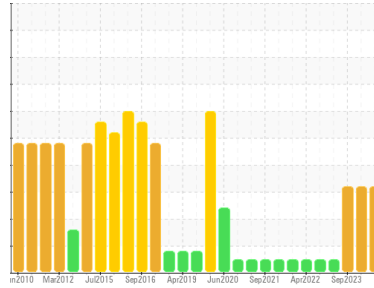


# OIL ANALYSIS REPORT



Area  
**KEMP QUARRIES / MUSKOGEE SAND [68772]**  
Machine Id  
**WLO39**  
Component  
**Hydraulic System**  
Fluid  
**PETRO CANADA HYDREX AW 68 (--- GAL)**

Sample Rating Trend



**DIRT**



## DIAGNOSIS

### ▲ Recommendation

We advise that you check all areas where dirt can enter the system. Resample at the next service interval to monitor. ( Customer Sample Comment: PM-3 sampled fluid )

### ▲ Wear

The chromium level is abnormal. All other component wear rates are normal.

### ▲ Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

### Fluid Condition

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>PCA0108984</b>	PCA0070660	PCA0086425
Sample Date	Client Info		<b>13 Mar 2024</b>	05 Dec 2023	12 Sep 2023
Machine Age	hrs	Client Info	<b>60751</b>	60261	59740
Oil Age	hrs	Client Info	<b>60751</b>	60261	59740
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.1	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >20	<b>16</b>	14	12
Chromium	ppm	ASTM D5185m >10	<b>▲ 16</b>	▲ 21	▲ 25
Nickel	ppm	ASTM D5185m >10	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >10	<b>● 5</b>	● 4	● 8
Lead	ppm	ASTM D5185m >10	<b>1</b>	0	<1
Copper	ppm	ASTM D5185m >75	<b>5</b>	5	5
Tin	ppm	ASTM D5185m >10	<b>1</b>	0	<1
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>&lt;1</b>	0	0
Barium	ppm	ASTM D5185m 0	<b>1</b>	0	0
Molybdenum	ppm	ASTM D5185m 0	<b>1</b>	0	<1
Manganese	ppm	ASTM D5185m 0	<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185m 0	<b>6</b>	3	4
Calcium	ppm	ASTM D5185m 50	<b>79</b>	62	72
Phosphorus	ppm	ASTM D5185m 330	<b>390</b>	327	343
Zinc	ppm	ASTM D5185m 430	<b>455</b>	442	462
Sulfur	ppm	ASTM D5185m 760	<b>1083</b>	979	980

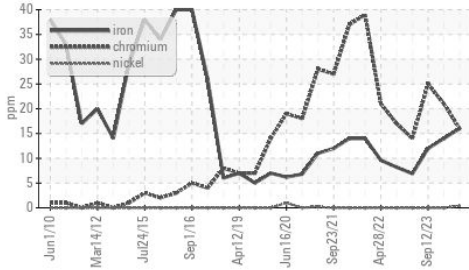
## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	<b>▲ 23</b>	▲ 27	▲ 24
Sodium	ppm	ASTM D5185m	<b>0</b>	0	0
Potassium	ppm	ASTM D5185m >20	<b>4</b>	3	2

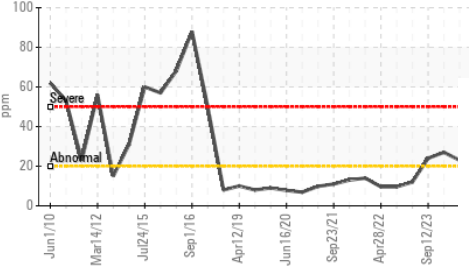
## VISUAL

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

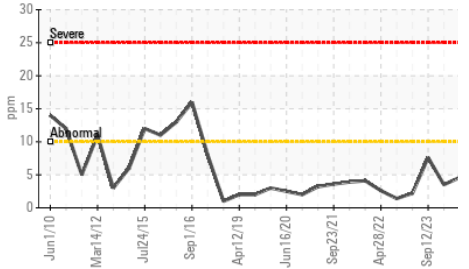
### ▲ Ferrous Alloys



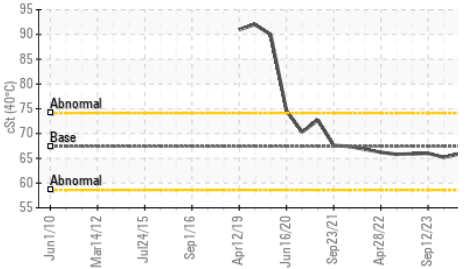
### ▲ Silicon (ppm)



### ● Aluminum (ppm)



### Viscosity @ 40°C



### FLUID PROPERTIES

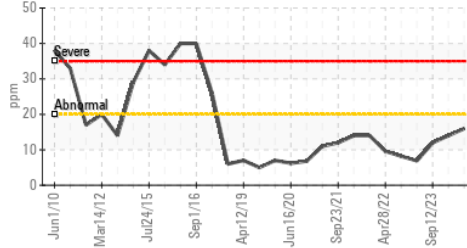
method	limit/base	current	history1	history2	
Visc @ 40°C	cSt ASTM D445	67.4	<b>65.9</b>	65.2	66.0

### SAMPLE IMAGES

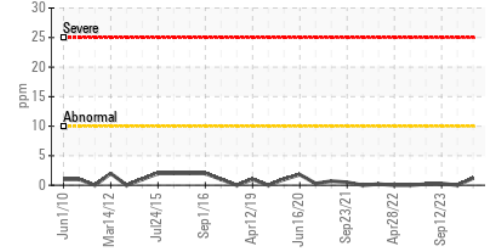
method	limit/base	current	history1	history2	
Color			no image	no image	no image
Bottom			no image	no image	no image

### GRAPHS

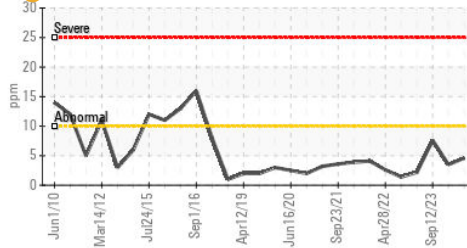
#### Iron (ppm)



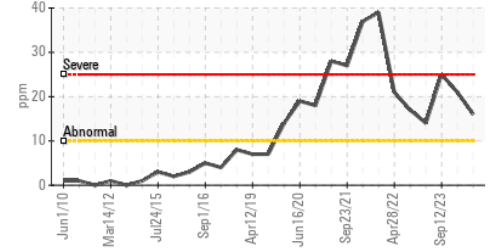
#### Lead (ppm)



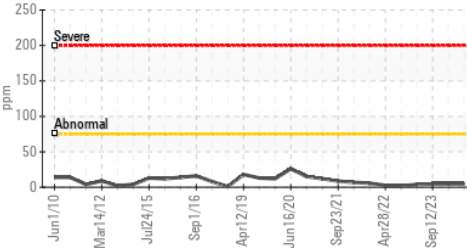
#### Aluminum (ppm)



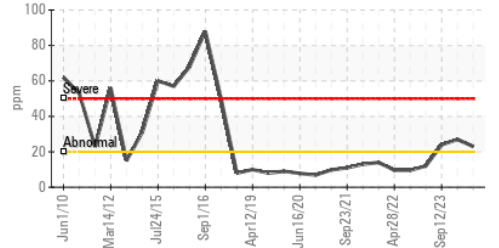
#### ▲ Chromium (ppm)



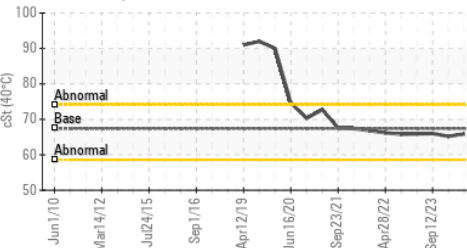
#### Copper (ppm)



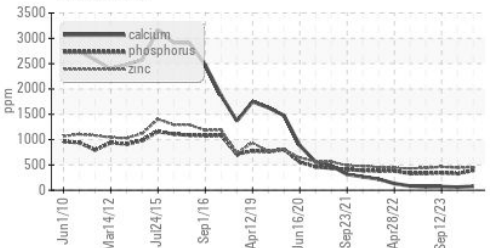
#### ▲ Silicon (ppm)



#### Viscosity @ 40°C



#### Additives



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : PCA0108984

**Lab Number** : 06128305

**Unique Number** : 10942456

**Test Package** : MOB 1

**Received** : 25 Mar 2024

**Tested** : 26 Mar 2024

**Diagnosed** : 28 Mar 2024 - Jonathan Hester

**Kemp Quarries - Muskogee Sand**

3395 W 50th St N

Porter, OK

US 74454

Contact:

muskogee@muskogeessand.com

T:

F:

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)