

OIL ANALYSIS REPORT

Area **KEMP** QUARRIES / BCS - STILLWELL [66212] **WL090**

Rear Differential

Fluid PETRO CANADA PRODURO TO-4 SAE 50 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: $\mbox{PM-3}$ sampled fluid)

Wear

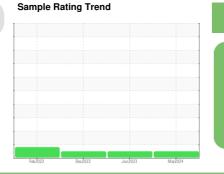
All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The condition of the oil is acceptable for the time in service.





NORMAL

		Feb2022	Dec2022	Jun2023 M	ar2024	
SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0109259	PCA0086383	PCA0061841
Sample Date		Client Info		26 Mar 2024	30 Jun 2023	02 Dec 2022
Machine Age	hrs	Client Info		23090	22640	22251
Oil Age	hrs	Client Info		23090	22640	0
Oil Changed		Client Info		N/A	N/A	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	NC	method	limit/base	current	history1	history2
Water		WC Method	>.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	202	166	148
Chromium	ppm	ASTM D5185m	>10	1	<1	<1
Nickel	ppm	ASTM D5185m	>10	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	2	2
Lead	ppm	ASTM D5185m	>25	2	0	<1
Copper	ppm	ASTM D5185m	>100	14	10	11
Tin	ppm	ASTM D5185m	>10	2	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	41	39	34
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	0	5	3	2
Manganese	ppm	ASTM D5185m	0	2	2	1
Magnesium	ppm	ASTM D5185m	9	60	52	38
Calcium	ppm	ASTM D5185m	3114	2953	2965	2967
Phosphorus	ppm	ASTM D5185m	1099	989	1032	993
Zinc	ppm	ASTM D5185m	1245	1098	1165	1143
Sulfur	ppm	ASTM D5185m	7086	5899	7260	6400
CONTAMINANT	S	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>75	20	18	16
Sodium	ppm	ASTM D5185m		0	<1	0
Potassium	ppm	ASTM D5185m	>20	2	1	<1
VISUAL		method	limit/base	current	history1	history2
	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	scalar	*Visual	NONE	NONE	NONE	NONE
	scalar	*Visual	NONE	NONE	NONE	NONE
	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
			-			

NEG

NEG

NEG

NEG

>.2

Emulsified Water

Free Water

scalar

scalar *Visual

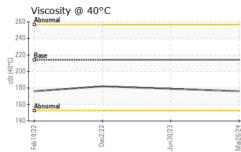
*Visual

NEG

NEG



OIL ANALYSIS REPORT



<u>-</u> -	FLUID PI	ROPERTIE	S method	limit/base	current	history1	history2			
	Visc @ 40°C	cSt	ASTM D44	5 213.9	176	179	182			
	SAMPLE	IMAGES	method	limit/base	current	history1	history2			
55 \$4	Color				no image	no image	no image			
Jun30/23 Mar26/24	Bottom				no image	no image	no image			
	GRAPHS									
	Iron (ppm))	Lead (ppm)							
	Severe			100	- Severe					
	<u>۾</u> 1000			80 E_ 60						
	500 - Abnormal			40	Abnormal					
	0									
	Feb 19/22	Dec2/22	Jun30/23	Mar26/24	Feb19/22	Dec2/22				
	Aluminum		- -		Chromium (p	-	5			
	120 100 Severe	1	1	30	Servere					
	80 -			20						
	톱 60			톱 15 톱 15	Abrement					
	20 - Abnormal									
	0 Feb19/22	Dec2/22	Jun30/23	Mar26/24	Feb19/22	Dec2/22 -				
			Jun3	Mar2		-	2			
	Copper (pp	om)		250	Silicon (ppm)					
	200 - Severe			200						
	150 - Abnormal	1		150 E 100						
	50 -			50	Abnormai					
		22	53			2	2			
	Feb 19/22	Dec2/22	Jun30/23	Mar26/24	Feb 19/22	Dec2/22	*			
	Viscosity @ 260 T abnormal) 40°C		3500	Additives					
	240			3000	Contraction of the second seco	IS				
	220 Base 200 -			2500 톱 2000						
	⁴ / ₅ 180			1500						
	160 Abnormal			1000	TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT					
	Feb 19/22	Dec2/22 -	Jun30/23 -	Mar26/24	Feb19/22	Dec2/22 -				
Laboratory Sample No. Lab Number Unique Number Test Package	: WearCheck U : PCA0109259 : 06135322 : 10954787 : MOB 1	SA - 501 Madi Rec Tes Dia	ison Ave., Ca ceived : sted : gnosed : (ary, NC 27513 01 Apr 2024 02 Apr 2024 04 Apr 2024 - Jonat	Kemp Qu	uarries - Benton Cou				
discuss this sample report, Denotes test methods that tements of conformity to sp	are outside of the	e ISO 17025 s	cope of accr	editation.		tilwell@bentonco 6:2012)	ountystone.co - I			