

OIL ANALYSIS REPORT

Sample Rating Trend



Component **Hydraulic System** PETRO CANADA HYDREX MV 46 (--- GAL)

DIAGNOSIS

Machine Id 731123

A Recommendation

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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

Fluid Condition

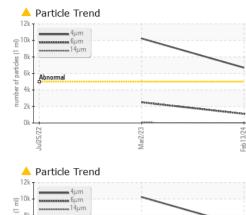
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

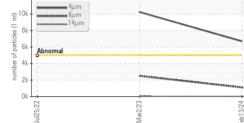
SAMPLE INFOR	JUKULL MILLOLS MOLOCY									
	MATION	method	limit/base	current	history1	history2				
Sample Number		Client Info		GFL0109821	GFL0070220	GFL0033932				
Sample Date		Client Info		13 Feb 2024	02 Mar 2023	25 Jul 2022				
Machine Age	hrs	Client Info		6085	4195	2875				
Oil Age	hrs	Client Info		6085	4195	2875				
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd				
Sample Status				ATTENTION	ABNORMAL	ATTENTION				
CONTAMINAT	ION	method	limit/base	current	history1	history2				
Water		WC Method	>0.1	NEG	NEG	NEG				
WEAR METAL	.S	method	limit/base	current	history1	history2				
Iron	ppm	ASTM D5185m	>20	1	2	1				
Chromium	ppm	ASTM D5185m	>10	0	<1	0				
Nickel	ppm	ASTM D5185m	>10	0	0	0				
Titanium	ppm	ASTM D5185m		0	0	0				
Silver	ppm	ASTM D5185m		0	0	0				
Aluminum	ppm	ASTM D5185m	>10	0	<1	<1				
Lead	ppm	ASTM D5185m	>10	0	0	0				
Copper	ppm	ASTM D5185m	>75	2	2	2				
Tin	ppm	ASTM D5185m	>10	<1	0	0				
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	2	0	0				
Barium	ppm	ASTM D5185m	0	0	0	0				
Molybdenum	ppm	ASTM D5185m	0	2	<1	<1				
Manganese	ppm	ASTM D5185m	1	<1	0	0				
		ASTM D5185m	0	19	4	4				
Magnesium	ppm									
Magnesium Calcium	ppm ppm	ASTM D5185m	50	95	51	49				
0		ASTM D5185m ASTM D5185m	50 330	95 332	51 268	49 302				
Calcium	ppm									
Calcium Phosphorus	ppm ppm	ASTM D5185m	330	332	268	302				
Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	330 430	332 407	268 324	302 358				
Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	330 430 760 limit/base	332 407 887	268 324 882	302 358 993				
Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	330 430 760 limit/base	332 407 887 current	268 324 882 history1	302 358 993 history2				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ITS	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	330 430 760 limit/base >20	332 407 887 current <1	268 324 882 history1 2	302 358 993 history2				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm JTS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	330 430 760 limit/base >20	332 407 887 current <1 <1	268 324 882 history1 2 2	302 358 993 history2 1 <1				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm JTS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m	330 430 760 limit/base >20 >20	332 407 887 current <1 <1 <1 0	268 324 882 history1 2 2 2 0	302 358 993 history2 1 <1 0				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID CLEAN	ppm ppm ppm ppm JTS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	330 430 760 limit/base >20 >20 limit/base	332 407 887 current <1 <1 0 current	268 324 882 history1 2 2 0 history1	302 358 993 history2 1 <1 <1 0 history2				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID CLEAN Particles >4µm	ppm ppm ppm ppm JTS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	330 430 760 limit/base >20 20 limit/base >5000	332 407 887 current <1 <1 0 current 6698	268 324 882 history1 2 2 2 0 0 history1 ▲ 10236	302 358 993 history2 1 <1 <1 0 history2 				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID CLEAN Particles >4µm Particles >6µm	ppm ppm ppm ppm JTS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7647	330 430 760 limit/base >20 20 limit/base >5000 >1300	332 407 887 current <1 <1 <1 0 current € 6698 1104	268 324 882 history1 2 2 2 0 history1 ▲ 10236 ▲ 2507	302 358 993 history2 1 <1 <1 0 history2 				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID CLEAN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm JTS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647	330 430 760 limit/base >20 >20 20 limit/base >5000 >1300 >160	332 407 887 current <1 <1 <1 0 current 6698 1104 23	268 324 882 history1 2 2 2 0 history1 ▲ 10236 ▲ 10236 ▲ 2507 37	302 358 993 history2 1 <1 <1 0 history2 				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID CLEAN Particles >4µm Particles >6µm Particles >14µm Particles >21µm	ppm ppm ppm ppm JTS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	330 430 760 limit/base >20 >20 limit/base >5000 >1300 >160 >40 >10	332 407 887 current <1 <1 <1 0 current ▲ 6698 1104 23 4	268 324 882 history1 2 2 2 0 history1 ▲ 10236 ▲ 10236 ▲ 2507 37 4	302 358 993 history2 1 <1 <1 0 history2 				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID CLEAN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm JTS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	330 430 760 limit/base >20 >20 limit/base >5000 >1300 >160 >40 >10	332 407 887 current <1 <1 <1 0 current ▲ 6698 1104 23 4 0	268 324 882 history1 2 2 2 0 history1 ▲ 10236 ▲ 2507 37 4 0	302 358 993 history2 1 <1 <1 0 history2 				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID CLEAN Particles >4µm Particles >6µm Particles >14µm Particles >38µm Particles >71µm	ppm ppm ppm ppm JTS ppm ppm ppm LINESS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	330 430 760 220 >20 20 20 20 20 20 20 20 20 20 20 20 20 2	332 407 887 current <1 <1 <1 0 current 6698 1104 23 4 0 0 0	268 324 882 history1 2 2 2 0 0 history1 ▲ 10236 ▲ 2507 37 4 0 0 0 0	302 358 993 history2 1 <1 <1 0 history2 				
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium FLUID CLEAN Particles >4µm Particles >4µm Particles >6µm Particles >14µm Particles >21µm Particles >38µm Particles >71µm Oil Cleanliness	ppm ppm ppm ppm JTS ppm ppm ppm LINESS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	330 430 760 20 >20 20 1imit/base >5000 >1300 >160 >10 >10 >3 >19/17/14	332 407 887 current <1 <1 <1 0 current ▲ 6698 1104 23 4 0 0 0 0 20/17/12	268 324 882 2 2 2 0 10236 ▲ 10236 ▲ 2507 37 4 0 0 0 0 0 21/19/12	302 358 993 history2 1 <1 <1 0 history2 				

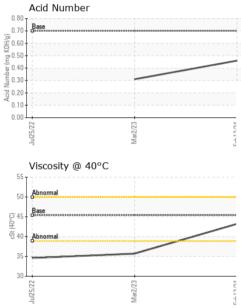
Report Id: GFL836 [WUSCAR] 06090097 (Generated: 02/16/2024 15:05:24) Rev: 1



OIL ANALYSIS REPORT







White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual	NONE			
Precipitate Silt Debris Sand/Dirt Appearance	scalar scalar scalar	*Visual		NONE	NONE	NONE
Silt Debris Sand/Dirt Appearance	scalar scalar		NONE	NONE	NONE	NONE
Debris Sand/Dirt Appearance	scalar		NONE	NONE	NONE	NONE
Sand/Dirt Appearance		*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NONE	NONE	NONE	NONE
	Juaia	*Visual	NONE	NONE	NONE	NONE
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	45.4	43.2	▲ 35.7	▲ 34.6
SAMPLE IMAC	GES	method	limit/base	current	history1	history2
Color						no image
Bottom						no image
GRAPHS						
Ferrous Alloys					nt	т2
8 iron			1,520			720
C management nickel			122,880			-24
ä 4.			30,720	pevere		-22
2-						
	23		52 (E 1,680	Abnormal		-20
ul25//	Mar2//		1,920 Land 1,920		N	-18
2			sappit 480	1		+2: +11 +11 -11 -1-
¹⁰ T			of bar		1. Start 1.	
8 - copper			 			-14
E. 6tintin					1	-11
ā 4.						
2-			8			+1
72 0	/23		42 2			-8
Jul25	Mar2		Feb13			
Viscosity @ 40°C			0	μ 6μ Acid Numebo	14µ 21µ	38µ 71µ
55 T			-0.80		· · · · · · · · · · · · · · · · · · ·	
			YOH 0.60	Base		
50 Abnormal			E 0.40			
30 T L			0.80 0.60 0.60 0.40 0.20 Vmmper Vmmper Vmmper			
5.0 45 (오.45 평 40			≥ 0.20			
30 - Base 			cid			
5.0 45 (오.45 평 40	Mar2/23		Feb13/24	Jui25/22	Mar2/23	
	Visc @ 40°C SAMPLE IMAC Color Bottom GRAPHS Ferrous Alloys	SAMPLE IMAGES Color Bottom GRAPHS Ferrous Alloys Terrous Alloys Non-ferrous Metals	Visc @ 40°C cSt ASTM D445 SAMPLE IMAGES method Color Bottom GRAPHS Ferrous Alloys for the second seco	Visc @ 40°C cSt ASTM D445 45.4 SAMPLE IMAGES method imit/base Color Bottom GRAPHS Ferrous Alloys 00000 00000 0000 00000 0000 00000 00000 00000 0000 0000 0000	Visc @ 40°C cSt ASTM D445 45.4 43.2 SAMPLE IMAGES method imit/base current Color Bottom CRAPHS Ferrous Alloys ORAPHS Non-ferrous Metals Viscosity @ 40°C	Visc @ 40°C cSt ASTM D445 45.4 43.2 A 35.7 SAMPLE IMAGES method imit/base current history1 Color Bottom Ferrous Alloys 0000 00