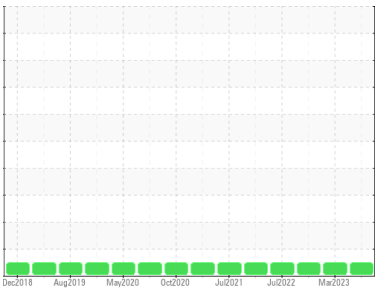
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
KEMP QUARRIES / BCS - GRAVETTE
Machine Id
WL124
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. (Customer Sample Comment: PM-1 changed filters and fluid)

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	history 1	history 2
Sample Number		Client Info		**PCA0086295**	PCA0086015	PCA0070271
Sample Date		Client Info		**06 Jul 2023**	17 Mar 2023	18 Oct 2022
Machine Age	hrs	Client Info		**36752**	36319	35888
Oil Age	hrs	Client Info		**36752**	36319	35888
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	**14**	17	30
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>20	**2**	2	4
Lead	ppm	ASTM D5185m	>40	**<1**	2	3
Copper	ppm	ASTM D5185m	>330	**8**	8	5
Tin	ppm	ASTM D5185m	>15	**1**	1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	250	**<1**	2	2
Barium	ppm	ASTM D5185m	10	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**56**	60	61
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	450	**967**	989	838
Calcium	ppm	ASTM D5185m	3000	**1122**	1189	1124
Phosphorus	ppm	ASTM D5185m	1150	**1047**	1103	985
Zinc	ppm	ASTM D5185m	1350	**1306**	1347	1180
Sulfur	ppm	ASTM D5185m	4250	**3782**	3863	3484

CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>25	**9**	17	3
Sodium	ppm	ASTM D5185m	>216	**2**	4	<1
Potassium	ppm	ASTM D5185m	>20	**1**	<1	2

INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	>3	**0.6**	0.4	1.6
Nitration	Abs/cm	*ASTM D7624	>20	**6.5**	6.1	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.4**	18.4	22.0

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**14.9**	13.2	15.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**8.4**	9.2	9.5

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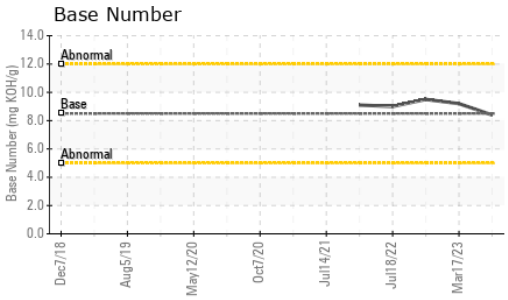
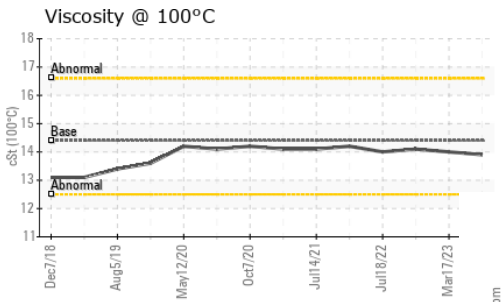
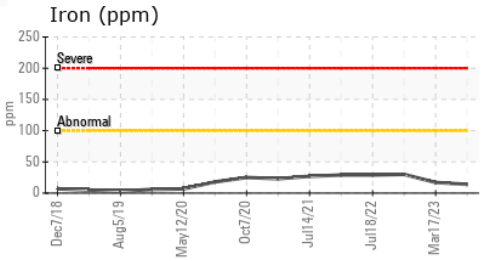


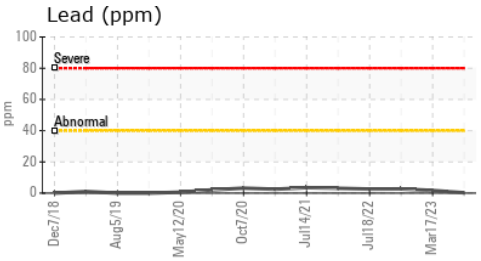


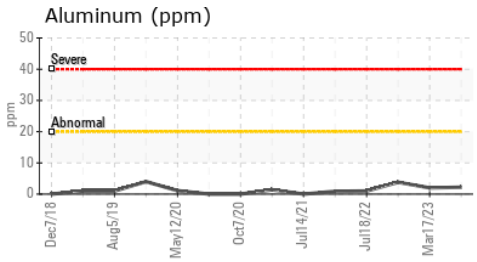
VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

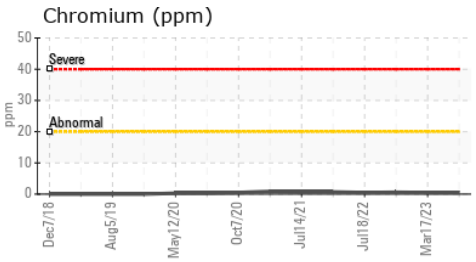
FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	14.4	**13.9**	14.0	14.1

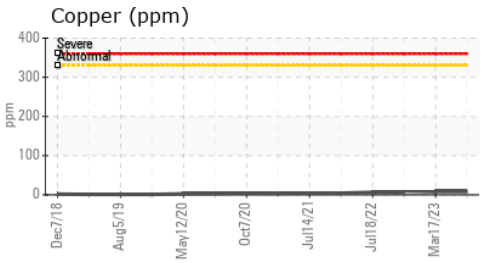
GRAPHS

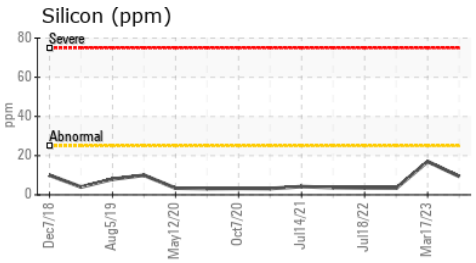


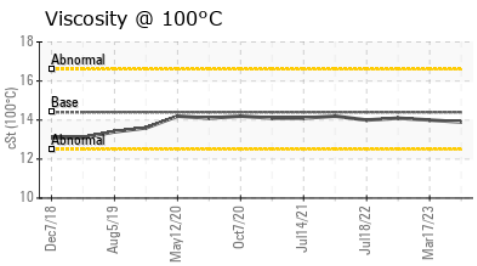


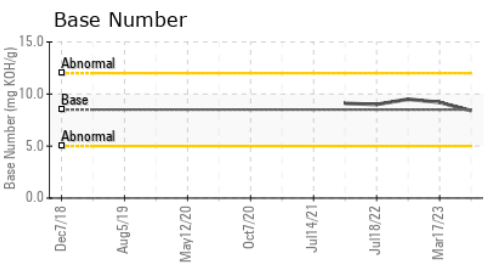












Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0086295 **Received** : 10 Jul 2023
Lab Number : 05894253 **Diagnosed** : 12 Jul 2023
Unique Number : 10550063 **Diagnostician** : Don Baldridge
Test Package : MOB 1 (Additional Tests: TBN)

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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Report Id: KEMSUL [WUSCAR] 05894253 (Generated: 07/12/2023 11:43:39) Rev: 1

Submitted By: