

PROBLEM SUMMARY

Sample Rating Trend

OFF SPEC



Machine Id
1621-5521-6003

Component
Gearbox
Fluid

PETRO CANADA ENDURATEX EP 220 (--- GAL)

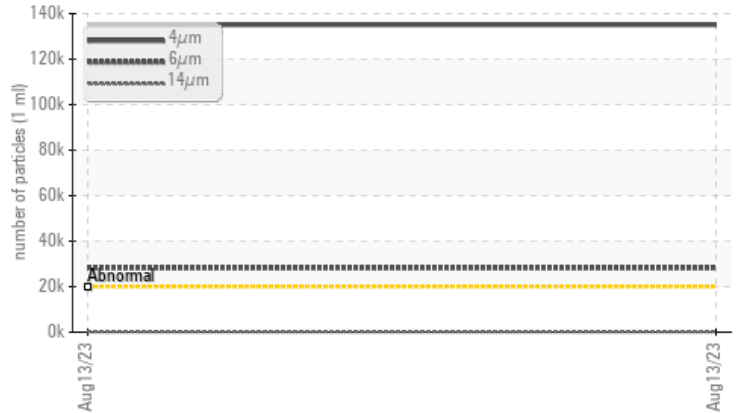


COMPONENT CONDITION SUMMARY

▲ Viscosity @ 100°C



▲ Particle Trend



RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	---	---
Lithium	ppm	ASTM D5185(m)		▲ 9	---	---
Particles >4µm		ASTM D7647	>20000	▲ 135062	---	---
Particles >6µm		ASTM D7647	>5000	▲ 28227	---	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ 24/22/15	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	19.35	▲ 27.4	---	---
Viscosity Index (VI)	Scale	ASTM D2270*	99	▲ 155	---	---

Customer Id: INCVOS
Sample No.: PC0070131
Lab Number: 02578546
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.
Check Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.
Filter Fluid	---	---	?	We recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type.

HISTORICAL DIAGNOSIS



Machine Id
1621-5521-6003

Component
Gearbox

Fluid
PETRO CANADA ENDURATEX EP 220 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check all areas where contaminants can enter the system. We recommend either performing an oil change or oil filtration. We cannot recommend specific action as we have limited information with regards to reservoir capacity and/or lubricant type. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal.

Contamination

Lithium (Li) level abnormal at 9ppm., indicates possible grease contamination. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

The viscosity of the oil is higher than normal, possibly indicating the addition of a heavier grade of oil. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION	method	limit/base	current	history1	history2
Sample Number	Client Info		PC0070131	---	---
Sample Date	Client Info		13 Aug 2023	---	---
Machine Age	hrs	Client Info	0	---	---
Oil Age	hrs	Client Info	0	---	---
Oil Changed	Client Info		N/A	---	---
Sample Status			ABNORMAL	---	---

WEAR METALS	method	limit/base	current	history1	history2
PQ	ASTM D8184*		0	---	---
Iron	ppm	ASTM D5185(m) >200	6	---	---
Chromium	ppm	ASTM D5185(m) >15	0	---	---
Nickel	ppm	ASTM D5185(m) >15	<1	---	---
Titanium	ppm	ASTM D5185(m)	0	---	---
Silver	ppm	ASTM D5185(m)	0	---	---
Aluminum	ppm	ASTM D5185(m) >25	0	---	---
Lead	ppm	ASTM D5185(m) >100	0	---	---
Copper	ppm	ASTM D5185(m) >200	<1	---	---
Tin	ppm	ASTM D5185(m) >25	0	---	---
Antimony	ppm	ASTM D5185(m) >5	0	---	---
Vanadium	ppm	ASTM D5185(m)	0	---	---
Beryllium	ppm	ASTM D5185(m)	0	---	---
Cadmium	ppm	ASTM D5185(m)	0	---	---

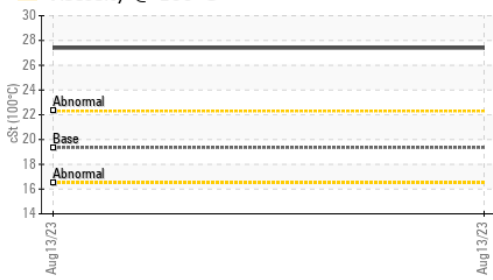
ADDITIVES	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 60	37	---	---
Barium	ppm	ASTM D5185(m) 0	0	---	---
Molybdenum	ppm	ASTM D5185(m) 0	<1	---	---
Manganese	ppm	ASTM D5185(m) 0	0	---	---
Magnesium	ppm	ASTM D5185(m) 0	<1	---	---
Calcium	ppm	ASTM D5185(m) 0	10	---	---
Phosphorus	ppm	ASTM D5185(m) 270	236	---	---
Zinc	ppm	ASTM D5185(m) 0	10	---	---
Sulfur	ppm	ASTM D5185(m) 11200	5532	---	---
Lithium	ppm	ASTM D5185(m)	▲ 9	---	---

CONTAMINANTS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >50	4	---	---
Sodium	ppm	ASTM D5185(m)	<1	---	---
Potassium	ppm	ASTM D5185(m) >20	<1	---	---

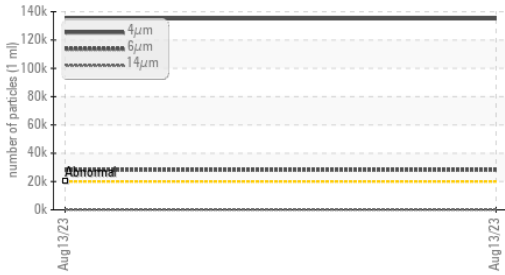
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	▲ 135062	---	---
Particles >6µm	ASTM D7647	>5000	▲ 28227	---	---
Particles >14µm	ASTM D7647	>640	201	---	---
Particles >21µm	ASTM D7647	>160	24	---	---
Particles >38µm	ASTM D7647	>40	0	---	---
Particles >71µm	ASTM D7647	>10	0	---	---
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 24/22/15	---	---

OIL ANALYSIS REPORT

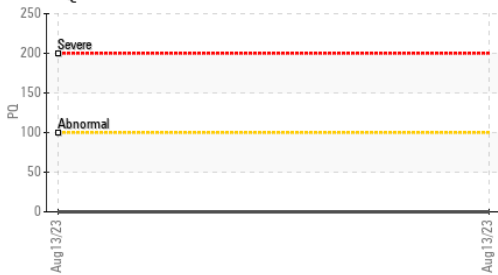
▲ Viscosity @ 100°C



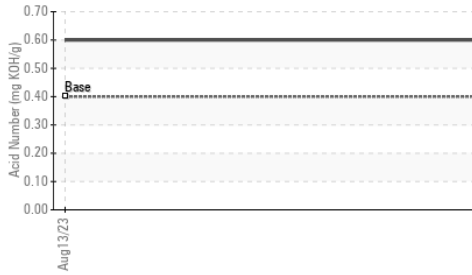
▲ Particle Trend



● PQ



Acid Number



Viscosity @ 40°C



FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g	ASTM D974*	0.40	0.60	---
VISUAL				
White Metal	scalar	Visual*	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE
Silt	scalar	Visual*	NONE	NONE
Debris	scalar	Visual*	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML
Odor	scalar	Visual*	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG
Free Water	scalar	Visual*		NEG

FLUID PROPERTIES

method	limit/base	current	history1	history2
Visc @ 40°C	cSt ASTM D7279(m)	220	228	---
Visc @ 100°C	cSt ASTM D7279(m)	19.35	▲ 27.4	---
Viscosity Index (VI)	Scale ASTM D2270*	99	▲ 155	---

SAMPLE IMAGES

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

GRAPHS

Ferrous Alloys



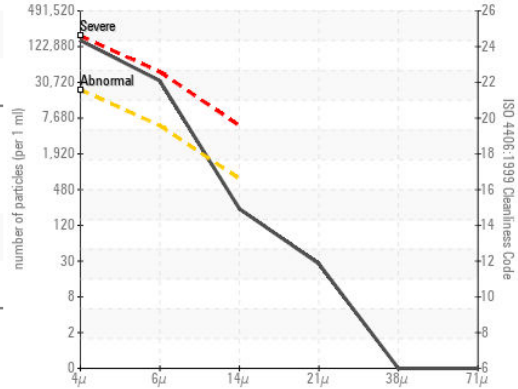
Non-ferrous Metals



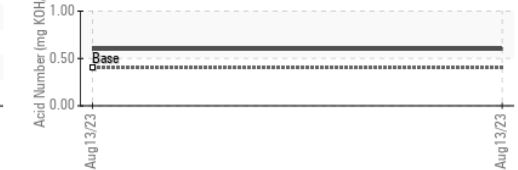
Viscosity @ 40°C



▲ Particle Count



Acid Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0070131 **Received** : 25 Aug 2023
Lab Number : **02578546** **Diagnosed** : 29 Aug 2023
Unique Number : 5631606 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: KV100, PQ, PrtCount, TAN Man, VI)

Vale - Voisey's Bay
 Voisey's Bay Mine Site, P.O. Box 7001, Str. C Happy Valley
 Goose Bay, NL
 CA A0P 1C0
 Contact: Harman Garg
 harman.garg@accenture.com

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

T:
F: