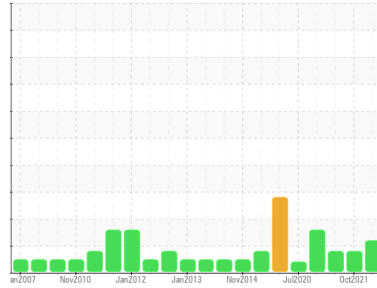


# PROBLEM SUMMARY

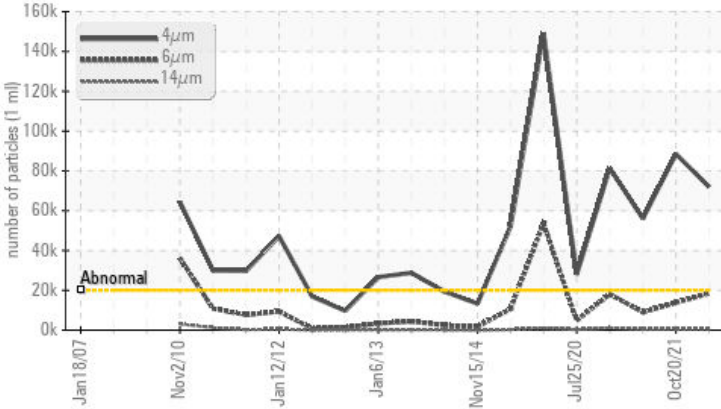
Area  
**1460**  
Machine Id  
**1460-5652-4015 - HGNI CONCENTRATE TANK 2 AGITATOR**  
Component  
**Gearbox**  
Fluid  
**PETRO CANADA ENDURATEX SYNTHETIC EP 220 (80 LTR)**

Sample Rating Trend



## COMPONENT CONDITION SUMMARY

▲ Particle Trend



## RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	ABNORMAL
Particles >4µm	ASTM D7647	>20000	▲ 71992	▲ 88526	▲ 56046
Particles >6µm	ASTM D7647	>5000	▲ 18403	▲ 13779	▲ 9043
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 23/21/16	▲ 24/21/16	▲ 23/20/16

Customer Id: INCVOS  
Sample No.: PC0057968  
Lab Number: 02568904  
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Wes Davis +1 905-569-8600 x223  
[wesd@wearcheck.ca](mailto:wesd@wearcheck.ca)

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 recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.

## HISTORICAL DIAGNOSIS

### 20 Oct 2021 Diag: Wes Davis

ISO



We recommend you service the filters on this component. We recommend an early resample to monitor this condition. All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are abnormally high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

[view report](#)



### 20 Jun 2021 Diag: Wes Davis

ISO



We recommend you service the filters on this component. We recommend an early resample to monitor this condition. All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are notably high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

[view report](#)



### 15 Dec 2020 Diag: Wes Davis

ISO

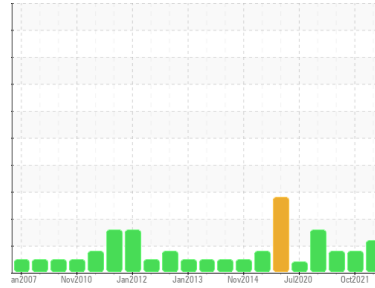


We recommend you service the filters on this component. We recommend an early resample to monitor this condition. All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are abnormally high. Particles >14µm are notably high. Particles >21µm are notably high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

[view report](#)



Area  
**1460**  
Machine Id  
**1460-5652-4015 - HGNI CONCENTRATE TANK 2 AGITATOR**  
Component  
**Gearbox**  
Fluid  
**PETRO CANADA ENDURATEX SYNTHETIC EP 220 (80 LTR)**



## DIAGNOSIS

**Recommendation**  
We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

**Wear**  
All component wear rates are normal.

**Contamination**  
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

**Fluid Condition**  
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

## SAMPLE INFORMATION

method	limit/base	current	history 1	history 2
Sample Number	Client Info	<b>PC0057968</b>	PC0030024	PC0040203
Sample Date	Client Info	<b>25 Jun 2023</b>	20 Oct 2021	20 Jun 2021
Machine Age	yrs Client Info	<b>0</b>	0	0
Oil Age	yrs Client Info	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## WEAR METALS

method	limit/base	current	history 1	history 2
PQ	ASTM D8184*	<b>0</b>	0	0
Iron	ppm ASTM D5185(m) >200	<b>5</b>	4	3
Chromium	ppm ASTM D5185(m) >15	<b>0</b>	0	0
Nickel	ppm ASTM D5185(m) >15	<b>&lt;1</b>	<1	<1
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>0</b>	0	0
Lead	ppm ASTM D5185(m) >100	<b>2</b>	<1	<1
Copper	ppm ASTM D5185(m) >200	<b>5</b>	3	<1
Tin	ppm ASTM D5185(m) >25	<b>0</b>	0	0
Antimony	ppm ASTM D5185(m) >5	<b>0</b>	<1	0
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	history 1	history 2
Boron	ppm ASTM D5185(m) 33	<b>16</b>	26	23
Barium	ppm ASTM D5185(m) 5	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185(m)	<b>0</b>	0	<1
Manganese	ppm ASTM D5185(m)	<b>0</b>	0	0
Magnesium	ppm ASTM D5185(m) 5	<b>&lt;1</b>	<1	<1
Calcium	ppm ASTM D5185(m) 5	<b>3</b>	2	3
Phosphorus	ppm ASTM D5185(m) 437	<b>368</b>	401	315
Zinc	ppm ASTM D5185(m) 5	<b>18</b>	9	7
Sulfur	ppm ASTM D5185(m) 5000	<b>4729</b>	4857	4817
Lithium	ppm ASTM D5185(m)	<b>2</b>	2	4

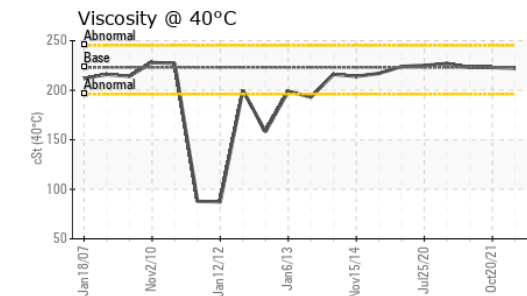
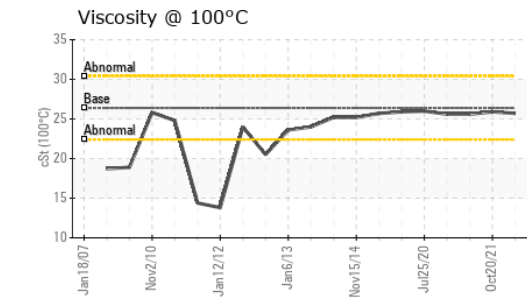
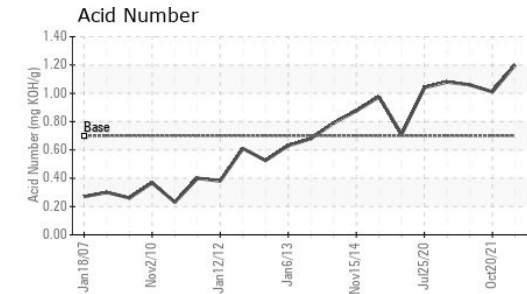
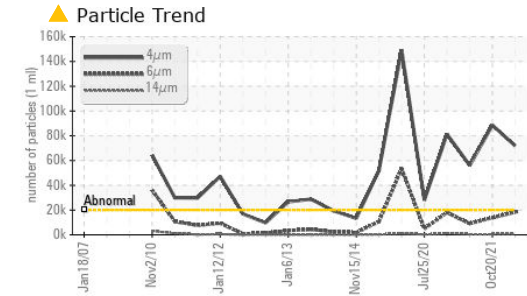
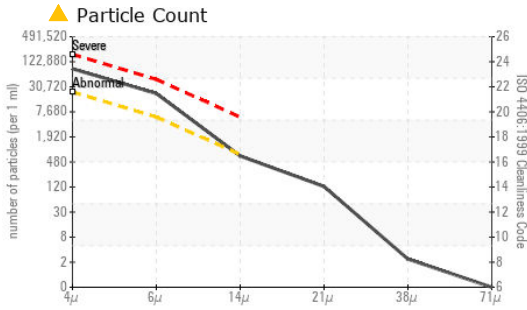
## CONTAMINANTS

method	limit/base	current	history 1	history 2
Silicon	ppm ASTM D5185(m) >50	<b>28</b>	27	11
Sodium	ppm ASTM D5185(m)	<b>&lt;1</b>	<1	<1
Potassium	ppm ASTM D5185(m) >20	<b>&lt;1</b>	<1	<1

## FLUID CLEANLINESS

method	limit/base	current	history 1	history 2
Particles >4µm	ASTM D7647 >20000	<b>▲ 71992</b>	▲ 88526	▲ 56046
Particles >6µm	ASTM D7647 >5000	<b>▲ 18403</b>	▲ 13779	▲ 9043
Particles >14µm	ASTM D7647 >640	<b>588</b>	459	439
Particles >21µm	ASTM D7647 >160	<b>109</b>	74	95
Particles >38µm	ASTM D7647 >40	<b>2</b>	1	2
Particles >71µm	ASTM D7647 >10	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c) >21/19/16	<b>▲ 23/21/16</b>	▲ 24/21/16	▲ 23/20/16

# OIL ANALYSIS REPORT



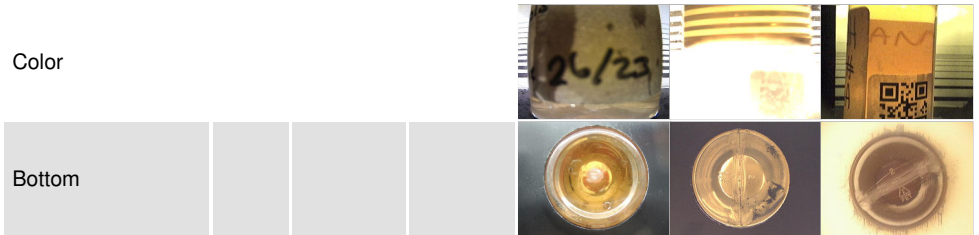
## FLUID DEGRADATION

method	limit/base	current	history 1	history 2		
Acid Number (AN) mg KOH/g	ASTM D974*	0.7	<b>1.20</b>	1.01	1.06	
VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	Visual*	NONE	<b>NONE</b>	VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>VLITE</b>	VLITE	LIGHT
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	history 1	history 2	
Visc @ 40°C	cSt ASTM D7279(m)	223	<b>222</b>	223	223
Visc @ 100°C	cSt ASTM D7279(m)	26.39	<b>25.7</b>	25.9	25.6
Viscosity Index (VI)	Scale ASTM D2270*	151	<b>147</b>	148	145

## SAMPLE IMAGES



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0057968  
**Lab Number** : **02568904**  
**Unique Number** : 5605950  
**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: 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: