct7/22	Feb 8/23	Jun24/23	2-					-8
N	Aug	是	Jul	00	3	Am	0,	-				- 6
	cosity @	100	°C				- <sup>4</sup> μ - B	ase Numl	14µ ber	21μ	38μ	71µ
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Abno	ormal	hatai	^			77777	E 10.0 − B	ase		/		
15 - Base	ormal		<u> </u>				Base Number (mg KOH/g)	bnormal				
10	21-	- 2	- 22	- 22		2	B 98 0.0	- 12	- 22	72	8	8





Laboratory Sample No. Lab Number Unique Number : 10672080

: KL0012960 : 05965529

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received

cSt

ASTM D445

14.4

Visc @ 100°C

**GRAPHS** 

: 29 Sep 2023 Diagnosed : 04 Oct 2023 Diagnostician : 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)

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