

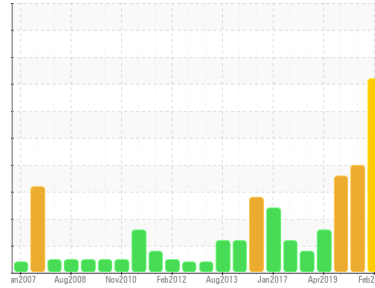
# PROBLEM SUMMARY

Sample Rating Trend

ISO

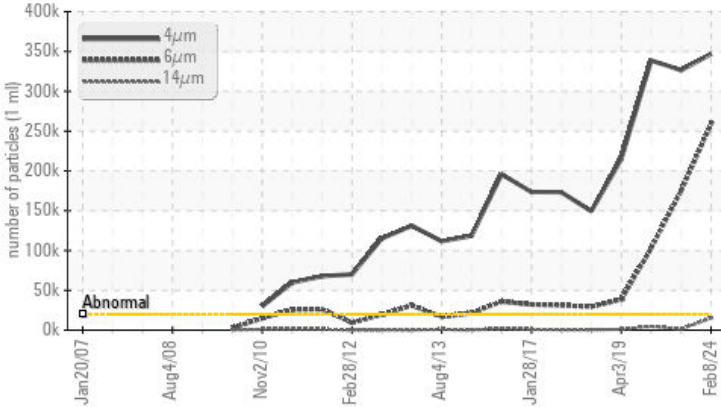


Area  
**1623**  
Machine Id  
**1623-5522-6003 - RECLAIM CONVEYOR 2**  
Component  
**Gearbox**  
Fluid  
**PETRO CANADA ENDURATEX SYNTHETIC EP 220 (100 LTR)**



## COMPONENT CONDITION SUMMARY

### ▲ Particle Trend



## RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. **DISCLAIMER:** Interpretation of results is based on the sample as received from the customer. The condition of the sample and the method of sampling cannot be verified.

## PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	SEVERE	SEVERE
Particles >4µm	ASTM D7647	>20000	▲ 346780	▲ 326416	▲ 338747
Particles >6µm	ASTM D7647	>5000	▲ 258649	▲ 174945	▲ 102898
Particles >14µm	ASTM D7647	>640	▲ 15205	▲ 1335	▲ 4623
Particles >21µm	ASTM D7647	>160	▲ 520	173	▲ 658
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 26/25/21	▲ 26/25/18	▲ 26/24/19
Silt	scalar Visual*	NONE	▲ MODER	NONE	NONE
Debris	scalar Visual*	NONE	▲ LIGHT	NONE	NONE

Customer Id: INCVOS  
Sample No.: PC0070737  
Lab Number: 02616092  
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](mailto:Kevin.Marson@wearcheck.com)

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

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Alert	---	---	?	We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. <b>DISCLAIMER:</b> Interpretation of results is based on the sample as received from the customer. The condition of the sample and the method of sampling cannot be verified. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.
Check Breathers	---	---	?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.
Check Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

## HISTORICAL DIAGNOSIS

### 30 Oct 2022 Diag: Wes Davis

ISO



Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. All component wear rates are normal. Particles >6µm are severely high. Particles >4µm are severely high. Oil Cleanliness are severely high. Particles >14µm are abnormally high. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report



### 21 Dec 2020 Diag: Wes Davis

ISO



We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. All component wear rates are normal. Particles >6µm are severely high. Particles >4µm are severely high. Particles >14µm are abnormally high. Particles >21µm are abnormally high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 03 Apr 2019 Diag: Wes Davis

ISO

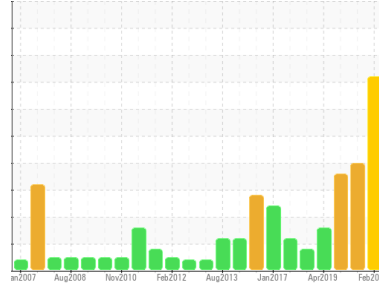


Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. All component wear rates are normal. Particles >4µm are severely high. Particles >6µm are abnormally high. Particles >14µm are notably high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



Area  
**1623**  
Machine Id  
**1623-5522-6003 - RECLAIM CONVEYOR 2**  
Component  
**Gearbox**  
Fluid  
**PETRO CANADA ENDURATEX SYNTHETIC EP 220 (100 LTR)**



**DIAGNOSIS**

**▲ Recommendation**

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. **DISCLAIMER:** Interpretation of results is based on the sample as received from the customer. The condition of the sample and the method of sampling cannot be verified.

**Wear**

All component wear rates are normal.

**▲ Contamination**

There is a high amount of particulates (2 to 100 microns in size) present in the oil. Moderate concentration of visible dirt/debris present in the oil. There is a moderate amount of visible silt present in the sample. The water content is negligible.

**Fluid Condition**

The AN level is acceptable for this fluid.

**SAMPLE INFORMATION**

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>PC0070737</b>	PC	PC0022899
Sample Date	Client Info	<b>08 Feb 2024</b>	30 Oct 2022	21 Dec 2020
Machine Age	mths	Client Info	0	0
Oil Age	mths	Client Info	0	0
Oil Changed	Client Info	<b>Not Changed</b>	N/A	N/A
Sample Status		<b>SEVERE</b>	SEVERE	SEVERE

**WEAR METALS**

method	limit/base	current	history1	history2	
PQ	ASTM D8184*	<b>0</b>	0	0	
Iron	ppm	ASTM D5185(m) >200	<b>52</b>	35	28
Chromium	ppm	ASTM D5185(m) >15	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185(m) >15	<b>3</b>	5	2
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185(m) >25	<b>&lt;1</b>	<1	<1
Lead	ppm	ASTM D5185(m) >100	<b>0</b>	<1	0
Copper	ppm	ASTM D5185(m) >200	<b>1</b>	3	1
Tin	ppm	ASTM D5185(m) >25	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m) >5	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0	0

**ADDITIVES**

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m) 33	<b>27</b>	21	17
Barium	ppm	ASTM D5185(m) 5	<b>3</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	<b>0</b>	0	<1
Manganese	ppm	ASTM D5185(m)	<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185(m) 5	<b>16</b>	62	0
Calcium	ppm	ASTM D5185(m) 5	<b>3</b>	1	2
Phosphorus	ppm	ASTM D5185(m) 437	<b>393</b>	327	193
Zinc	ppm	ASTM D5185(m) 5	<b>5</b>	3	4
Sulfur	ppm	ASTM D5185(m) 5000	<b>4903</b>	6711	4049
Lithium	ppm	ASTM D5185(m)	<b>4</b>	5	8

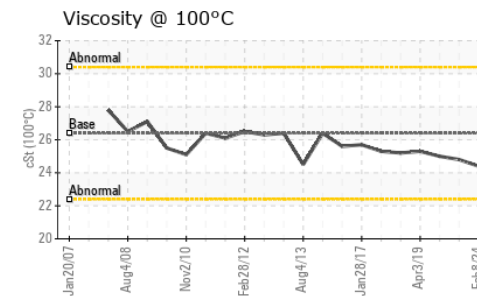
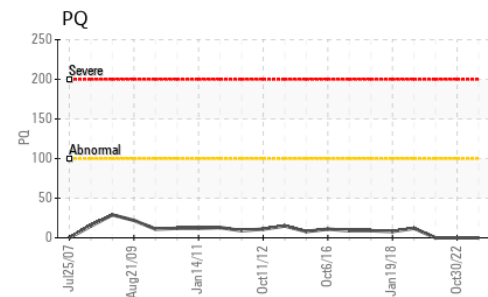
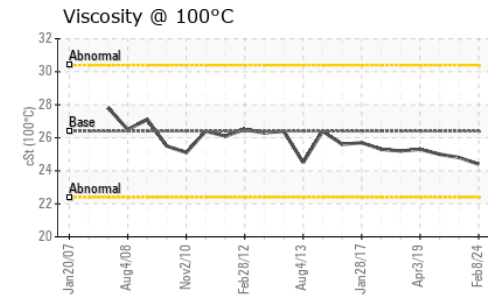
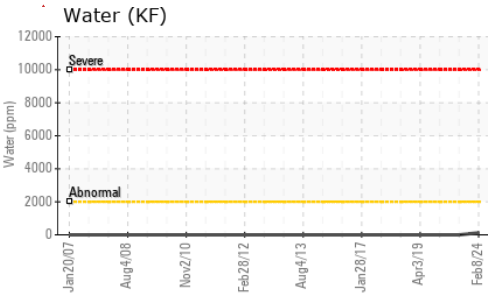
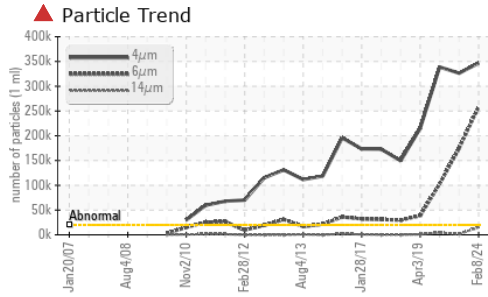
**CONTAMINANTS**

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m) >50	<b>3</b>	5	8
Sodium	ppm	ASTM D5185(m)	<b>0</b>	<1	1
Potassium	ppm	ASTM D5185(m) >20	<b>1</b>	<1	1
Water	%	ASTM D6304* >0.2	<b>0.012</b>	---	---
ppm Water	ppm	ASTM D6304* >2000	<b>125</b>	---	---

**FLUID CLEANLINESS**

method	limit/base	current	history1	history2	
Particles >4µm	ASTM D7647	>20000	<b>▲ 346780</b>	▲ 326416	▲ 338747
Particles >6µm	ASTM D7647	>5000	<b>▲ 258649</b>	▲ 174945	▲ 102898
Particles >14µm	ASTM D7647	>640	<b>▲ 15205</b>	▲ 1335	▲ 4623
Particles >21µm	ASTM D7647	>160	<b>▲ 520</b>	173	▲ 658
Particles >38µm	ASTM D7647	>40	<b>11</b>	5	5
Particles >71µm	ASTM D7647	>10	<b>1</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>▲ 26/25/21</b>	▲ 26/25/18	▲ 26/24/19

# OIL ANALYSIS REPORT



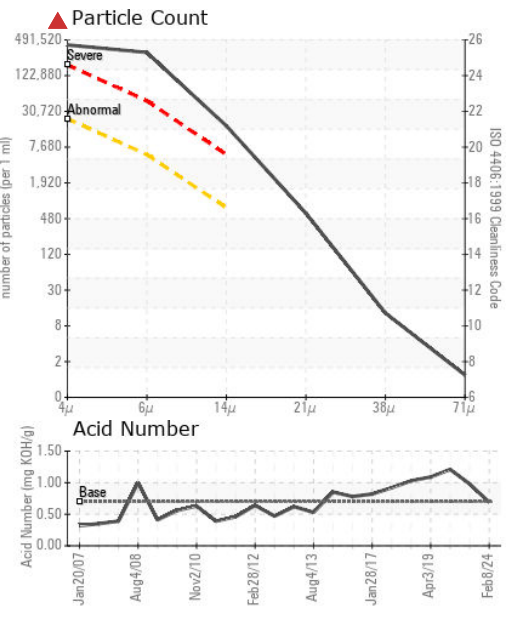
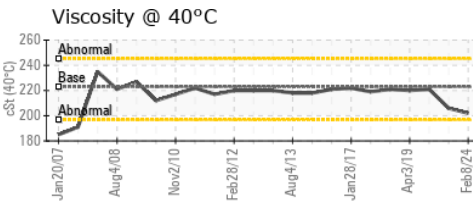
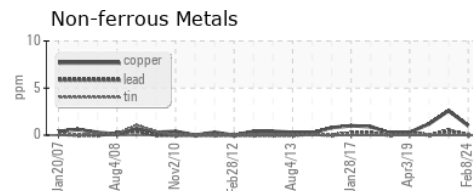
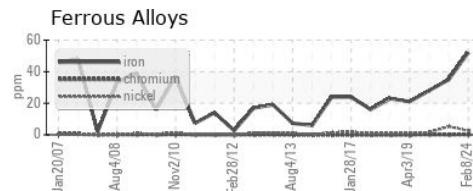
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.7	<b>0.69</b>	0.98	1.21

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	LIGHT
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	Visual*	NONE	<b>▲ MODER</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>▲ LIGHT</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*	>0.2	<b>NEG</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	223	<b>202</b>	206	221
Visc @ 100°C	cSt	ASTM D7279(m)	26.39	<b>24.4</b>	24.8	25.0
Viscosity Index (VI)	Scale	ASTM D2270*	151	<b>150</b>	150	142

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

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0070737  
**Lab Number** : 02616092  
**Unique Number** : 5733202  
**Test Package** : IND 2 ( Additional Tests: CENTRIFUGE(WARD), KF, KV100, PQ, PrcCount, TAN Ma

**Vale - Voisey's Bay**  
 Voisey's Bay Mine Site, P.O. Box 7001, Str. C Happy Valley  
 Goose Bay, NL  
 CA A0P 1C0  
 Contact: Robert Feltham  
 robert.feltham@vale.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: x