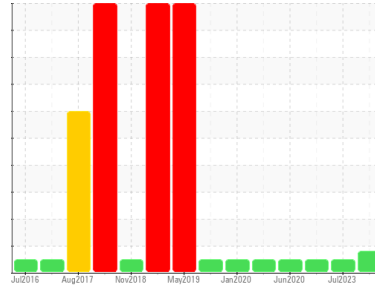


# OIL ANALYSIS REPORT



Area  
**KEMP QUARRIES / PRYOR STONE [67471]**  
Machine Id  
**OHT093**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON HP 15W40 (--- GAL)**

Sample Rating Trend



**WEAR**



## DIAGNOSIS

### ▲ Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. ( Customer Sample Comment: Pm4 performed. All oil samples taken. All oils, and all filters changed. )

### ▲ Wear

The copper level is abnormal. Elemental level of copper (Cu) probably due to leaching of copper from copper components (i.e. cooling core) by the oil additives. All other component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>PCA0084391</b>	PCA0084041	PCA0019811
Sample Date	Client Info	<b>05 Dec 2023</b>	25 Jul 2023	03 Nov 2020
Machine Age	hrs	<b>16093</b>	15337	15191
Oil Age	hrs	<b>756</b>	0	604
Oil Changed	Client Info	<b>Changed</b>	Changed	Changed
Sample Status		<b>ABNORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method >0.2	<b>NEG</b>	NEG	NEG

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	<b>62</b>	16	39
Chromium	ppm ASTM D5185m >20	<b>1</b>	<1	1
Nickel	ppm ASTM D5185m >2	<b>2</b>	<1	<1
Titanium	ppm ASTM D5185m >2	<b>0</b>	<1	<1
Silver	ppm ASTM D5185m >2	<b>0</b>	0	<1
Aluminum	ppm ASTM D5185m >25	<b>2</b>	2	0
Lead	ppm ASTM D5185m >40	<b>3</b>	2	7
Copper	ppm ASTM D5185m >330	<b>▲ 658</b>	6	5
Tin	ppm ASTM D5185m >15	<b>3</b>	1	<1
Antimony	ppm ASTM D5185m	<b>---</b>	---	0
Vanadium	ppm ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	<b>3</b>	0	6
Barium	ppm ASTM D5185m	<b>&lt;1</b>	<1	0
Molybdenum	ppm ASTM D5185m	<b>68</b>	57	54
Manganese	ppm ASTM D5185m	<b>&lt;1</b>	<1	<1
Magnesium	ppm ASTM D5185m	<b>1001</b>	896	790
Calcium	ppm ASTM D5185m	<b>1111</b>	1030	1444
Phosphorus	ppm ASTM D5185m	<b>1117</b>	980	1023
Zinc	ppm ASTM D5185m	<b>1334</b>	1156	1225
Sulfur	ppm ASTM D5185m	<b>2852</b>	3155	2551

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	<b>15</b>	19	6
Sodium	ppm ASTM D5185m	<b>3</b>	4	7
Potassium	ppm ASTM D5185m >20	<b>2</b>	2	5
Glycol	% *ASTM D2982	<b>NEG</b>	NEG	NEG

## INFRA-RED

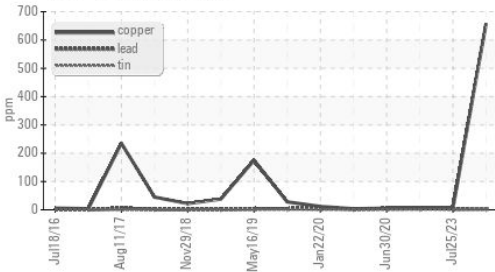
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	<b>0.5</b>	0.1	0.8
Nitration	Abs/cm *ASTM D7624 >20	<b>10.3</b>	4.8	10.7
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>21.8</b>	17.1	23.8

## FLUID DEGRADATION

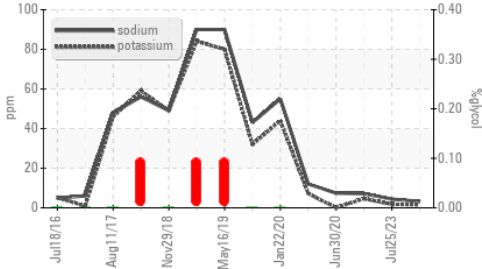
method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>21.5</b>	13.0	20.7
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>8.4</b>	9.1	---

# OIL ANALYSIS REPORT

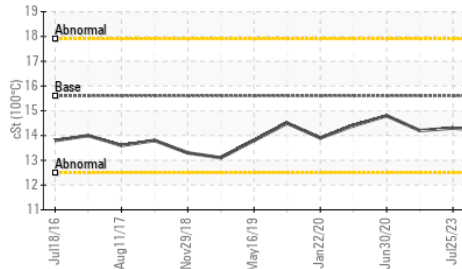
**▲ Non-ferrous Metals**



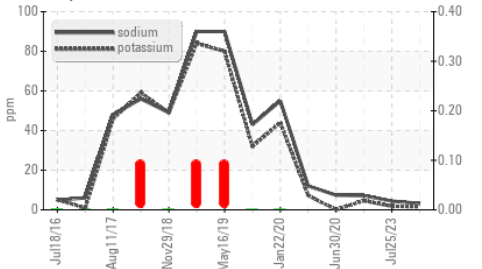
**Glycol Contamination**



**Viscosity @ 100°C**



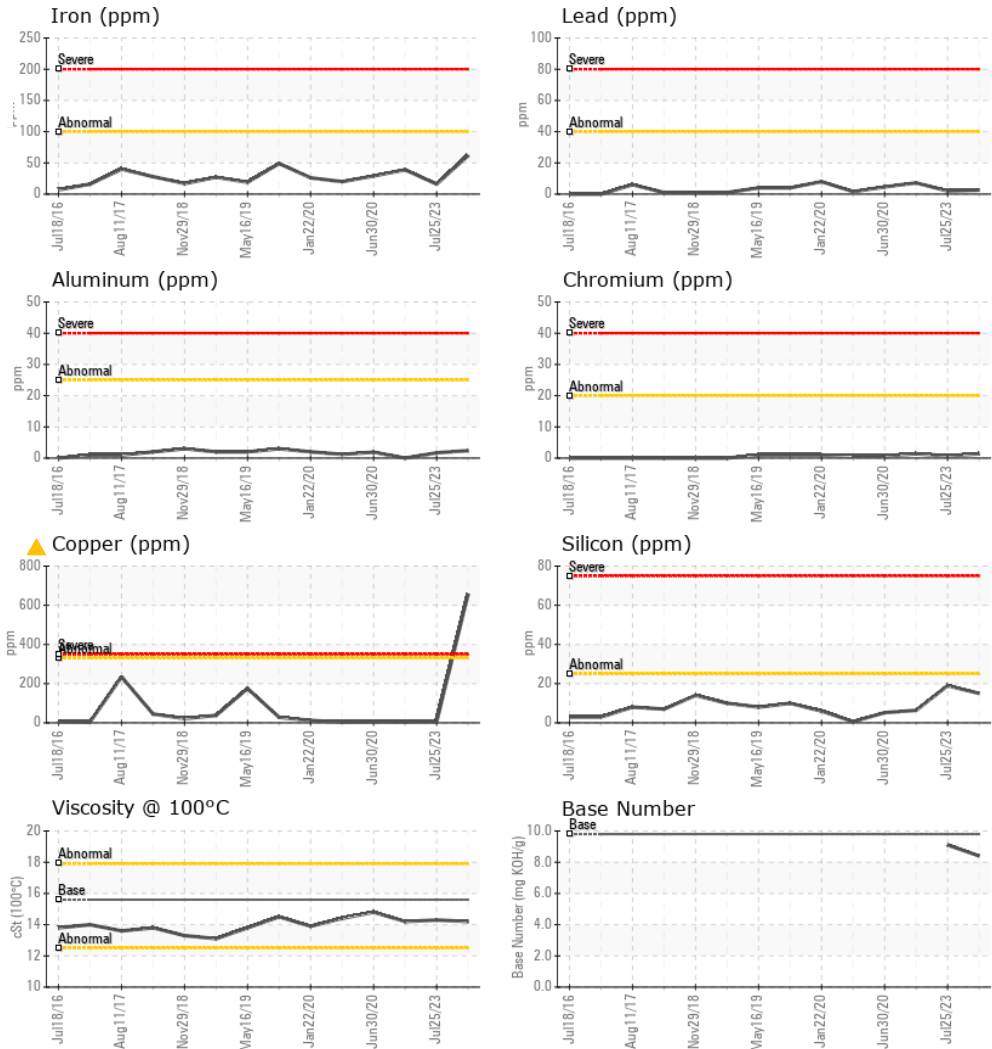
**Glycol Contamination**



PARAMETER	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	15.6	14.2	14.3

**GRAPHS**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0084391 **Received** : 18 Dec 2023  
**Lab Number** : 06038491 **Diagnosed** : 20 Dec 2023  
**Unique Number** : 10793720 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: Glycol, TBN )

**Kemp Quarries - Pryor Stone - Pryor**  
 1050 E 520 Rd  
 Pryor, OK  
 US 74361  
 Contact:  
 pryor@pryorstone.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)