

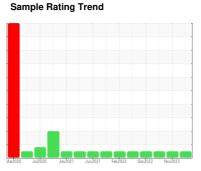
# **OIL ANALYSIS REPORT**



# KEMP QUARRIES / HULBERT **WL136**

Component
Rear Differential

PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)





### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

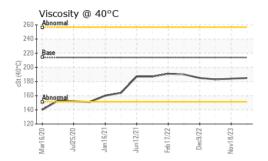
### **Fluid Condition**

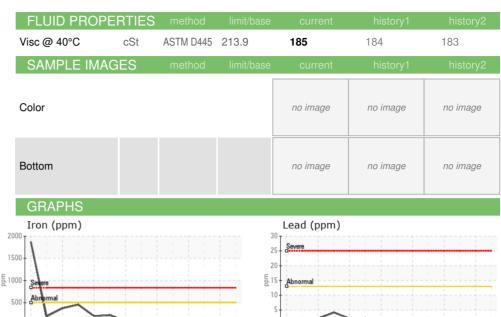
The condition of the oil is acceptable for the time in service.

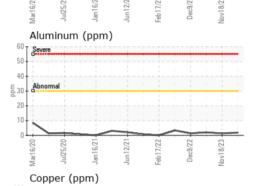
- (		WHE 2020 OF	12020 Jan2021 Jun	2021 Feb2022 Dec2022 I	Nov2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0086095	PCA0109253	PCA0086136
Sample Date		Client Info		10 Feb 2024	18 Nov 2023	18 Feb 2023
Machine Age	hrs	Client Info		32742	32316	30776
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	mathad	limit/base			
	ION	method	limit/base	current	history1	history2
Water		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	49	59	50
Chromium	ppm	ASTM D5185m	>3	<1	0	<1
Nickel	ppm	ASTM D5185m	>3	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		2	1	2
Lead	ppm	ASTM D5185m	>13	0	0	0
		ASTM D5185m		18	18	9
Copper	ppm			-		
Tin	ppm	ASTM D5185m	>5	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	4	4	4
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	0	1	2	2
Manganese	ppm	ASTM D5185m	0	0	0	<1
•		ASTM D5185m ASTM D5185m	9	0 21	0 22	<1 24
Manganese Magnesium Calcium	ppm	ASTM D5185m	9	21		
Magnesium Calcium	ppm	ASTM D5185m ASTM D5185m	9 3114	21 2772	22 3070	24 3027
Magnesium Calcium Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	9 3114 1099	21 2772 1059	22 3070 1060	24 3027 949
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	9 3114 1099 1245	21 2772 1059 1257	22 3070 1060 1222	24 3027 949 1205
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	9 3114 1099 1245 7086	21 2772 1059 1257 5860	22 3070 1060 1222 5531	24 3027 949 1205 6299
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	9 3114 1099 1245 7086	21 2772 1059 1257 5860	22 3070 1060 1222 5531 history1	24 3027 949 1205 6299 history2
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	9 3114 1099 1245 7086	21 2772 1059 1257 5860	22 3070 1060 1222 5531	24 3027 949 1205 6299
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	9 3114 1099 1245 7086	21 2772 1059 1257 5860	22 3070 1060 1222 5531 history1	24 3027 949 1205 6299 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	9 3114 1099 1245 7086	21 2772 1059 1257 5860 current	22 3070 1060 1222 5531 history1	24 3027 949 1205 6299 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	9 3114 1099 1245 7086 limit/base >100	21 2772 1059 1257 5860 current 13	22 3070 1060 1222 5531 history1 15	24 3027 949 1205 6299 history2 13
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m MSTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	9 3114 1099 1245 7086 limit/base >100 >20	21 2772 1059 1257 5860 current 13 0	22 3070 1060 1222 5531 history1 15 0	24 3027 949 1205 6299 history2 13 1
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL	ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m	9 3114 1099 1245 7086 limit/base >100 >20 limit/base	21 2772 1059 1257 5860 current 13 0	22 3070 1060 1222 5531 history1 15 0 2	24 3027 949 1205 6299 history2 13 1 0
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method  *Visual	9 3114 1099 1245 7086 limit/base >100 >20 limit/base NONE	21 2772 1059 1257 5860 current 13 0 1	22 3070 1060 1222 5531 history1 15 0 2 history1 MODER	24 3027 949 1205 6299 history2 13 1 0 history2 MODER
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method  *Visual	9 3114 1099 1245 7086 limit/base >100 >20 limit/base NONE NONE NONE	21 2772 1059 1257 5860 current 13 0 1 current NONE NONE	22 3070 1060 1222 5531 history1 15 0 2 history1 MODER NONE	24 3027 949 1205 6299 history2 13 1 0 history2 MODER NONE
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  *Visual *Visual *Visual *Visual	9 3114 1099 1245 7086 limit/base >100 >20 limit/base NONE NONE NONE	21 2772 1059 1257 5860 current 13 0 1 current NONE NONE NONE NONE	22 3070 1060 1222 5531 history1 15 0 2 history1 MODER NONE NONE	24 3027 949 1205 6299 history2 13 1 0 history2 MODER NONE NONE
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  *Visual *Visual *Visual *Visual *Visual *Visual	9 3114 1099 1245 7086 limit/base >100 >20 limit/base NONE NONE NONE NONE NONE NONE	21 2772 1059 1257 5860  current 13 0 1  current NONE NONE NONE NONE NONE NONE	22 3070 1060 1222 5531 history1 15 0 2 history1 MODER NONE NONE NONE	24 3027 949 1205 6299 history2 13 1 0 history2 MODER NONE NONE NONE
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm ppm ppm ppm ppm ppm ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  ASTM U5185m ASTM U518	9 3114 1099 1245 7086 limit/base >100 >20 limit/base NONE NONE NONE NONE NONE NONE NONE NON	21 2772 1059 1257 5860 current 13 0 1 current NONE NONE NONE NONE NONE NONE NONE NON	22 3070 1060 1222 5531 history1 15 0 2 history1 MODER NONE NONE NONE	24 3027 949 1205 6299 history2 13 1 0 history2 MODER NONE NONE NONE NONE
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm	ASTM D5185m  *Visual	9 3114 1099 1245 7086 limit/base >100 >20 limit/base NONE NONE NONE NONE NONE NONE NONE NON	21 2772 1059 1257 5860 current 13 0 1 current NONE NONE NONE NONE NONE NONE NONE NON	22 3070 1060 1222 5531 history1 15 0 2 history1 MODER NONE NONE NONE NONE NONE	24 3027 949 1205 6299 history2 13 1 0 history2 MODER NONE NONE NONE NONE NONE NONE NONE
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM U5185m  Method  *Visual	9 3114 1099 1245 7086 limit/base >100 >20 limit/base NONE NONE NONE NONE NONE NONE NONE NON	21 2772 1059 1257 5860  current 13 0 1  current NONE NONE NONE NONE NONE NONE NONE NON	22 3070 1060 1222 5531 history1 15 0 2 history1 MODER NONE NONE NONE NONE NONE NONE NONE NO	24 3027 949 1205 6299 history2 13 1 0 history2 MODER NONE NONE NONE NONE NONE NONE NONE NO
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm	ASTM D5185m  *Visual	9 3114 1099 1245 7086 limit/base >100 >20 limit/base NONE NONE NONE NONE NONE NONE NONE NON	21 2772 1059 1257 5860 current 13 0 1 current NONE NONE NONE NONE NONE NONE NONE NON	22 3070 1060 1222 5531 history1 15 0 2 history1 MODER NONE NONE NONE NONE NONE	24 3027 949 1205 6299 history2 13 1 0 history2 MODER NONE NONE NONE NONE NONE NONE NONE

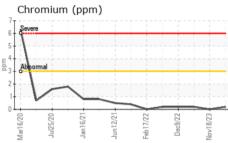


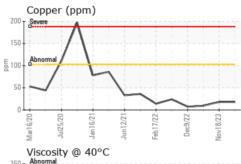
## **OIL ANALYSIS REPORT**

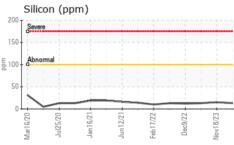


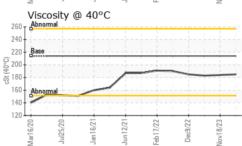


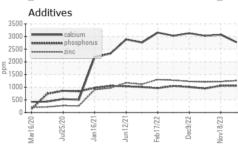














Certificate L2367

Laboratory Sample No. Lab Number : 06108317

Test Package : MOB 1

: PCA0086095 Unique Number: 10911814

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 04 Mar 2024 **Tested** 

Diagnosed

: 05 Mar 2024 : 05 Mar 2024 - Wes Davis

Kemp Quarries - Kemp Stone - Hulbert

17801 Hwy 80 Hulbert, OK US 74441

Contact:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

hulbert@kempstone.com

\* - 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)

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