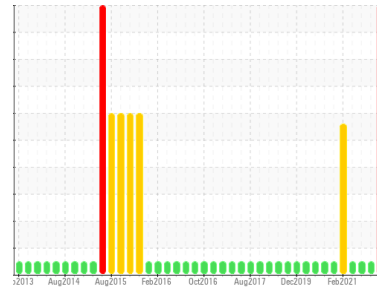


Area
KEMP QUARRIES / HULBERT
Machine Id
WL067
Component
Diesel Engine
Fluid
 DIESEL ENGINE OIL SAE 40 (--- GAL)

Sample Rating Trend



GLYCOL



DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is positive. Elemental level of silicon (Si) above normal. There is a high concentration of glycol present in the oil.

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PCA0085908	PCA0086826	PCA0048712
Sample Date	Client Info			05 Apr 2024	28 Jul 2023	24 Sep 2021
Machine Age	hrs	Client Info		32148	32149	29147
Oil Age	hrs	Client Info		0	0	0
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				SEVERE	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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	40	32	23
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	6	<1	<1
Lead	ppm	ASTM D5185m	>40	4	1	1
Copper	ppm	ASTM D5185m	>330	95	106	7
Tin	ppm	ASTM D5185m	>15	2	1	0
Antimony	ppm	ASTM D5185m		---	---	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	106	0	0
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	277	72	60
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m	450	534	953	943
Calcium	ppm	ASTM D5185m	3000	1095	1107	1085
Phosphorus	ppm	ASTM D5185m	1150	803	986	1000
Zinc	ppm	ASTM D5185m	1350	969	1217	1204
Sulfur	ppm	ASTM D5185m	4250	2813	2848	2679

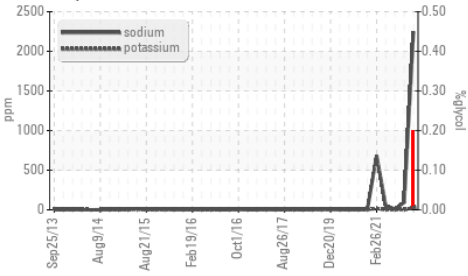
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ 28	4	4
Sodium	ppm	ASTM D5185m	>216	▲ 2246	95	9
Potassium	ppm	ASTM D5185m	>20	▲ 27	2	<1
Glycol	%	*ASTM D2982		▲ 0.20	0.0	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.7	1.1	0.9
Nitration	Abs/cm	*ASTM D7624	>20	28.0	7.9	7.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	0.0	20.0	20

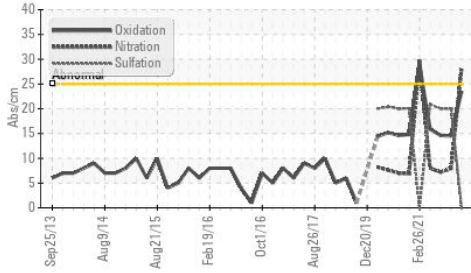
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.5	14.5	14.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	47.0	8.6	---

OIL ANALYSIS REPORT

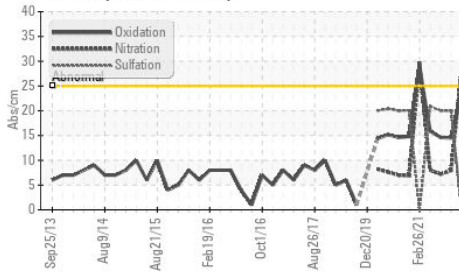
▲ Glycol Contamination



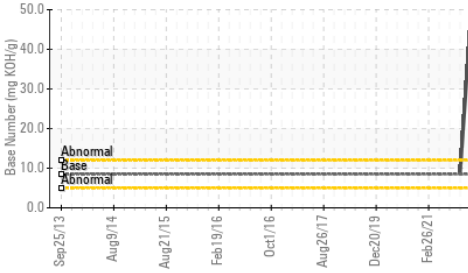
● FT-IR (Direct Trend)



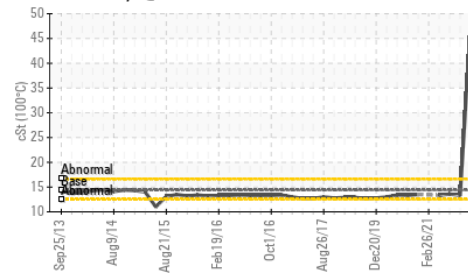
● FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C



VISUAL

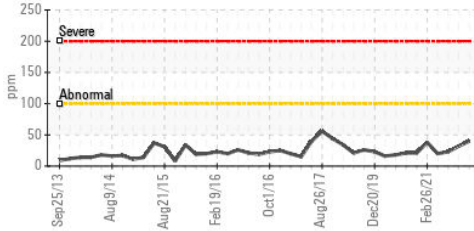
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

FLUID PROPERTIES

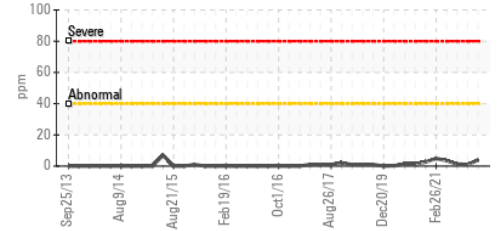
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	47.4	13.3

GRAPHS

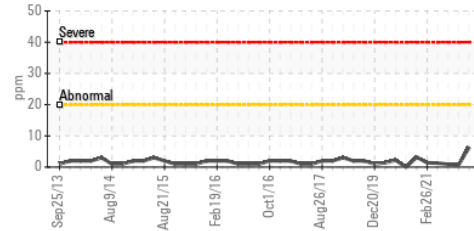
Iron (ppm)



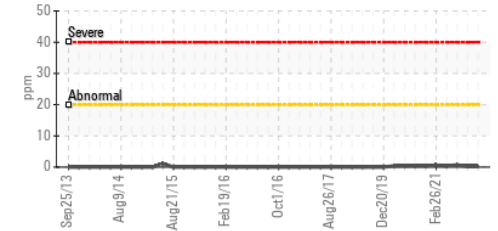
Lead (ppm)



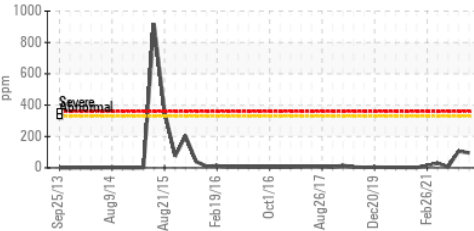
Aluminum (ppm)



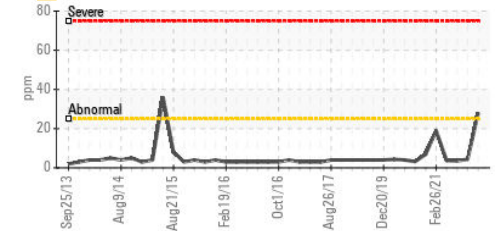
Chromium (ppm)



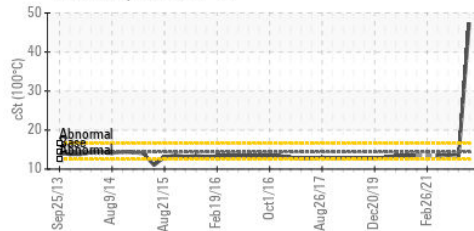
Copper (ppm)



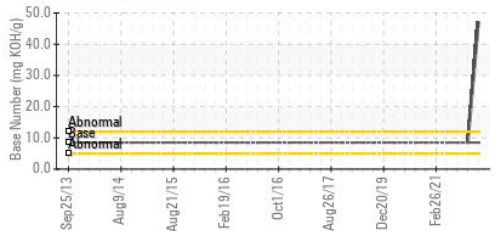
▲ Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : PCA0085908

Lab Number : 06149408

Unique Number : 10979486

Test Package : MOB 1 (Additional Tests: Glycol, 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)

Received : 15 Apr 2024

Tested : 17 Apr 2024

Diagnosed : 17 Apr 2024 - Don Baldrige

Kemp Quarries - Kemp Stone - Hulbert

17801 Hwy 80

Hulbert, OK

US 74441

Contact:

hulbert@kempstone.com

T:

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