# **PROBLEM SUMMARY**



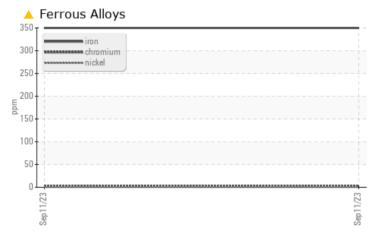
# Sample Rating Trend WEAR

## Machine Id SILO #28

Component Gearbox Fluid

# PETRO CANADA ENDURATEX EP 220 (--- GAL)

## COMPONENT CONDITION SUMMARY



#### RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIO	C TES	<b>FRESULT</b>	S		
Sample Status				ABNORMAL	 
Iron	ppm	ASTM D5185(m)	>200	<u> </u>	 

#### Customer Id: TAVTAV Sample No.: PC0077114 Lab Number: 02585660 Test Package: IND 2



To manage this report scan the QR code

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*To change component or sample information:* Gloria Gonzalez +1 (289)291-4643 x4643 <u>gloria.gonzalez@wearcheck.com</u>

RECOMMENDED	O 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.
Resample			?	We recommend an early resample to monitor this condition.
Information Required			?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

HISTORICAL DIAGNOSIS



# **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Machine Id SILO #28 Component

Gearbox Fluid

## PETRO CANADA ENDURATEX EP 220 (--- GAL)

## DIAGNOSIS

### Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

#### 🔺 Wear

Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

#### Contamination

There is no indication of any contamination in the oil.

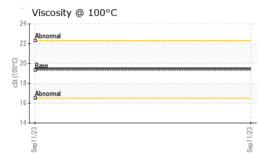
#### Fluid Condition

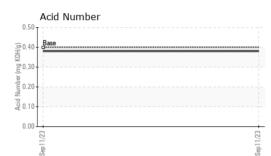
The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

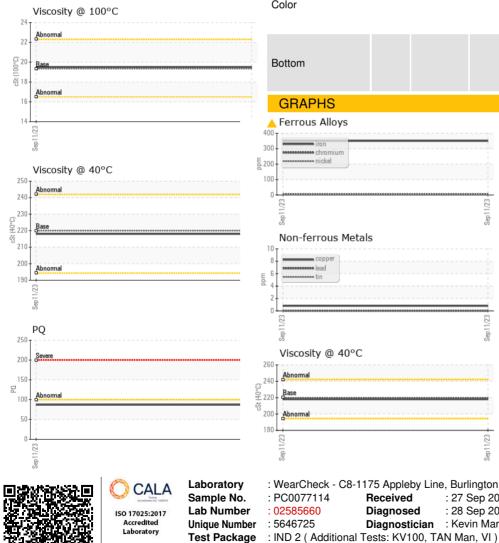
GAL)				Sep2023		
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PC0077114		
Sample Date		Client Info		11 Sep 2023		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				ABNORMAL		
WEAR METAL	S	method	limit/base	current	history1	history2
PQ		ASTM D8184*		87		
Iron	ppm	ASTM D5185(m)	>200	<b>A</b> 350		
Chromium	ppm	ASTM D5185(m)	>15	3		
Nickel	ppm	ASTM D5185(m)	>15	<1		
Titanium	ppm	ASTM D5185(m)		0		
Silver	ppm	ASTM D5185(m)		<1		
Aluminum	ppm	ASTM D5185(m)	>25	<1		
Lead	ppm	ASTM D5185(m)	>100	0		
Copper	ppm	ASTM D5185(m)	>200	<1		
Tin	ppm	ASTM D5185(m)	>25	0		
Antimony	ppm	ASTM D5185(m)	>5	0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	60	40		
Barium	ppm	ASTM D5185(m)	0	0		
Molybdenum	ppm	ASTM D5185(m)	0	0		
Manganese	ppm	ASTM D5185(m)	0	2		
Magnesium	ppm	ASTM D5185(m)	0	<1		
Calcium	ppm	ASTM D5185(m)	0	10		
Phosphorus	ppm	ASTM D5185(m)	270	251		
Zinc	ppm	ASTM D5185(m)	0	6		
Sulfur	ppm	ASTM D5185(m)	11200	5861		
Lithium	ppm	ASTM D5185(m)		<1		
CONTAMINAN	ITS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>50	6		
Sodium	ppm	ASTM D5185(m)		<1		
Potassium	ppm	ASTM D5185(m)	>20	0		
FLUID DEGRA		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	0.38		



# **OIL ANALYSIS REPORT**







Dodor       scalar       Visual*       NORML       NO         Emulsified Water       scalar       Visual*       >0.2       NE         Free Water       scalar       Visual*       >0.2       NE         Free Water       scalar       Visual*       NE         FLUID PROPERTIES       method       limit/base       c         Visce @ 40°C       cSt       ASTM D7279(m)       220       218         Visce @ 100°C       cSt       ASTM D7279(m)       19.35       19.4         Visco @ 100°C       cSt       ASTM D7279(m)       19.35       19.4         Scottom       Scale       ASTM D7279(m)       19.35       19.4         Sottom       Scale       ASTM D2270*       99       101         Scottom       Scale       ASTM D2270*       99       101         Sottom       Scale       Scale       Scale       Scale       Scale       Scale         Non-ferrous Alloys       Scale	NE        NE        NE        NE        RML        RML        Si        Si	            history2
Precipitate scalar Visual* NONE NO Silt scalar Visual* NONE NO Sand/Dirt scalar Visual* NONE NO Sand/Dirt scalar Visual* NONE NO Sand/Dirt scalar Visual* NONE NO Sand/Dirt scalar Visual* NORML NO Sand/Dirt scalar Visual* NORML NO Solor scalar Visual* NORML NO Emulsified Water scalar Visual* Sol (1990) FLUID PROPERTIES method limit/base c Visco @ 40°C cSt ASTM D7279(m) 19.35 19. Viscosity Index (VI) Scale ASTM D7270* 99 101 SAMPLE IMAGES method limit/base c Color GRAPHS Ferrous Alloys Viscosity @ 40°C Acid	NE        NE        NE        RML        RML        RML        RML        RML        RML        RML	       history2
silt scalar Visual* NONE NO bebris scalar Visual* NONE NO and/Dirt scalar Visual* NONE NO popearance scalar Visual* NORML NO dor scalar Visual* NORML NO mulsified Water scalar Visual* NORML NO mulsified Water scalar Visual* NORML NO frice Water scalar Visual* O.2 NE fEUID PROPERTIES method limit/base c fisc @ 40°C cSt ASTM D7279(m) 220 218 fisc @ 100°C cSt ASTM D7279(m) 19.35 19. fiscosity Index (VI) Scale ASTM D7270* 99 101 SAMPLE IMAGES method limit/base c color bottom C GRAPHS Ferrous Alloys Ferrous Alloys Viscosity @ 40°C Acid	VE        VE        NE        RML        A        A        A        A        A        A	      history2
silt scalar Visual* NONE NO bebris scalar Visual* NONE NO and/Dirt scalar Visual* NONE NO popearance scalar Visual* NORML NO dor scalar Visual* NORML NO mulsified Water scalar Visual* NORML NO mulsified Water scalar Visual* NORML NO frice Water scalar Visual* O.2 NE fEUID PROPERTIES method limit/base c fisc @ 40°C cSt ASTM D7279(m) 220 218 fisc @ 100°C cSt ASTM D7279(m) 19.35 19. fiscosity Index (VI) Scale ASTM D7270* 99 101 SAMPLE IMAGES method limit/base c color bottom C GRAPHS Ferrous Alloys Ferrous Alloys Viscosity @ 40°C Acid	NE NE RML RML RML RML RML RML RTTEN history1 	    history2
And/Dirt scalar Visual* NONE NO Appearance scalar Visual* NORML NO Ador scalar Visual* NORML NO imulsified Water scalar Visual* >0.2 NE ree Water scalar Visual* >0.2 NE FLUID PROPERTIES method limit/base c Fisc @ 40°C cSt ASTM D7279(m) 220 216 Fisc @ 100°C cSt ASTM D7279(m) 19.35 19. Fiscosity Index (VI) Scale ASTM D2270* 99 101 SAMPLE IMAGES method limit/base c Solor Color Bottom P Solor Non-ferrous Metals Viscosity @ 40°C Acid	NE RML RML RML RML RTTENT history1	    history2
Appearance scalar Visual* NORML NO   Odor scalar Visual* NORML NO   Simulsified Water scalar Visual* >0.2 NE   Free Water scalar Visual* NE NE   FLUID PROPERTIES method limit/base c   Viscosity Index (VI) Scale ASTM D7279(m) 220 218   Viscosity Index (VI) Scale ASTM D7279(m) 19.35 19.35   SAMPLE IMAGES method limit/base c   Color Saturn Scale Stimular Scale   Sottom Scale Scale Scale Scale   Scale Scale Scale Scale Scale  <	RML RML A A C history1	   history2
Appearance scalar Visual* NORML NO   Dodor scalar Visual* NORML NO   Emulsified Water scalar Visual* >0.2 NE   Free Water scalar Visual* NE NE   FLUID PROPERTIES method limit/base c   Visco @ 40°C cSt ASTM D7279(m) 220 218   Visco @ 100°C cSt ASTM D7279(m) 19.35 19.35   Visco @ 100°C cSt ASTM D7279(m) 19.35 19.35   SAMPLE IMAGES method limit/base c   Color Color Color Color Color   Bottom Color Color Color Color   Soutom Color Color Color Color   Color Color Color Color Color   Soutom Color Color Color Color   Color Color Color Color Color   Soutom Color Color Color Color   Color Color Color Color Color   Soutom Color Color Color Color	RML RML A A C history1	   history2
Dodor       scalar       Visual*       NORML       NO         Emulsified Water       scalar       Visual*       >0.2       NE         Free Water       scalar       Visual*       NE         FLUID PROPERTIES       method       limit/base       c         Astm D7279(m)       220       218         Astm D7279(m)       19.35       19.         Soldor       Astm D7279(m)       19.35         Soldor       Imit/base       c         Color       Imit/base       c         Soltom       Imit/base       c         Non-ferrous Alloys       PQ       Imit/base       Imit/base         Imit chromium       Imit chromium       Imit chromium       Imit chromium         Imit chromium       Imit chromium       Imit chromium       Imit chromium         Imit chromium       Imit chromium       Imit chromium       Imit chromium<	RML 3 3 Irrrent history1 	  history2
Emulsified Water scalar Visual* >0.2 NE   Free Water scalar Visual* NE   FLUID PROPERTIES method limit/base c   /isc @ 40°C cSt ASTM D7279(m) 220 218   /isc @ 100°C cSt ASTM D7279(m) 19.35 19.   /isc @ 100°C cSt ASTM D2270* 99 101   SAMPLE IMAGES method limit/base c   Color Imit /base c   Bottom Imit /base c   Sottom Imit /base c   Sottom Imit /base c   Viscosity @ 40°C Viscosity @ 40°C Acid	rrrent history1	  history2
Free Water scalar Visual* NE   FLUID PROPERTIES method limit/base c   /isc @ 40°C cSt ASTM D7279(m) 220 218   /isc @ 100°C cSt ASTM D7279(m) 19.35 19.   SAMPLE IMAGES method limit/base c   Color color color color   Bottom color color color   Non-ferrous Alloys pq 101   Color color color   Sector color color   Sottom color color <td>rrent history1</td> <td> history2</td>	rrent history1	 history2
FLUID PROPERTIES method limit/base c   /isc @ 40°C cSt ASTM D7279(m) 220 218   /isc @ 100°C cSt ASTM D7279(m) 19.35 19.   /isc osity Index (VI) Scale ASTM D2270° 99 101   SAMPLE IMAGES method limit/base c   Color Color Color Color Color   Bottom Color Color Color Color   Soutom Color Color Color   Soutom Color	irrent history1	history2
/isc @ 40°C       cSt       ASTM D7279(m)       220       218         /isc @ 100°C       cSt       ASTM D7279(m)       19.35       19.         /iscosity Index (VI)       Scale       ASTM D2270*       99       101         SAMPLE IMAGES       method       limit/base       c         Color       Image: Color       Image: Color       Image: Color         Bottom       Image: Color       Image: Color       Image: Color         Non-ferrous Alloys       PQ       Image: Color       Image: Color         Viscosity @ 40°C       Image: Color       Image: Color       Image: Color		
Viscosity index (VI) Scale ASTM D7279(m) 19.35 19. Viscosity Index (VI) Scale ASTM D2270° 99 101 SAMPLE IMAGES method limit/base c Color Bottom GRAPHS Ferrous Alloys Viscosity @ 40°C		
Viscosity Index (VI) Scale ASTM D2270° 99 101          SAMPLE IMAGES       method       limit/base       c         Color       Imit/base       c         Bottom       Imit/base       c         Soutom       Imit/base       Imit/base         Soutom       Imit/base       Imit		
SAMPLE IMAGES method limit/base c Color Bottom GRAPHS Ferrous Alloys PQ 00 00 00 00 00 00 00 00 00 0		
Color Bottom GRAPHS Ferrous Alloys PQ 200 500 Ferrous Alloys Non-ferrous Metals Viscosity @ 40°C		
Color Bottom GRAPHS Ferrous Alloys PQ 200 5 Ferrous Alloys Non-ferrous Metals Viscosity @ 40°C	went biotom	history
Bottom GRAPHS Ferrous Alloys PQ 200 200 100 100 100 100 100 100	Irrent history1	history2
Bottom GRAPHS Ferrous Alloys PQ 200 200 100 100 100 100 100 100		
Ferrous Alloys PQ 200 200 200 100 100 100 100 100	no image	no image
GRAPHS       Ferrous Alloys       Image: strain of the strain of th		
GRAPHS       Ferrous Alloys       Image: strain of the strain of th		
GRAPHS       Ferrous Alloys       Image: strain of the strain of th		
Ferrous Alloys PQ 200 200 200 200 180 160 160 100 100 100 100 100 10	no image	no image
Ferrous Alloys PQ 200 200 200 200 180 160 160 100 100 100 100 100 10		
Ferrous Alloys PQ 200 200 200 200 180 160 160 100 100 100 100 100 10		
Viscosity @ 40°C		
Viscosity @ 40°C		
Non-ferrous Metals		
Viscosity @ 40°C		
Viscosity @ 40°C		
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		c v v
Abnormal         ➡ 0.40         Base         ■ 0.30           Base         ■ 0.30         ■ 0.30         ■ 0.30	lumber	
Base 0.30	Number	ŝ
0.20	Number	c c 
Abnormal	Number	c c c
	Number	2 2 2
5 7 7	Number	
Sep 11/23 Sep 11/23 Sep 11/23	Number	
	Number	
WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H	Vumber	
PC0077114 Received : 27 Sep 2023		

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.

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