

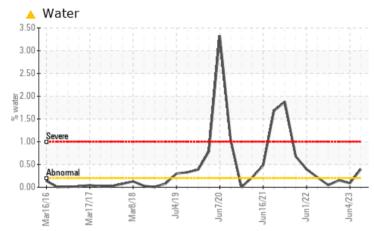
PROBLEM SUMMARY

Machine Id **SMIMID MASSAGER 7 (S/N CK3357U00145)** Component

Gearbox

PETRO CANADA PURITY FG EP GEAR OIL 220 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you follow the water drain-off procedure for this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

PROBLEMATIC TEST RESULTS								
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL		
Water	%	ASTM D6304	>0.2	A 0.397	0.088	0.151		
ppm Water	ppm	ASTM D6304	>2000	A 3970	880	1510		
Silt	scalar	*Visual	NONE	🔺 MODER	NONE	NONE		
Appearance	scalar	*Visual	NORML	🔺 HAZY	🔺 HAZY	🔺 HAZY		
Free Water	scalar	*Visual		<u> </u>	1 .0	NEG		

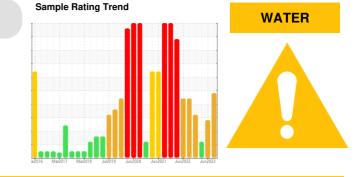
Customer Id: SMIMID Sample No.: USP0000515 Lab Number: 05933722 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Doug Bogart +1 (800)237-1369 x4016 <u>dougb@wearcheckusa.com</u>

To change component or sample information: Customer Service +1 1-800-237-1369 <u>customerservice@wearcheck.com</u>



RECOMMENDED	ACTIONS			
Action	Status	Date	Done By	Description
Water Drain-off			?	We advise that you follow the water drain-off procedure for this component.
Alert			?	We were unable to perform a particle count due to a high concentration of particles present in this sample.

HISTORICAL DIAGNOSIS



04 Jun 2023 Diag: Doug Bogart

We advise that you follow the water drain-off procedure for this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.All component wear rates are normal. Appearance is hazy. Moderate concentration of visible dirt/debris present in the oil. Free water present. The AN level is acceptable for this fluid.



view report

08 Mar 2023 Diag: Doug Bogart



We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.All component wear rates are normal. Moderate concentration of visible dirt/debris present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

29 Nov 2022 Diag: Doug Bogart





We advise that you follow the water drain-off procedure for this component. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. Free water present. The oil viscosity is lower than normal. Confirmed. The AN level is acceptable for this fluid.









OIL ANALYSIS REPORT

Machine Id SMIMID MASSAGER 7 (S/N CK3357U00145) Component

Gearbox Fluid

PETRO CANADA PURITY FG EP GEAR OIL 220 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you follow the water drain-off procedure for this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear

All component wear rates are normal.

Contamination

Appearance is hazy. There is a moderate amount of visible silt present in the sample. There is a light concentration of water present in the oil. Free water present.

Fluid Condition

The AN level is acceptable for this fluid.

Sample Number Client Info USP0000515 USP05864343 USP240393 Sample Date Client Info 0 0 0 Dil Age hrs Client Info 0 0 0 Dil Age hrs Client Info 0 0 0 0 Dil Age hrs Client Info N/A N/A N/A N/A Sample Status method limit/base current history1 history2 ron ppm ASTM 05185m >15 0 0 0 Vickel ppm ASTM 05185m >15 0 0 0 Silver ppm ASTM 05185m >25 0 0 0 Sopper ppm ASTM 05185m >200 0 0 0 Cadmium ppm ASTM 05185m >20 0 0 0 Astm 05185m >200 0 0 0 0 0 Astm 05185m	220 (GAL)		ar2016 Mar2	017 Mar2018 Jul2019	Jun2020 Jun2021 Jun2023	2 Jun2023	
Sample Date Client Info 23 Aug 2023 04 Jun 2023 08 Mar 2023 Machine Age hrs Client Info 0 0 0 Dil Age hrs Client Info 0 0 0 Dil Changed Client Info N/A N/A N/A N/A Sample Status method Imit/base current history1 history2 From ppm ASTM 05156m >200 92 68 45 Chromium ppm ASTM 05156m >10 0 0 0 Sikel ppm ASTM 05156m 0 0 0 0 Numinum ppm ASTM 05156m >100 0 0 0 Caradium ppm ASTM 05156m >200 0 0 0 0 Caradium ppm ASTM 05156m 0 0 0 0 0 Aradium ppm ASTM 05156m 0 0 0 0	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 Di Age hrs Client Info N/A N/A N/A Sample Status Image Client Info N/A ABNORMAL ABNORMAL VEAR METALS method Imit/base current history! history! ron ppm ASTM D5185m >200 92 68 45 Chromium ppm ASTM D5185m >15 0 0 0 Silver ppm ASTM D5185m >15 0 0 0 Silver ppm ASTM D5185m >200 0 0 0 Copper ppm ASTM D5185m >200 0 0 0 Cardinum ppm ASTM D5185m >200 0 0 0 Zanadium ppm ASTM D5185m >20 0 0 0 AbDTIVES method Imit/base current history! history! Soron ppm ASTM D5185m >0 0 0 Adardatium ppm ASTM D5185m <1	Sample Number		Client Info		USP0000515	USP05864343	USP246393
Machine Age hrs Client Info 0 0 0 Di Age hrs Client Info N/A N/A N/A Sample Status Image Client Info N/A ABNORMAL ABNORMAL VEAR METALS method Imit/base current history! history! ron ppm ASTM 05185n >200 92 68 45 Chromium ppm ASTM 05185n >15 <1	Sample Date		Client Info		23 Aug 2023	04 Jun 2023	08 Mar 2023
Dil Changed Client Info N/A N/A N/A ABNORMAL ABNORMAL ABNORMAL WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >200 92 68 45 Chromium ppm ASTM D5185m >15 0 0 0 Nickel ppm ASTM D5185m >15 0 0 0 Silver ppm ASTM D5185m >25 0 0 0 Lead ppm ASTM D5185m >200 0 <11	Machine Age	hrs	Client Info			0	0
Sample Status method Imit/base current history1 ABNORMAL ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >200 92 68 45 Chromium ppm ASTM D5185m >15 0 0 0 Nickel ppm ASTM D5185m >15 0 0 0 Silver ppm ASTM D5185m >200 0 0 0 Adaminum ppm ASTM D5185m >200 0 0 0 Capper ppm ASTM D5185m >200 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 1	Oil Age	hrs	Client Info		0	0	0
Sample Status method Imit/base current history1 ABNORMAL WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5185m >15 <1	Oil Changed		Client Info		N/A	N/A	N/A
ron ppm ASTM D5185m >200 92 68 45 Chromium ppm ASTM D5185m >15 <1	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Chromium ppm ASTM D5185m >15 <1 <1 0 Nickel ppm ASTM D5185m >15 0 0 0 Silver ppm ASTM D5185m 25 0 0 0 Aduminum ppm ASTM D5185m >225 0 0 0 Lead ppm ASTM D5185m >2200 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >15 0 0 0 Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m >25 0 0 0 0 Aluminum ppm ASTM D5185m >200 0 <1	Iron	ppm	ASTM D5185m	>200	92	68	45
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >25 0 0 0 Lead ppm ASTM D5185m >225 0 0 0 0 Copper ppm ASTM D5185m >225 0 0 0 0 Copper ppm ASTM D5185m >25 0 0 0 0 Cadmium ppm ASTM D5185m >25 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Magnaese ppm ASTM D5185m <1	Chromium	ppm	ASTM D5185m	>15	<1	<1	0
Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >25 0 0 <1	Nickel	ppm	ASTM D5185m	>15	0	0	0
Silver ppm ASTM D5185m 0 0 0 Aluminum ppm ASTM D5185m >25 0 0 <1	Titanium		ASTM D5185m		0	0	0
Aluminum ppm ASTM D5185m >25 0 0 <1 Lead ppm ASTM D5185m >100 0 0 0 Copper ppm ASTM D5185m >200 0 <1	Silver		ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >100 0 0 0 Copper ppm ASTM D5185m >200 0 <1	Aluminum			>25		0	<1
Copper ppm ASTM D5185m >200 0 <1 <1 Tin ppm ASTM D5185m >25 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Magnese ppm ASTM D5185m <1							
Tin ppm ASTM D5185m >25 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Magnesse ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m <1 0 0 0 Calcium ppm ASTM D5185m 79 61 63 22 2 Phosphorus ppm ASTM D5185m 79 61 63 5 Silicon ppm ASTM D5185m >00 0 0 0 Sodium ppm ASTM D5185m >20 6 3							
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnese ppm ASTM D5185m <1							
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnese ppm ASTM D5185m <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1					-		
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesse ppm ASTM D5185m <1							
Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Maganese ppm ASTM D5185m 1 <1		ρμπ		11	-	-	-
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m <1				limit/base			
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1							
Marganesse ppm ASTM D5185m <1							
Magnesium ppm ASTM D5185m <1	-						
Calcium ppm ASTM D5185m 5 2 2 Phosphorus ppm ASTM D5185m 79 61 63 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 907 876 711 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 3 5 Sodium ppm ASTM D5185m >50 6 3 5 Sodium ppm ASTM D5185m >20 0 <1 0 Potassium ppm ASTM D5185m >20 0 <1 0 Water % ASTM D6304 >0.2 0.397 0.088 0.151 opm Water ppm ASTM D7647 >2000 Particles >4µm ASTM D7647 >20000 Particles >4µm ASTM D7647 >640 Particles >	-						
Phosphorus ppm ASTM D5185m 79 61 63 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 907 876 711 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 3 5 Sodium ppm ASTM D5185m >50 6 3 5 Sodium ppm ASTM D5185m >20 0 <1	-	ppm				0	
Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 907 876 711 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 3 5 Sodium ppm ASTM D5185m >50 6 3 5 Sodium ppm ASTM D5185m >20 0 <1	Calcium	ppm	ASTM D5185m		5	2	2
Sulfur ppm ASTM D5185m 907 876 711 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 3 5 Sodium ppm ASTM D5185m >50 6 3 5 Potassium ppm ASTM D5185m >20 0 <1	Phosphorus	ppm	ASTM D5185m		79	61	63
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 6 3 5 Sodium ppm ASTM D5185m >50 6 3 5 Sodium ppm ASTM D5185m >20 0 <1	Zinc	ppm	ASTM D5185m		0	0	0
Silicon ppm ASTM D5185m >50 6 3 5 Sodium ppm ASTM D5185m <1	Sulfur	ppm	ASTM D5185m		907	876	711
Sodium ppm ASTM D5185m <1 <1 0 Potassium ppm ASTM D5185m >20 0 <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 <1 0 Water % ASTM D6304 >0.2 ▲ 0.397 0.088 0.151 opm Water ppm ASTM D6304 >2000 ▲ 3970 880 1510 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >20000 Particles >6µm ASTM D7647 >20000 Particles >6µm ASTM D7647 >640 Particles >14µm ASTM D7647 >640 Particles >21µm ASTM D7647 >160 Particles >38µm ASTM D7647 >10 Particles >71µm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16	Silicon	ppm	ASTM D5185m	>50	6	3	5
Water % ASTM D6304 >0.2 ▲ 0.397 0.088 0.151 opm Water ppm ASTM D6304 >2000 ▲ 3970 880 1510 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >20000 Particles >6µm ASTM D7647 >5000 Particles >6µm ASTM D7647 >640 Particles >14µm ASTM D7647 >640 Particles >21µm ASTM D7647 >160 Particles >38µm ASTM D7647 >10 Particles >71µm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		<1	<1	0
Water % ASTM D6304 >0.2 ▲ 0.397 0.088 0.151 opm Water ppm ASTM D6304 >2000 ▲ 3970 880 1510 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >20000 Particles >6µm ASTM D7647 >20000 Particles >6µm ASTM D7647 >5000 Particles >14µm ASTM D7647 >640 Particles >21µm ASTM D7647 >160 Particles >38µm ASTM D7647 >10 Particles >71µm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history	Potassium	ppm	ASTM D5185m	>20	0	<1	0
oppm Water ppm ASTM D6304 >2000 ▲ 3970 880 1510 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >20000 Particles >6µm ASTM D7647 >5000 Particles >6µm ASTM D7647 >640 Particles >14µm ASTM D7647 >640 Particles >21µm ASTM D7647 >160 Particles >38µm ASTM D7647 >10 Particles >71µm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304	>0.2	0.397	0.088	0.151
Particles >4µm ASTM D7647 >20000 Particles >6µm ASTM D7647 >5000 Particles >14µm ASTM D7647 >640 Particles >14µm ASTM D7647 >640 Particles >21µm ASTM D7647 >160 Particles >38µm ASTM D7647 >10 Particles >71µm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history2	ppm Water	ppm	ASTM D6304	>2000	A 3970	880	1510
Particles >6µm ASTM D7647 >5000 Particles >14µm ASTM D7647 >640 Particles >14µm ASTM D7647 >640 Particles >21µm ASTM D7647 >160 Particles >38µm ASTM D7647 >40 Particles >38µm ASTM D7647 >40 Particles >71µm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >640 Particles >21μm ASTM D7647 >160 Particles >21μm ASTM D7647 >100 Particles >38μm ASTM D7647 >40 Particles >38μm ASTM D7647 >10 Particles >71μm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm		ASTM D7647	>20000			
Particles >21μm ASTM D7647 >160 Particles >38μm ASTM D7647 >40 Particles >38μm ASTM D7647 >40 Particles >71μm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>5000			
Particles >38μm ASTM D7647 >40 Particles >71μm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm		ASTM D7647	>640			
Particles >38μm ASTM D7647 >40 Particles >71μm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm		ASTM D7647	>160			
Particles >71μm ASTM D7647 >10 Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >38µm		ASTM D7647	>40			
Oil Cleanliness ISO 4406 (c) >21/19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>10			
	Oil Cleanliness						
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045	0.51	0.24		

Sample Rating Trend

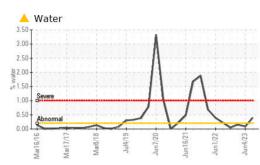
WATER

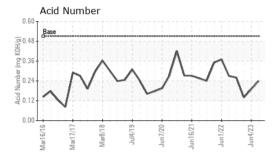
Report Id: SMIMID [WUSCAR] 05933722 (Generated: 08/25/2023 16:40:07) Rev: 1

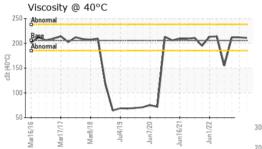
Contact/Location: SERVICE MANAGER ? - SMIMID



OIL ANALYSIS REPORT

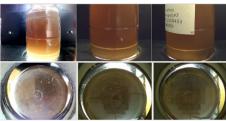






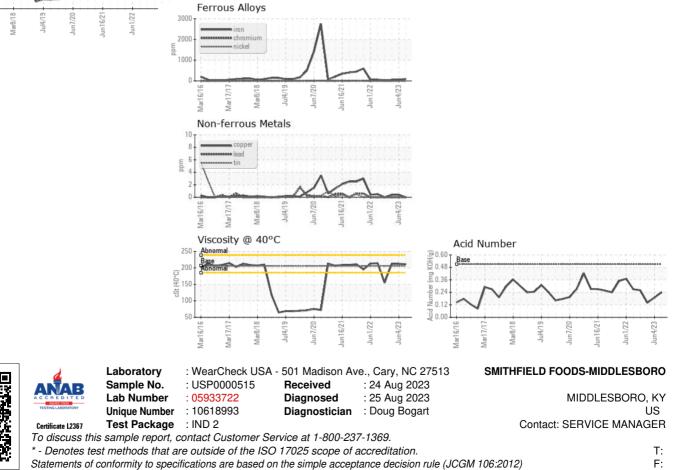
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	MODER	MODER
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	A MODER	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	🔺 MODER	🔺 MODER
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	🔺 HAZY	🔺 HAZY	🔺 HAZY
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	0.2%	0.2%	0.2%
Free Water	scalar	*Visual		<u> </u>	1 .0	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	205.8	211	212	212
SAMPLE IMAGES	S	method	limit/base	current	history1	history2
						utox seet #7 23558411

Color



Bottom





Contact/Location: SERVICE MANAGER ? - SMIMID