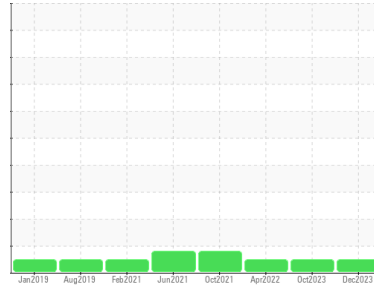


# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**


Area  
**KEMP QUARRIES / MUSKOGEE SAND**  
 Machine Id  
**OHT101**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**



## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: 50 Hour service after rebuild )

### Wear

Metal levels are typical for a new component breaking in.

### 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 suitable for further service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>PCA0085641</b>	PCA0084712	PCA0062662
Sample Date	Client Info		<b>21 Dec 2023</b>	19 Oct 2023	05 Apr 2022
Machine Age	hrs	Client Info	<b>17325</b>	17273	16935
Oil Age	hrs	Client Info	<b>52</b>	17273	553
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>NORMAL</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
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >86	<b>35</b>	19	28
Chromium	ppm	ASTM D5185m >3	<b>7</b>	4	<1
Nickel	ppm	ASTM D5185m >3	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m >2	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m >2	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m >15	<b>2</b>	1	1
Lead	ppm	ASTM D5185m >16	<b>3</b>	3	17
Copper	ppm	ASTM D5185m >250	<b>6</b>	7	22
Tin	ppm	ASTM D5185m >2	<b>2</b>	<1	1
Antimony	ppm	ASTM D5185m	<b>---</b>	---	---
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 0	<b>3</b>	3	7
Barium	ppm	ASTM D5185m 0	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m 60	<b>56</b>	53	62
Manganese	ppm	ASTM D5185m 0	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m 1010	<b>928</b>	858	1059
Calcium	ppm	ASTM D5185m 1070	<b>1010</b>	934	1186
Phosphorus	ppm	ASTM D5185m 1150	<b>1051</b>	966	1111
Zinc	ppm	ASTM D5185m 1270	<b>1230</b>	1134	1336
Sulfur	ppm	ASTM D5185m 2060	<b>3052</b>	2879	2900

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >35	<b>26</b>	23	3
Sodium	ppm	ASTM D5185m	<b>3</b>	6	6
Potassium	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	3

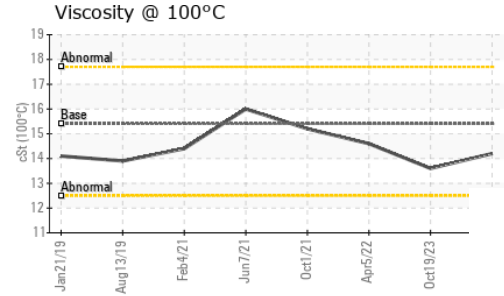
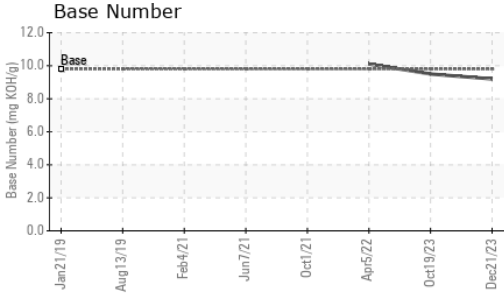
## INFRA-RED

	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>5.5</b>	4.5	9.3
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>18.4</b>	17.2	22.7

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>13.5</b>	13.1	18.5
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>9.2</b>	9.5	10.1

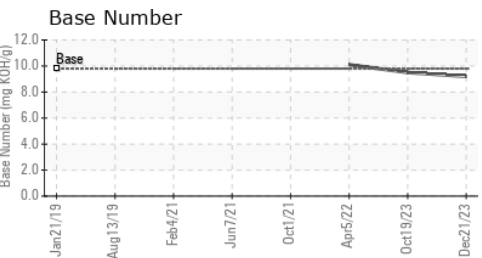
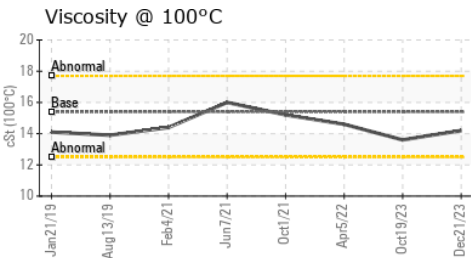
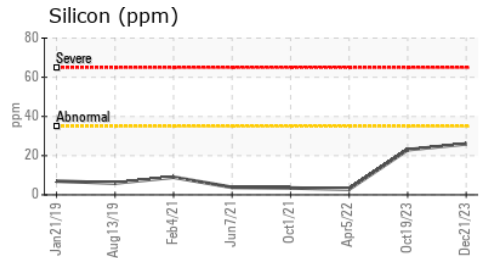
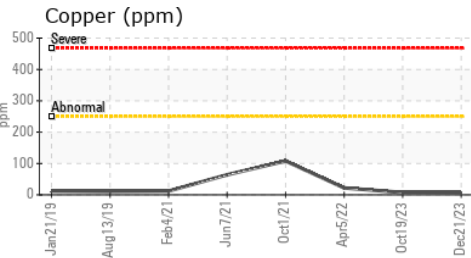
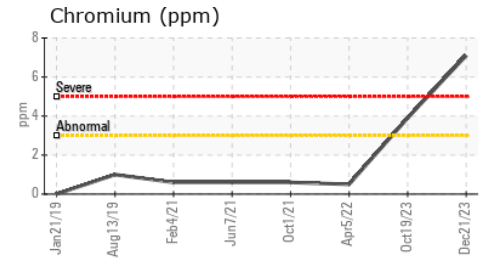
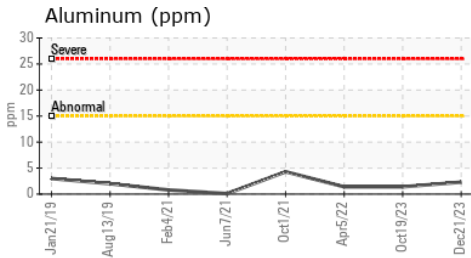
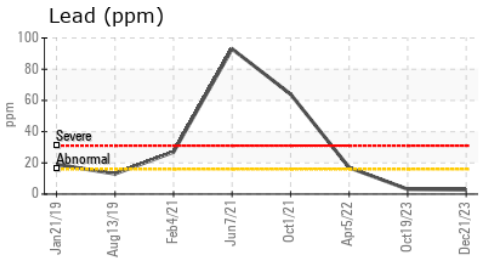
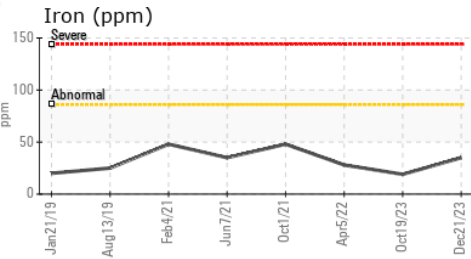
# OIL ANALYSIS REPORT



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	15.4	<b>14.2</b>	13.6	14.6

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0085641 **Recieved** : 30 Jan 2024  
**Lab Number** : **06073639** **Diagnosed** : 31 Jan 2024  
**Unique Number** : 10850316 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**Kemp Quarries - Muskogee Sand**  
 3395 W 50th St N  
 Porter, OK  
 US 74454  
 Contact:

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)

muskogee@muskogeessand.com

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F: