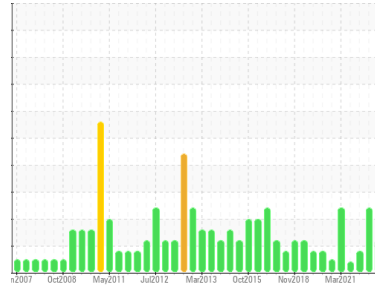


PROBLEM SUMMARY

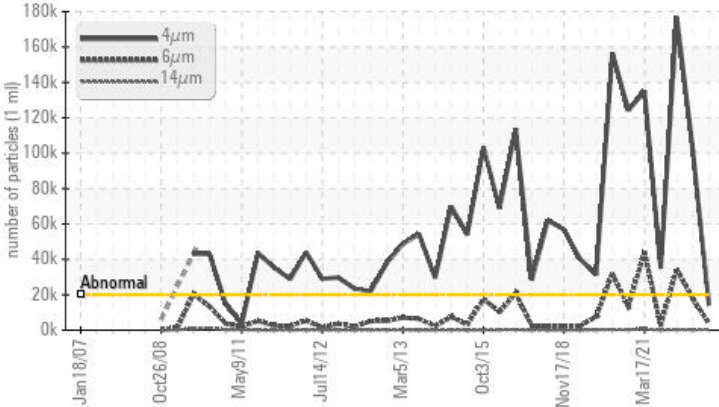
Sample Rating Trend



Area
1460
Machine Id
1460-5666-4001 - HG Ni THICKENER MECH PLANETARY
Component
Reduction Gear
Fluid
PETRO CANADA ENDURATEX XL 68/220 (20 LTR)

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	ATTENTION
Particles >4µm	ASTM D7647	>20000	▲ 101310	14261	176785
Particles >6µm	ASTM D7647	>5000	▲ 17571	3761	34501
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 24/21/15	21/19/16	25/22/15

Customer Id: INCVOS
Sample No.: PC0057975
Lab Number: 02568906
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

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.

HISTORICAL DIAGNOSIS

25 Jun 2023 Diag:

OFF SPEC



[view report](#)



20 Oct 2021 Diag: Kevin Marson

WEAR



Resample at the next service interval to monitor. Iron ppm levels are noted. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. All other component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. 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

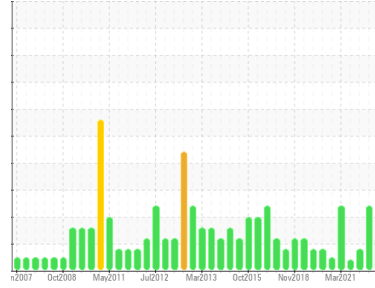


We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

[view report](#)



Area
1460
Machine Id
1460-5666-4001 - HG Ni THICKENER MECH PLANETARY
Component
Reduction Gear
Fluid
PETRO CANADA ENDURATEX XL 68/220 (20 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	PC0057975	PC0057970	PC0030028
Sample Date	Client Info	25 Jun 2023	25 Jun 2023	20 Oct 2021
Machine Age	mths	Client Info	0	0
Oil Age	mths	Client Info	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	ABNORMAL	ATTENTION

WEAR METALS

method	limit/base	current	history 1	history 2	
PQ	ASTM D8184*	0	0	0	
Iron	ppm	ASTM D5185(m) >150	135	<1	▲ 204
Chromium	ppm	ASTM D5185(m) >10	1	0	1
Nickel	ppm	ASTM D5185(m) >10	<1	<1	1
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	<1
Aluminum	ppm	ASTM D5185(m) >25	<1	0	0
Lead	ppm	ASTM D5185(m) >100	0	0	<1
Copper	ppm	ASTM D5185(m) >50	5	<1	2
Tin	ppm	ASTM D5185(m) >10	<1	0	0
Antimony	ppm	ASTM D5185(m) >5	0	0	<1
Vanadium	ppm	ASTM D5185(m)	0	0	0
Beryllium	ppm	ASTM D5185(m)	0	0	0
Cadmium	ppm	ASTM D5185(m)	0	0	0

ADDITIVES

method	limit/base	current	history 1	history 2	
Boron	ppm	ASTM D5185(m)	11	<1	9
Barium	ppm	ASTM D5185(m)	<1	0	0
Molybdenum	ppm	ASTM D5185(m)	<1	0	<1
Manganese	ppm	ASTM D5185(m)	<1	0	1
Magnesium	ppm	ASTM D5185(m)	<1	<1	0
Calcium	ppm	ASTM D5185(m)	13	▲ 60	2
Phosphorus	ppm	ASTM D5185(m) 240	331	333	355
Zinc	ppm	ASTM D5185(m)	23	▲ 394	22
Sulfur	ppm	ASTM D5185(m) 4060	5363	▲ 881	5342
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

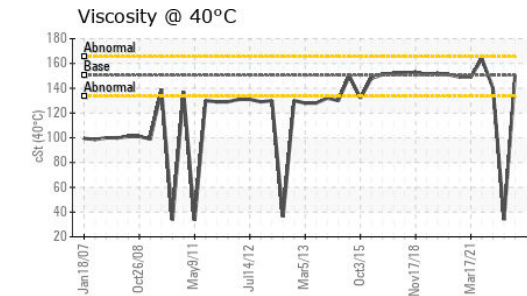
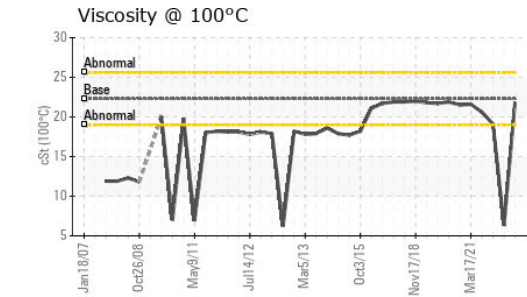
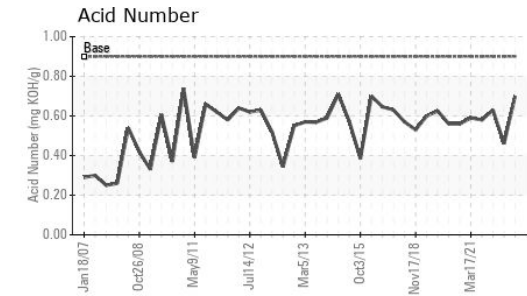
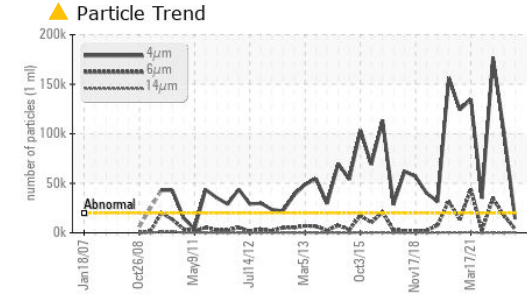
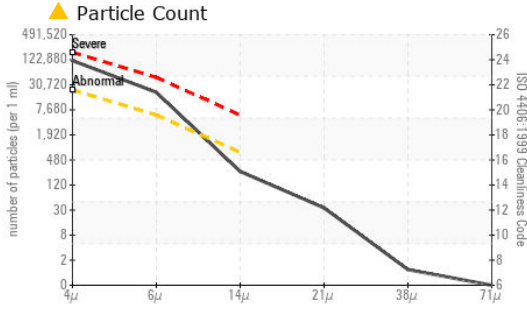
CONTAMINANTS

method	limit/base	current	history 1	history 2	
Silicon	ppm	ASTM D5185(m) >50	3	<1	1
Sodium	ppm	ASTM D5185(m)	<1	0	0
Potassium	ppm	ASTM D5185(m) >20	<1	0	<1

FLUID CLEANLINESS

method	limit/base	current	history 1	history 2	
Particles >4µm	ASTM D7647	>20000	▲ 101310	14261	176785
Particles >6µm	ASTM D7647	>5000	▲ 17571	3761	34501
Particles >14µm	ASTM D7647	>640	224	423	299
Particles >21µm	ASTM D7647	>160	30	139	12
Particles >38µm	ASTM D7647	>40	1	10	0
Particles >71µm	ASTM D7647	>10	0	1	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 24/21/15	21/19/16	25/22/15

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0057975
Lab Number : 02568906
Unique Number : 5605952
Test Package : IND 2 (Additional Tests: KV100, PQ, PrtCount, TAN Man, VI)

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.

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
 T:
 F: x:

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.9	0.70	0.46	0.63

VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	Visual*	NONE	NONE	NONE	VLITE
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	VLITE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	VLITE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 40°C	cSt	ASTM D7279(m)	150.4	150	▲ 33.9	140
Visc @ 100°C	cSt	ASTM D7279(m)	22.28	21.8	▲ 6.3	19.1
Viscosity Index (VI)	Scale	ASTM D2270*	176	171	▲ 138	155

SAMPLE IMAGES		method	limit/base	current	history 1	history 2
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