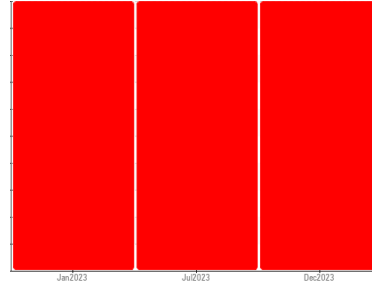


Area
KEMP QUARRIES / HULBERT [66668]
Machine Id
TTH036
Component
Left Final Drive
Fluid
PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)



DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. (Customer Sample Comment: PM-2 sampled fluid)

Wear

The iron level is severe. Gear wear is indicated.

Contamination

There is a moderate concentration of water present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PCA0109286	PCA0086293	PCA0086721
Sample Date	Client Info		02 Dec 2023	06 Jul 2023	30 Jan 2023
Machine Age	hrs	Client Info	7525	6499	6499
Oil Age	hrs	Client Info	7525	6958	0
Oil Changed	Client Info		N/A	N/A	Changed
Sample Status			SEVERE	SEVERE	SEVERE

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >500	12279	5087	14265
Chromium	ppm	ASTM D5185m >10	95	37	116
Nickel	ppm	ASTM D5185m >10	13	4	17
Titanium	ppm	ASTM D5185m	67	30	93
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	662	334	907
Lead	ppm	ASTM D5185m >25	1	<1	2
Copper	ppm	ASTM D5185m >50	29	10	35
Tin	ppm	ASTM D5185m >10	0	<1	0
Vanadium	ppm	ASTM D5185m	2	1	3
Cadmium	ppm	ASTM D5185m	0	<1	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 2	11	0	11
Barium	ppm	ASTM D5185m 0	0	<1	3
Molybdenum	ppm	ASTM D5185m 0	12	5	14
Manganese	ppm	ASTM D5185m 0	92	40	116
Magnesium	ppm	ASTM D5185m 9	88	55	115
Calcium	ppm	ASTM D5185m 3114	2387	2512	885
Phosphorus	ppm	ASTM D5185m 1099	751	943	321
Zinc	ppm	ASTM D5185m 1245	710	984	45
Sulfur	ppm	ASTM D5185m 7086	36191	21973	63908

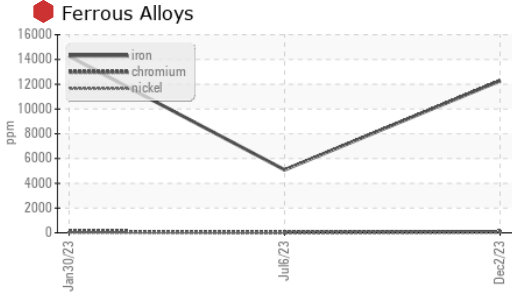
CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >75	4043	1667	5104
Sodium	ppm	ASTM D5185m	16	10	25
Potassium	ppm	ASTM D5185m >20	174	84	264
Water	%	ASTM D6304 >0.2	0.412	0.385	0.625
ppm Water	ppm	ASTM D6304 >2000	4120	3850	6250

VISUAL

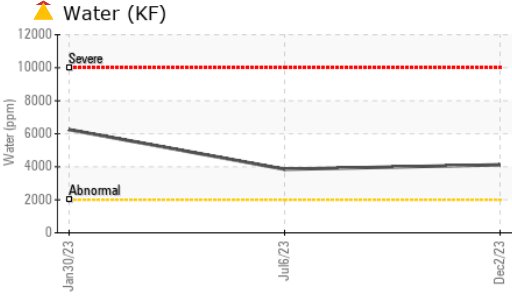
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual NONE	NONE	NONE	NONE
Silt	scalar	*Visual NONE	NONE	NONE	NONE
Debris	scalar	*Visual NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual NONE	NONE	NONE	NONE
Appearance	scalar	*Visual NORML	NORML	NORML	NORML
Odor	scalar	*Visual NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual >0.2	0.2%	0.2%	0.2%
Free Water	scalar	*Visual	NEG	NEG	NEG

OIL ANALYSIS REPORT

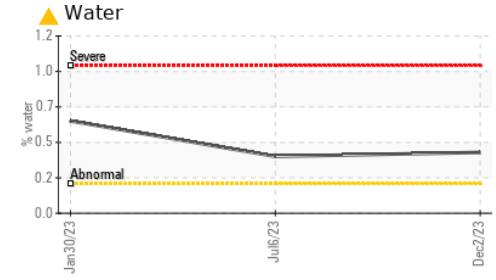
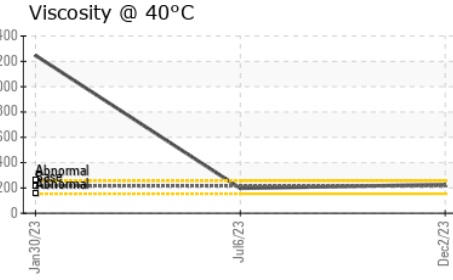
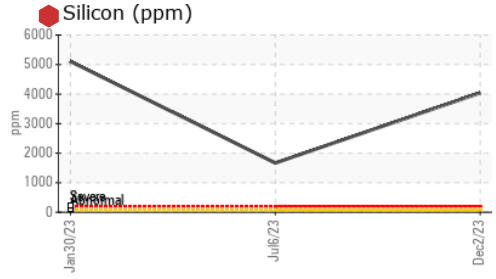
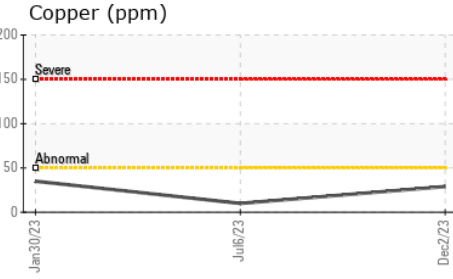
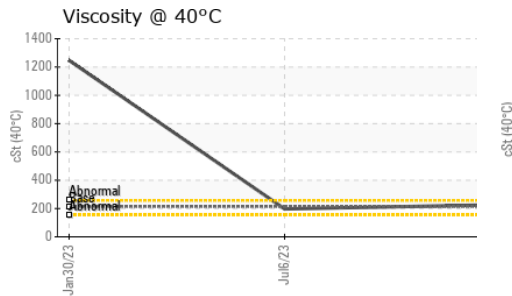
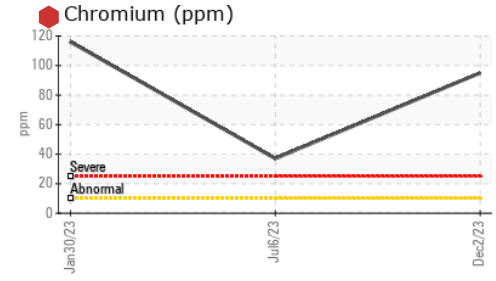
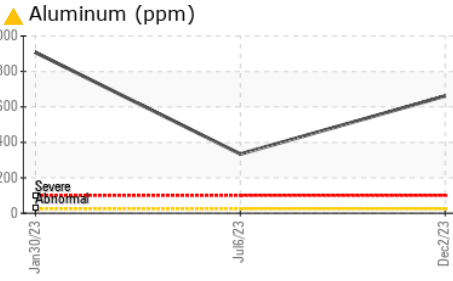
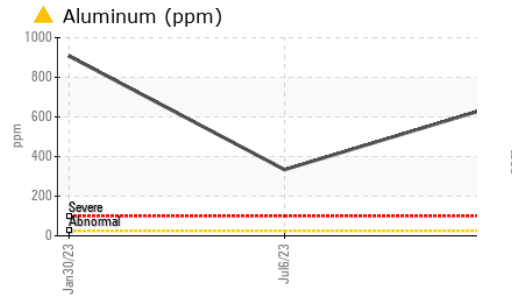
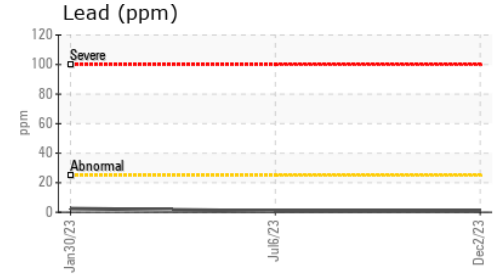
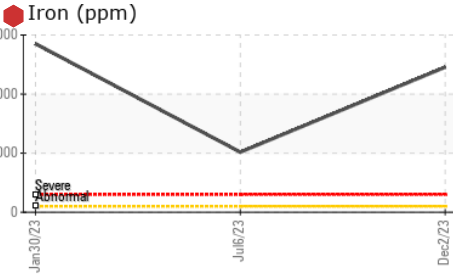
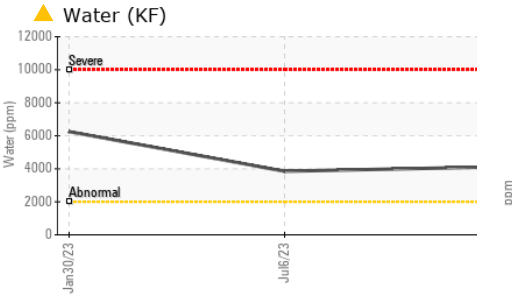


FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	213.9	227	197	▲ 1247

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0109286 **Received** : 13 Dec 2023
Lab Number : 06034202 **Diagnosed** : 18 Dec 2023
Unique Number : 10789431 **Diagnostician** : Sean Felton
Test Package : MOB 1 (Additional Tests: KF)

Kemp Quarries - Kemp Stone - Hulbert
 17801 Hwy 80
 Hulbert, OK
 US 74441
 Contact:
 hulbert@kempstone.com
 T:
 F:

Certificate L2367
 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)