

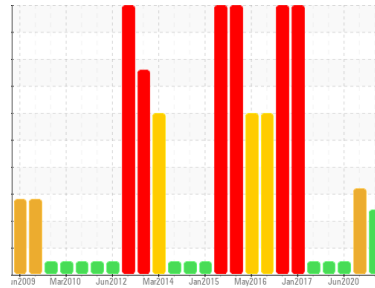


OIL ANALYSIS REPORT



Area
KEMP QUARRIES / RVM-BUTTERFIELD
 Machine Id
WLO34
 Component
Diesel Engine
 Fluid
MOBIL DELVAC 1300 SUPER15W40 (--- 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. (Customer Sample Comment: PM-1 changed filters and fluid)

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PCA0085765	PCA0025535	PCA0010996
Sample Date	Client Info	31 May 2023	21 Jul 2021	17 Jun 2020
Machine Age	hrs	36913	36456	35861
Oil Age	hrs	36913	508	491
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

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	36	46	48
Chromium	ppm ASTM D5185m >20	<1	1	2
Nickel	ppm ASTM D5185m >2	0	<1	<1
Titanium	ppm ASTM D5185m >2	<1	<1	<1
Silver	ppm ASTM D5185m >2	0	<1	0
Aluminum	ppm ASTM D5185m >25	2	2	3
Lead	ppm ASTM D5185m >40	14	16	15
Copper	ppm ASTM D5185m >330	69	36	2
Tin	ppm ASTM D5185m >15	<1	1	2
Antimony	ppm ASTM D5185m	---	0	0
Vanadium	ppm ASTM D5185m	0	0	0
Cadmium	ppm ASTM D5185m	<1	<1	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	13	29	7
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 0	58	63	66
Manganese	ppm ASTM D5185m	<1	<1	<1
Magnesium	ppm ASTM D5185m 0	894	903	1154
Calcium	ppm ASTM D5185m	1246	1206	1282
Phosphorus	ppm ASTM D5185m	1038	1042	1138
Zinc	ppm ASTM D5185m	1282	1230	1346
Sulfur	ppm ASTM D5185m	3713	2802	2457

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	11	8	5
Sodium	ppm ASTM D5185m	▲ 258	▲ 235	4
Potassium	ppm ASTM D5185m >20	▲ 63	28	3
Glycol	% *ASTM D2982	NEG	NEG	NEG

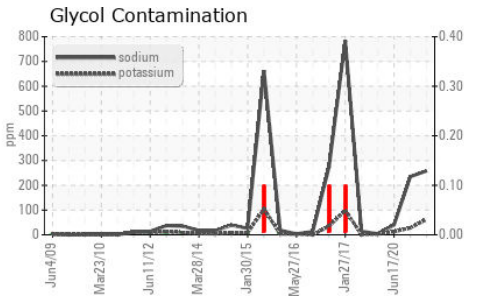
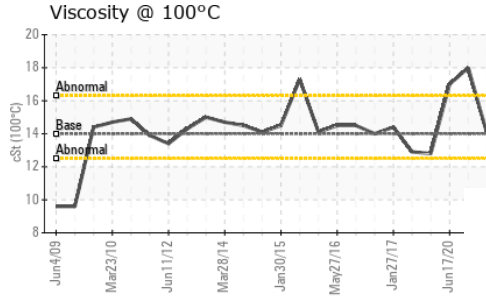
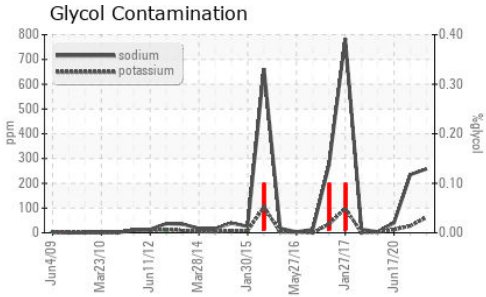
INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.4	0.5	1.8
Nitration	Abs/cm *ASTM D7624 >20	10.6	13.2	12
Sulfation	Abs/.1mm *ASTM D7415 >30	22.0	24.1	26.8

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	18.5	21.6	21.6
Base Number (BN)	mg KOH/g ASTM D2896 9.4	8.9	---	---

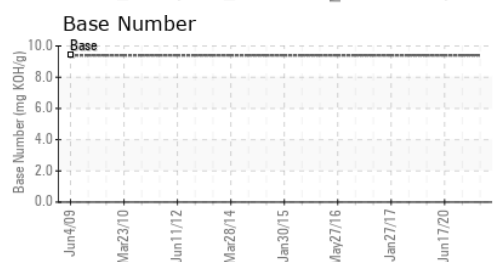
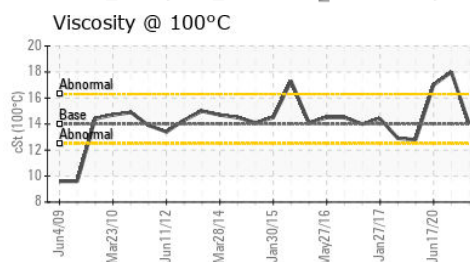
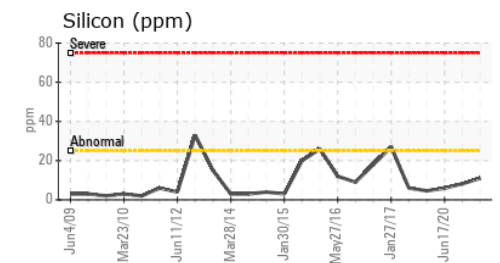
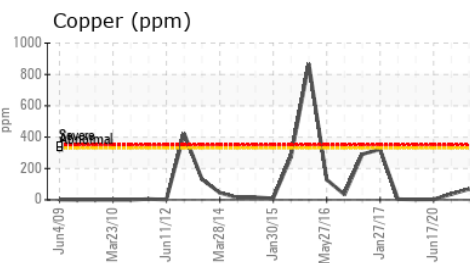
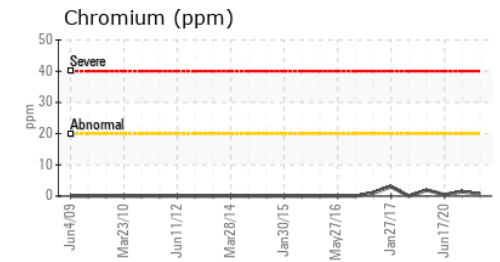
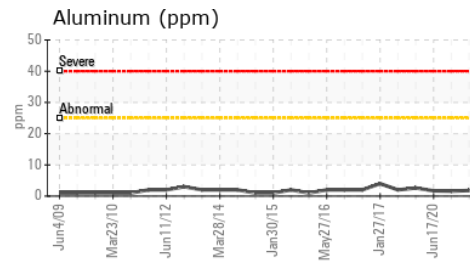
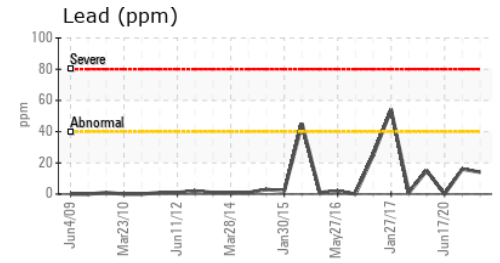
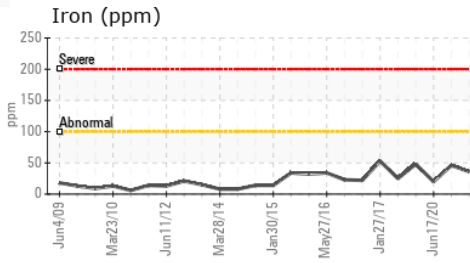
OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445 14	14.0	▲ 18.0	17.0

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0085765 **Received** : 05 Jun 2023
Lab Number : 05864937 **Diagnosed** : 07 Jun 2023
Unique Number : 10499402 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (Additional Tests: Glycol, TBN)

Kemp Quarries - RVM-Butterfield
 8651 Farm Rd 2115
 Purdy, MO
 US 65734
 Contact: LEE DUCHANOIS
 lduchanois@kempquarries.com

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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F: