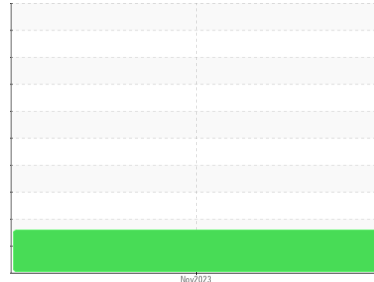


OIL ANALYSIS REPORT

Sample Rating Trend

WATER


Area
KEMP QUARRIES / RIVER VALLEY ARKOMA [68062]
 Machine Id
3215
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)



DIAGNOSIS

▲ Recommendation

We advise that you check for the source of water entry. Resample at the next service interval to monitor. (Customer Sample Comment: Changed filter only, troubleshooting Cummins 8.9l cng)

Wear

All component wear rates are normal.

▲ Contamination

There is a moderate concentration of water present 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	history1	history2
Sample Number	Client Info		PCA0084362	---	---
Sample Date	Client Info		10 Nov 2023	---	---
Machine Age	mls	Client Info	220158	---	---
Oil Age	mls	Client Info	3281	---	---
Oil Changed	Client Info		Not Changed	---	---
Sample Status			ABNORMAL	---	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	19	---	---
Chromium	ppm	ASTM D5185m >4	2	---	---
Nickel	ppm	ASTM D5185m >2	<1	---	---
Titanium	ppm	ASTM D5185m	<1	---	---
Silver	ppm	ASTM D5185m >3	0	---	---
Aluminum	ppm	ASTM D5185m >9	2	---	---
Lead	ppm	ASTM D5185m >30	1	---	---
Copper	ppm	ASTM D5185m >35	1	---	---
Tin	ppm	ASTM D5185m >4	<1	---	---
Vanadium	ppm	ASTM D5185m	0	---	---
Cadmium	ppm	ASTM D5185m	<1	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	2	---	---
Barium	ppm	ASTM D5185m 0	9	---	---
Molybdenum	ppm	ASTM D5185m 60	65	---	---
Manganese	ppm	ASTM D5185m 0	<1	---	---
Magnesium	ppm	ASTM D5185m 1010	954	---	---
Calcium	ppm	ASTM D5185m 1070	1112	---	---
Phosphorus	ppm	ASTM D5185m 1150	1046	---	---
Zinc	ppm	ASTM D5185m 1270	1237	---	---
Sulfur	ppm	ASTM D5185m 2060	3513	---	---

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >+100	9	---	---
Sodium	ppm	ASTM D5185m	<1	---	---
Potassium	ppm	ASTM D5185m >20	4	---	---
Water	%	ASTM D6304 >0.1	▲ 0.364	---	---
ppm Water	ppm	ASTM D6304 >1000	▲ 3640	---	---
Glycol	%	*ASTM D2982	0.0	---	---

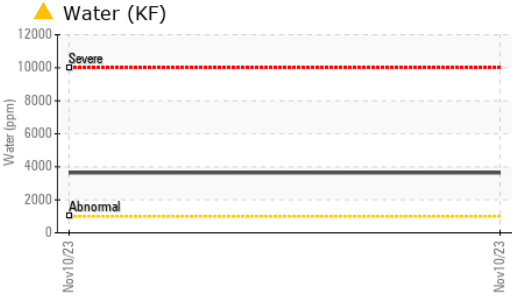
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	---	---
Nitration	Abs/cm	*ASTM D7624 >20	7.1	---	---
Sulfation	Abs/.1mm	*ASTM D7415 >30	18.0	---	---

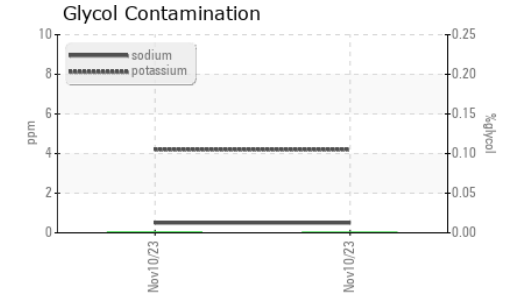
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	14.1	---	---
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	8.3	---	---

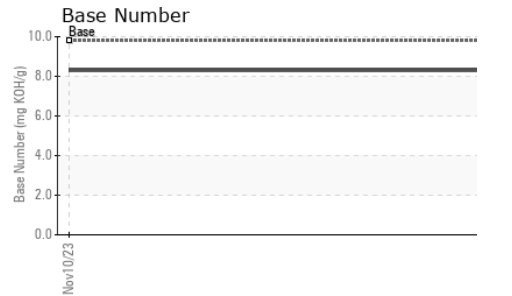
OIL ANALYSIS REPORT



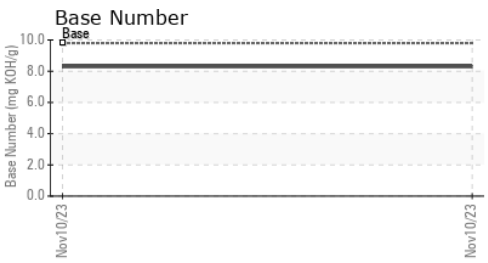
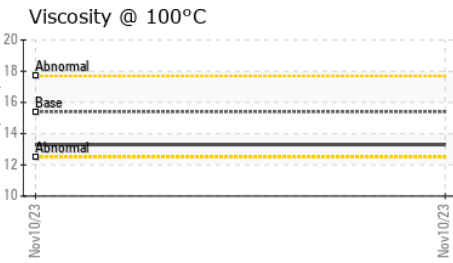
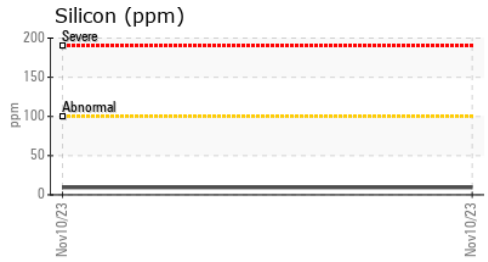
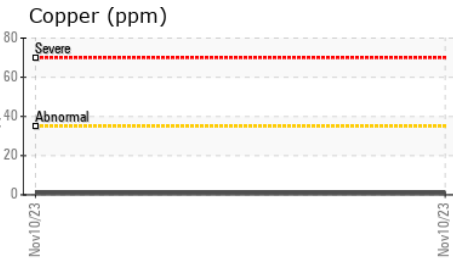
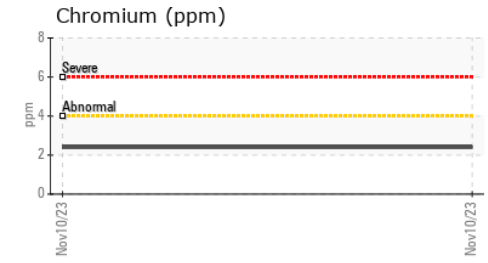
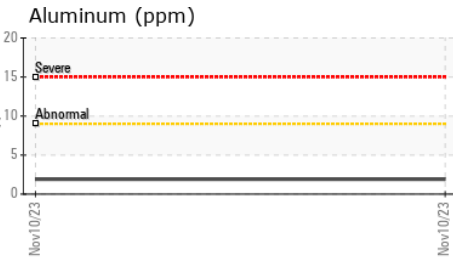
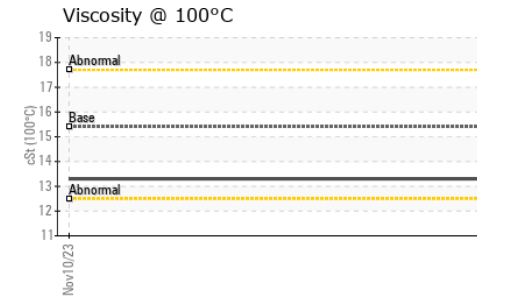
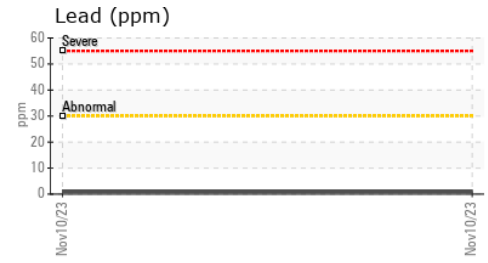
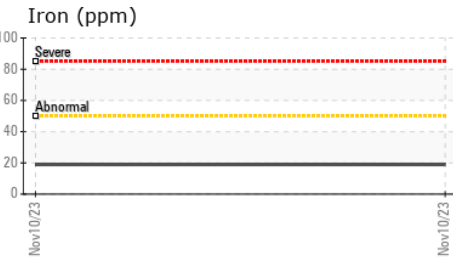
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	---
Free Water	scalar	*Visual		NEG	---



FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	---



GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0084362 **Received** : 20 Nov 2023
Lab Number : 06013229 **Diagnosed** : 24 Nov 2023
Unique Number : 10752373 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (Additional Tests: GLYCOL, KF, TBN)

Kemp Quarries - River Valley - Arkoma
 12971 HWY 9a
 Shawnee, OK
 US 74804
 Contact: ARKOMA NOTIFICATIONS
 arkoma@rivervalleymaterials.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)

T:
F: