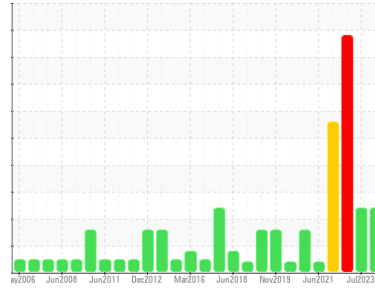


PROBLEM SUMMARY

Sample Rating Trend



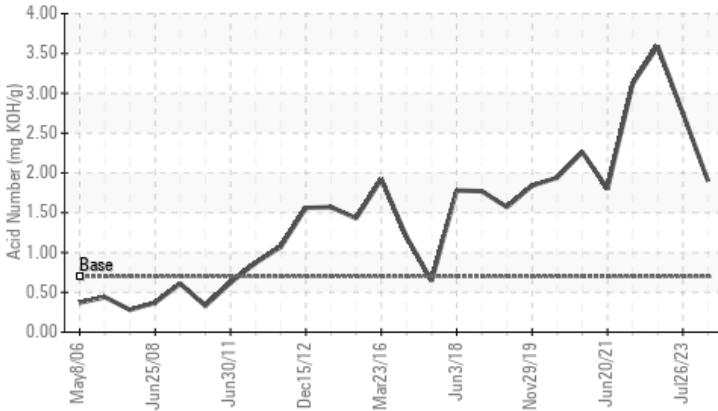
DEGRADATION



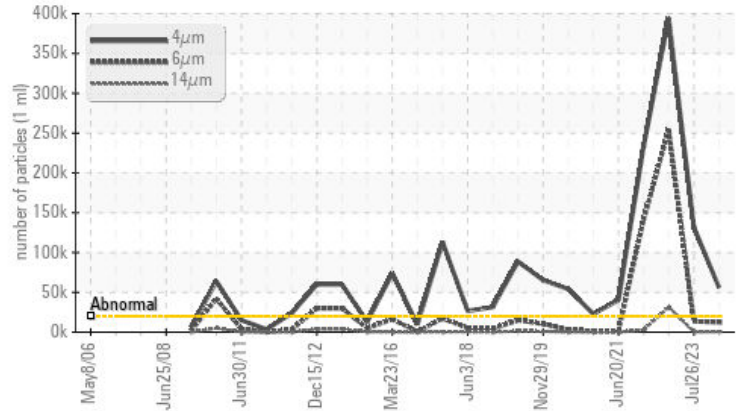
Area
1430
Machine Id
1430-5652-4002 - Cu/Ni AERATION TANK 1 AGITATOR
Component
1 Gearbox
Fluid
PETRO CANADA ENDURATEX SYNTHETIC EP 220 (80 LTR)

COMPONENT CONDITION SUMMARY

▲ Acid Number



▲ Particle Trend



RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. 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	SEVERE
Particles >4µm	ASTM D7647	>20000	▲ 56182	▲ 131769	● 394466
Particles >6µm	ASTM D7647	>5000	▲ 12595	▲ 13506	● 254036
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 23/21/16	▲ 24/21/15	● 26/25/22
Acid Number (AN)	mg KOH/g	ASTM D974* 0.7	▲ 1.90	▲ 2.75	▲ 3.59

Customer Id: INCVOS
Sample No.: PC0070734
Lab Number: 02602035
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 Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

26 Jul 2023 Diag: Kevin Marson

DEGRADATION



We recommend that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is above the recommended limit. The oil is no longer serviceable.

view report



04 Feb 2023 Diag: Kevin Marson

ISO



We advise that you check all areas where contaminants can enter the system. We recommend that you drain the oil from the component if this has not already been done. 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 >14µm are severely high. Particles >21µm are severely high. Particles >6µm are severely high. Oil Cleanliness are severely high. Particles >4µm are severely high. The AN level is above the recommended limit. The oil is no longer serviceable.

view report



08 Sep 2022 Diag: Kevin Marson

ISO

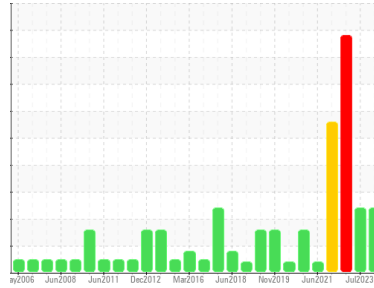


We advise that you check all areas where contaminants can enter the system. We recommend that you drain the oil from the component if this has not already been done. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. 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. Oil Cleanliness are severely high. Particles >14µm are abnormally high. Particles >21µm are abnormally high. The AN level is above the recommended limit. The oil is no longer serviceable.

view report



Area
1430
Machine Id
1430-5652-4002 - Cu/Ni AERATION TANK 1 AGITATOR
Component
1 Gearbox
Fluid
PETRO CANADA ENDURATEX SYNTHETIC EP 220 (80 LTR)



DIAGNOSIS

Recommendation
We recommend that you drain the oil from the component if this has not already been done. 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. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system.

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

Fluid Condition
The AN level is above the recommended limit. The oil is no longer serviceable.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PC0070734	PC0077336	PC0058642
Sample Date	Client Info		30 Nov 2023	26 Jul 2023	04 Feb 2023
Machine Age	days	Client Info	0	0	0
Oil Age	days	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			ABNORMAL	ABNORMAL	SEVERE

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m) >200	15	11	39
Chromium	ppm	ASTM D5185(m) >15	0	0	0
Nickel	ppm	ASTM D5185(m) >15	<1	0	2
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	<1	0	0
Aluminum	ppm	ASTM D5185(m) >25	<1	<1	<1
Lead	ppm	ASTM D5185(m) >100	<1	0	0
Copper	ppm	ASTM D5185(m) >200	<1	<1	7
Tin	ppm	ASTM D5185(m) >25	0	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

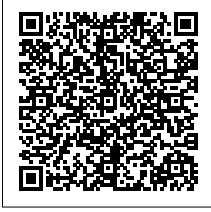
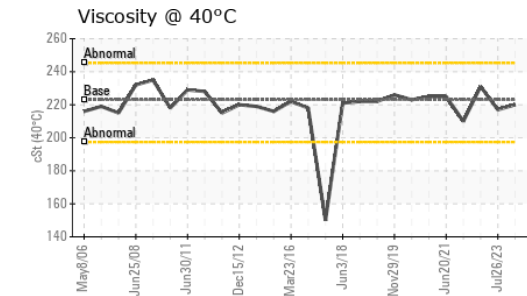
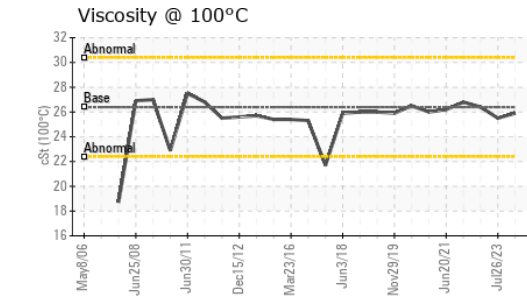
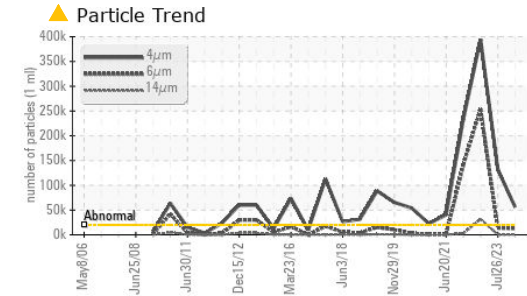
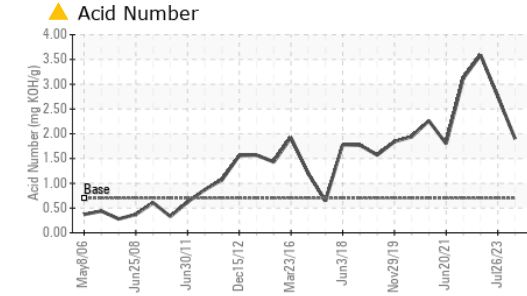
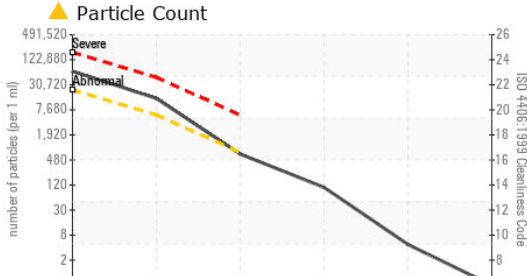
ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 33	25	25	23
Barium	ppm	ASTM D5185(m) 5	<1	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m) 5	0	<1	<1
Calcium	ppm	ASTM D5185(m) 5	<1	2	<1
Phosphorus	ppm	ASTM D5185(m) 437	369	287	240
Zinc	ppm	ASTM D5185(m) 5	1	4	2
Sulfur	ppm	ASTM D5185(m) 5000	4631	4565	3933
Lithium	ppm	ASTM D5185(m)	<1	<1	2

CONTAMINANTS

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

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0070734
Lab Number : 02602035
Unique Number : 5695120
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, Stn. C Happy Valley
 Goose Bay, NL
 CA A0P 1C0
 Contact: Robert Feltham
 robert.feltham@vale.com
 T:
 F: x:

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	▲ 56182	▲ 131769	● 394466
Particles >6µm	ASTM D7647	>5000	▲ 12595	▲ 13506	● 254036
Particles >14µm	ASTM D7647	>640	585	306	● 31727
Particles >21µm	ASTM D7647	>160	93	49	● 5824
Particles >38µm	ASTM D7647	>40	4	0	38
Particles >71µm	ASTM D7647	>10	0	0	2
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 23/21/16	▲ 24/21/15	● 26/25/22

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	0.7	▲ 1.90	▲ 2.75	▲ 3.59

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar Visual*	NONE	NONE	VLITE	LIGHT
Yellow Metal	scalar Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar Visual*	NONE	NONE	NONE	NONE
Silt	scalar Visual*	NONE	NONE	VLITE	NONE
Debris	scalar Visual*	NONE	NONE	VLITE	NONE
Sand/Dirt	scalar Visual*	NONE	NONE	NONE	LIGHT
Appearance	scalar Visual*	NORML	NORML	NORML	NORML
Odor	scalar Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar Visual*		NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt ASTM D7279(m)	223	220	217	231
Visc @ 100°C	cSt ASTM D7279(m)	26.39	25.9	25.5	26.4
Viscosity Index (VI)	Scale ASTM D2270*	151	149	148	146

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

