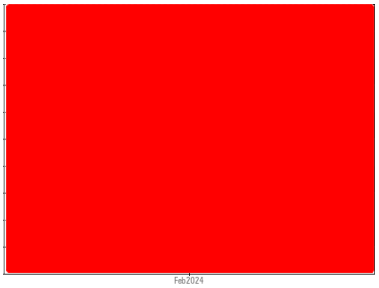
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Area
KEMP QUARRIES / MUSKOGEE SAND [67718]
Machine Id
2746
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

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: Changed filters and fluid)

Wear

Bearing and/or bushing wear is indicated.

Contamination

Sodium and/or potassium levels are high. Test for glycol is positive.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0086544**	---	---
Sample Date		Client Info		**29 Feb 2024**	---	---
Machine Age	hrs	Client Info		**893**	---	---
Oil Age	hrs	Client Info		**893**	---	---
Oil Changed		Client Info		**Changed**	---	---
Sample Status				**SEVERE**	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	---	---
Water		WC Method	>0.2	**NEG**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**243**	---	---
Chromium	ppm	ASTM D5185m	>20	**22**	---	---
Nickel	ppm	ASTM D5185m	>4	**0**	---	---
Titanium	ppm	ASTM D5185m		**0**	---	---
Silver	ppm	ASTM D5185m	>3	**0**	---	---
Aluminum	ppm	ASTM D5185m	>20	**2**	---	---
Lead	ppm	ASTM D5185m	>40	▲ **108**	---	---
Copper	ppm	ASTM D5185m	>330	▲ **209**	---	---
Tin	ppm	ASTM D5185m	>15	**5**	---	---
Vanadium	ppm	ASTM D5185m		**0**	---	---
Cadmium	ppm	ASTM D5185m		**2**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**13**	---	---
Barium	ppm	ASTM D5185m	0	**0**	---	---
Molybdenum	ppm	ASTM D5185m	60	**129**	---	---
Manganese	ppm	ASTM D5185m	0	**3**	---	---
Magnesium	ppm	ASTM D5185m	1010	**818**	---	---
Calcium	ppm	ASTM D5185m	1070	**961**	---	---
Phosphorus	ppm	ASTM D5185m	1150	**907**	---	---
Zinc	ppm	ASTM D5185m	1270	**1064**	---	---
Sulfur	ppm	ASTM D5185m	2060	**3129**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**26**	---	---
Sodium	ppm	ASTM D5185m		▲ **2767**	---	---
Potassium	ppm	ASTM D5185m	>20	▲ **122**	---	---
Glycol	%	*ASTM D2982		▲ **0.12**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	---	---
Nitration	Abs/cm	*ASTM D7624	>20	**11.3**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**18.9**	---	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**14.0**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**24.0**	---	---

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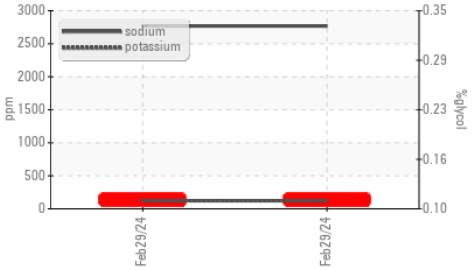
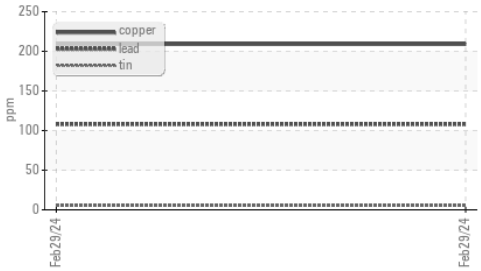
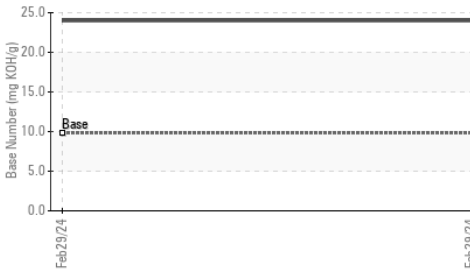
Glycol Contamination



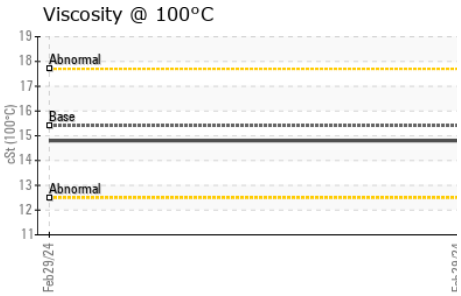
Non-ferrous Metals



Base Number



Viscosity @ 100°C

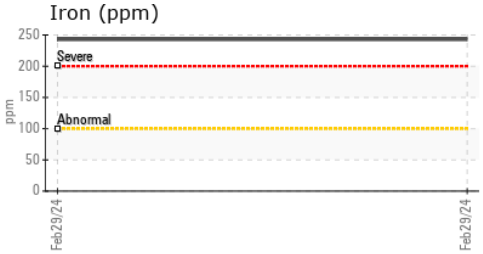


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar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

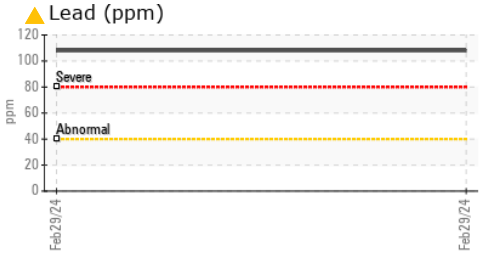
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.8**	---	---

GRAPHS

Iron (ppm)

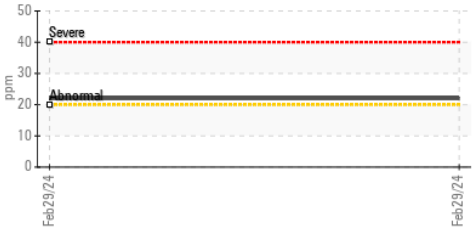


Lead (ppm)

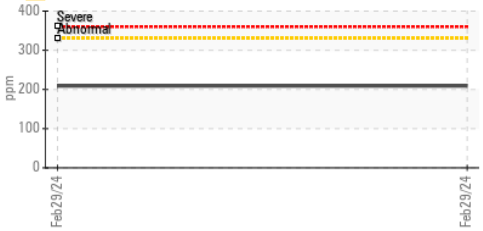


Aluminum (ppm)

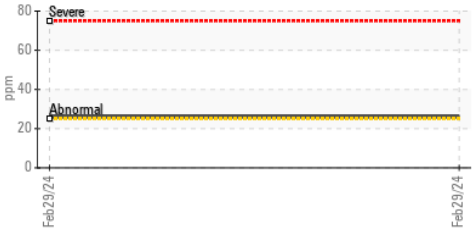
Chromium (ppm)



Copper (ppm)

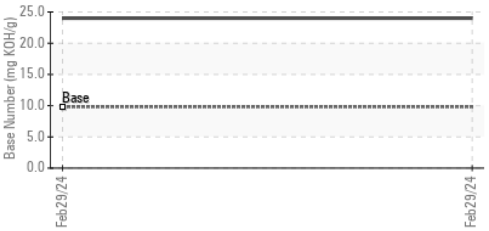


Silicon (ppm)



Viscosity @ 100°C

Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0086544
Lab Number : 06114793
Unique Number : 10923626
Test Package : MOB 1 (Additional Tests: Glycol, TBN)

Received : 11 Mar 2024
Tested : 13 Mar 2024
Diagnosed : 13 Mar 2024 - Jonathan Hester

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)

Kemp Quarries - Muskogee Sand
3395 W 50th St N
Porter, OK
US 74454
Contact:
muskogee@muskogeesand.com
T:
F:

Report Id: KEMPOR [WUSCAR] 06114793 (Generated: 03/13/2024 15:51:21) Rev: 1

Submitted By: