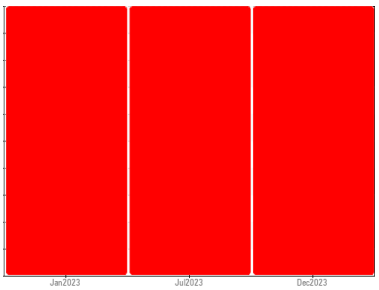
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

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

DIAGNOSIS

Recommendation

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 light 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		**PCA0109287**	PCA0086294	PCA0086722
Sample Date		Client Info		**02 Dec 2023**	06 Jul 2023	30 Jan 2023
Machine Age	hrs	Client Info		**7525**	6958	6499
Oil Age	hrs	Client Info		**7572**	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	**6992**	10000	17746
Chromium	ppm	ASTM D5185m	>10	**51**	84	152
Nickel	ppm	ASTM D5185m	>10	**6**	8	22
Titanium	ppm	ASTM D5185m		**39**	61	112
Silver	ppm	ASTM D5185m		**0**	1	0
Aluminum	ppm	ASTM D5185m	>25	**436**	561	917
Lead	ppm	ASTM D5185m	>25	**<1**	2	2
Copper	ppm	ASTM D5185m	>50	**15**	23	46
Tin	ppm	ASTM D5185m	>10	**0**	1	0
Vanadium	ppm	ASTM D5185m		**<1**	2	4
Cadmium	ppm	ASTM D5185m		**0**	2	1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**6**	<1	15
Barium	ppm	ASTM D5185m	0	**0**	3	3
Molybdenum	ppm	ASTM D5185m	0	**6**	12	19
Manganese	ppm	ASTM D5185m	0	**56**	79	136
Magnesium	ppm	ASTM D5185m	9	**64**	92	127
Calcium	ppm	ASTM D5185m	3114	**2997**	2247	961
Phosphorus	ppm	ASTM D5185m	1099	**1044**	796	313
Zinc	ppm	ASTM D5185m	1245	**1096**	736	45
Sulfur	ppm	ASTM D5185m	7086	**31601**	32218	52796

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>75	**2191**	3628	6737
Sodium	ppm	ASTM D5185m		**8**	18	32
Potassium	ppm	ASTM D5185m	>20	**113**	154	282
Water	%	ASTM D6304	>0.2	**0.286**	---	0.777
ppm Water	ppm	ASTM D6304	>2000	**2860**	---	7770

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%**	NEG	0.2%
Free Water	scalar	*Visual		**NEG**	NEG	NEG

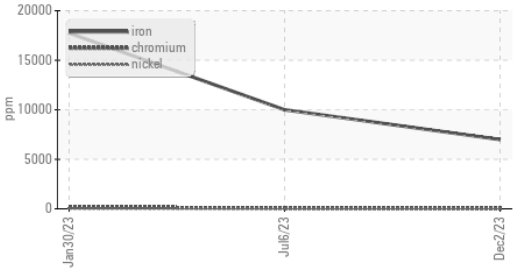
OIL ANALYSIS REPORT

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	213.9	**197**	216	▲ 23.9

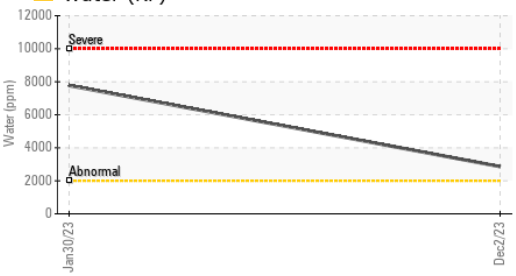
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color			*no image*	*no image*	*no image*
Bottom			*no image*	*no image*	*no image*

GRAPHS

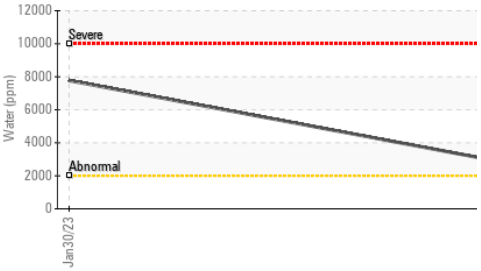
Ferrous Alloys



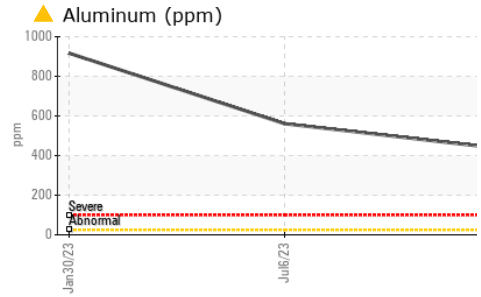
Water (KF)



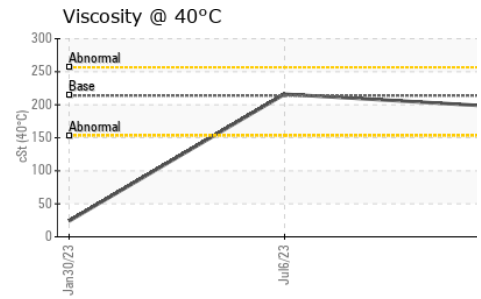
Water (KF)



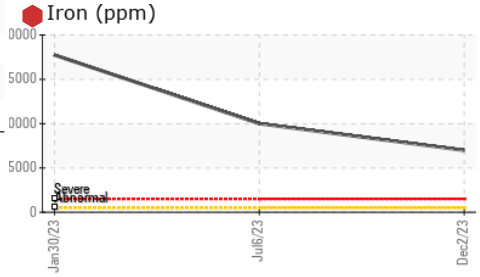
Aluminum (ppm)



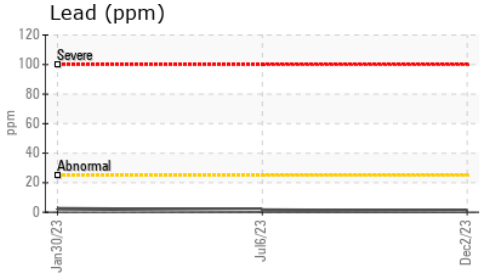
Viscosity @ 40°C



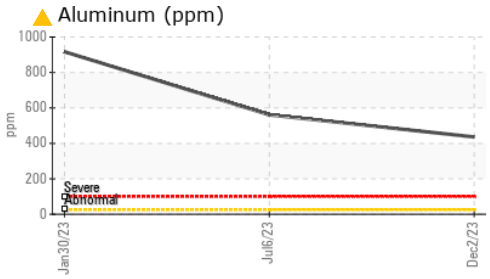
Iron (ppm)



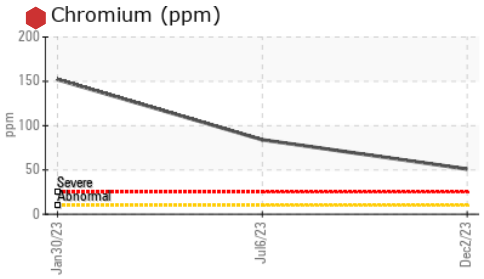
Lead (ppm)



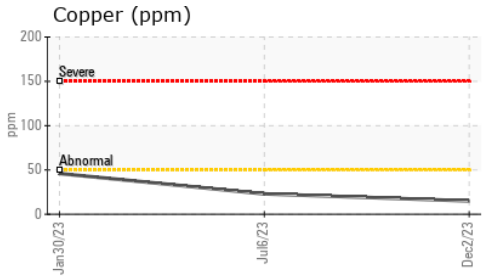
Aluminum (ppm)



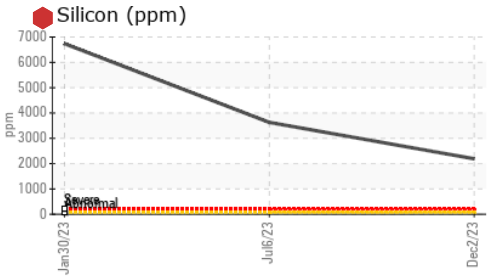
Chromium (ppm)



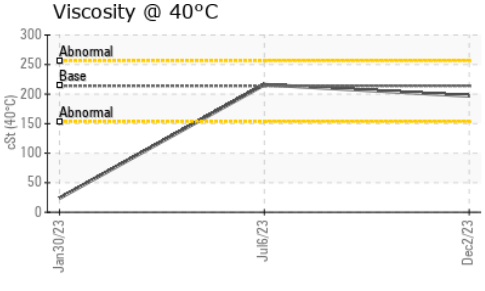
Copper (ppm)



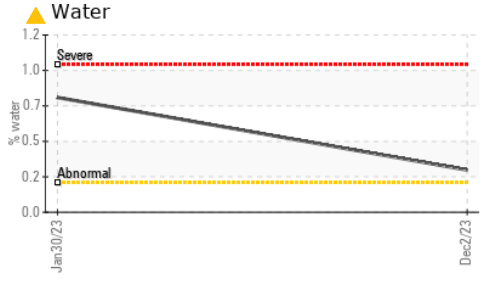
Silicon (ppm)



Viscosity @ 40°C



Water



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0109287 **Recieved** : 13 Dec 2023
Lab Number : 06034203 **Diagnosed** : 18 Dec 2023
Unique Number : 10789432 **Diagnostician** : Sean Felton
Test Package : MOB 1 (Additional Tests: KF)

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)

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