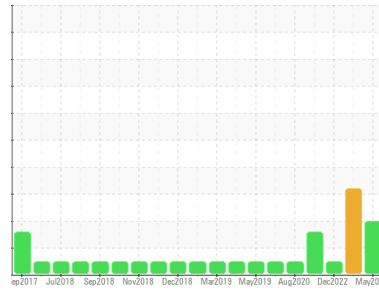


OIL ANALYSIS REPORT

Area
KEMP QUARRIES / HULBERT
Machine Id
WL118
Component
Diesel Engine
Fluid
MOBIL DELVAC 1300 SUPER15W40 (--- GAL)

Sample Rating Trend



GLYCOL



DIAGNOSIS

Recommendation

Check for low coolant level. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

Cylinder, crank, or cam shaft wear is indicated.

Contamination

Sodium and/or potassium levels are high.

Fluid Condition

The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PCA0085954	PCA0084866	PCA0037145
Sample Date	Client Info	10 May 2024	26 Sep 2023	01 Dec 2022
Machine Age	hrs	5490	5358	5054
Oil Age	hrs	132	304	413
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	ABNORMAL	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	▲ 117	▲ 159	42
Chromium	ppm ASTM D5185m >20	3	5	2
Nickel	ppm ASTM D5185m >4	0	0	0
Titanium	ppm ASTM D5185m	<1	<1	<1
Silver	ppm ASTM D5185m >3	<1	0	0
Aluminum	ppm ASTM D5185m >20	18	● 21	10
Lead	ppm ASTM D5185m >40	5	<1	0
Copper	ppm ASTM D5185m >330	16	3	1
Tin	ppm ASTM D5185m >15	<1	<1	0
Antimony	ppm ASTM D5185m	---	---	---
Vanadium	ppm ASTM D5185m	0	0	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	0	0	0
Barium	ppm ASTM D5185m 0	0	0	1
Molybdenum	ppm ASTM D5185m 0	80	80	77
Manganese	ppm ASTM D5185m	2	1	<1
Magnesium	ppm ASTM D5185m 0	1280	1213	1146
Calcium	ppm ASTM D5185m	1467	1381	1367
Phosphorus	ppm ASTM D5185m	1268	1179	1100
Zinc	ppm ASTM D5185m	1641	1405	1398
Sulfur	ppm ASTM D5185m	4234	3561	3570

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	20	▲ 35	17
Sodium	ppm ASTM D5185m	● 89	2	<1
Potassium	ppm ASTM D5185m >20	4	2	0
Glycol	% *ASTM D2982	NEG	NEG	NEG

INFRA-RED

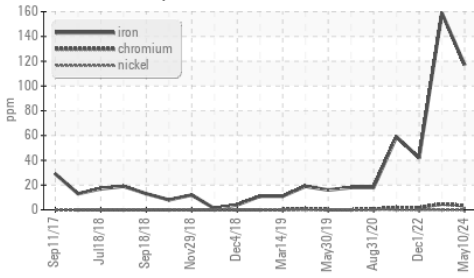
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.2	0.1	0.3
Nitration	Abs/cm *ASTM D7624 >20	8.0	6.3	8.8
Sulfation	Abs/.1mm *ASTM D7415 >30	19.9	18.7	21.9

FLUID DEGRADATION

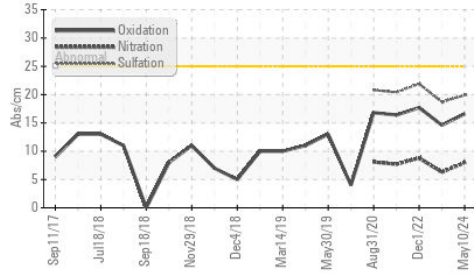
method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	16.6	14.6	17.7
Base Number (BN)	mg KOH/g ASTM D2896 9.4	10.3	10.2	11.9

OIL ANALYSIS REPORT

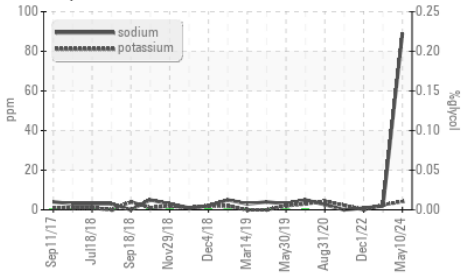
▲ Ferrous Alloys



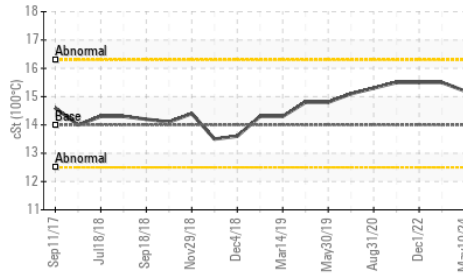
FT-IR (Direct Trend)



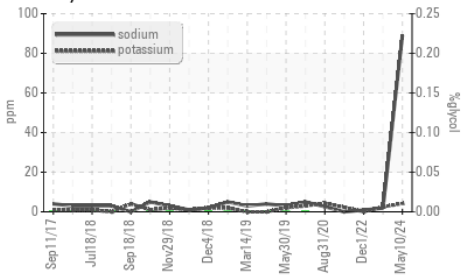
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

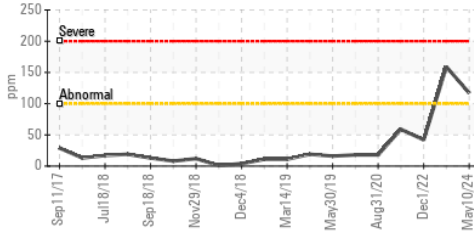


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

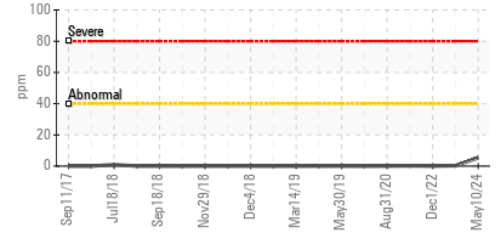
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14	15.2	15.5

GRAPHS

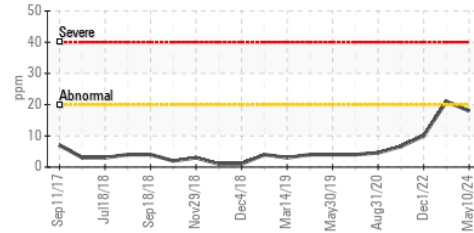
▲ Iron (ppm)



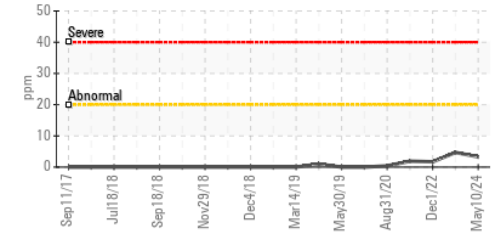
Lead (ppm)



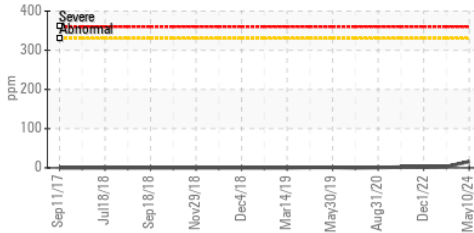
Aluminum (ppm)



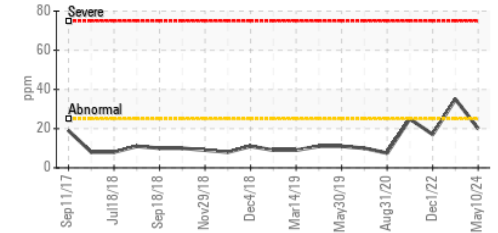
Chromium (ppm)



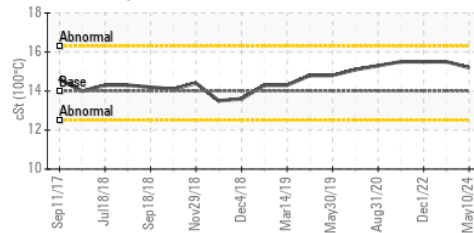
Copper (ppm)



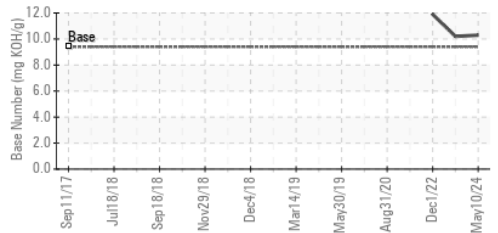
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : PCA0085954

Lab Number : 06193291

Unique Number : 11050043

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 : 28 May 2024

Tested : 30 May 2024

Diagnosed : 30 May 2024 - Sean Felton

Kemp Quarries - Kemp Stone - Hulbert

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Hulbert, OK

US 74441

Contact:

hulbert@kempstone.com

T:

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