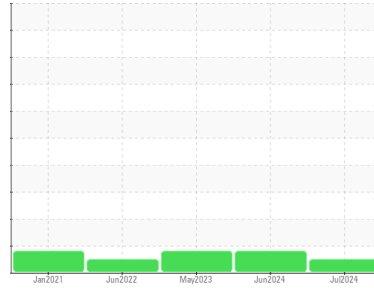


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

1851

Machine Id

1851-5419-8002 - FIRE WATER DIESEL DRIVEN PUMP

Component

Pump

Fluid

{not provided} (15 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PC0057841	PC0057843	PC0057690
Sample Date	Client Info			09 Jul 2024	11 Jun 2024	16 May 2023
Machine Age	mths	Client Info		0	0	0
Oil Age	mths	Client Info		0	0	0
Oil Changed	Client Info			Not Changed	Not Changed	N/A
Sample Status				NORMAL	ATTENTION	ATTENTION

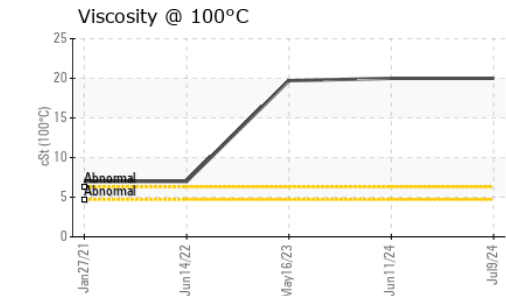
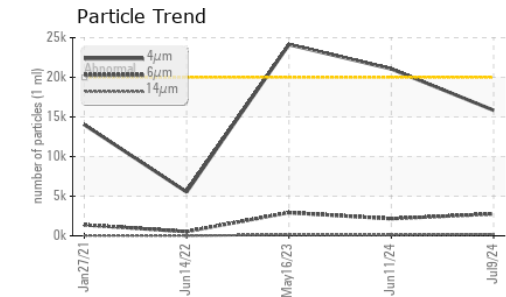
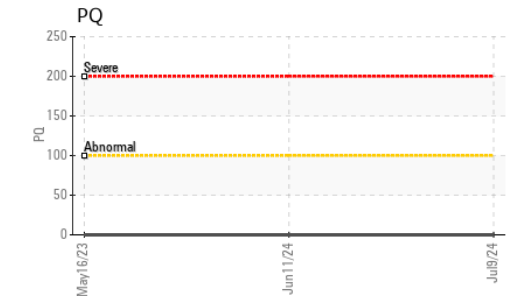
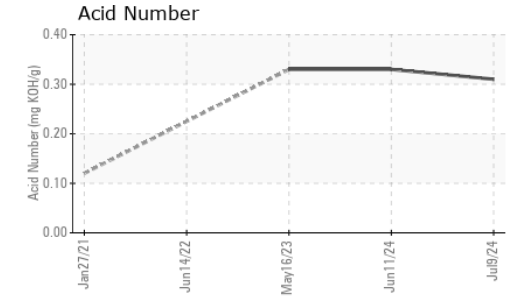
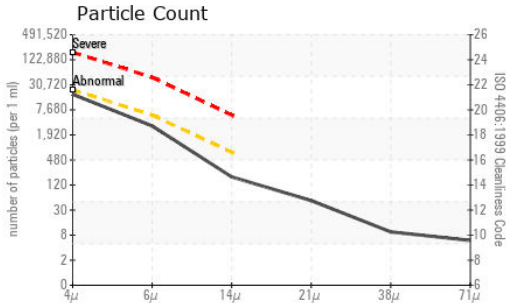
CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>.1	NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m)	>90	4	7	11
Chromium	ppm	ASTM D5185(m)	>5	0	0	0
Nickel	ppm	ASTM D5185(m)	>5	<1	<1	0
Titanium	ppm	ASTM D5185(m)	>3	0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>7	0	<1	0
Lead	ppm	ASTM D5185(m)	>12	0	0	0
Copper	ppm	ASTM D5185(m)	>30	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>9	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	0
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)		<1	<1	<1
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		0	0	0
Manganese	ppm	ASTM D5185(m)		0	0	<1
Magnesium	ppm	ASTM D5185(m)		<1	0	0
Calcium	ppm	ASTM D5185(m)		<1	<1	0
Phosphorus	ppm	ASTM D5185(m)		89	82	83
Zinc	ppm	ASTM D5185(m)		1	3	2
Sulfur	ppm	ASTM D5185(m)		1810	1807	1988
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>60	2	4	10
Sodium	ppm	ASTM D5185(m)		<1	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	0	<1	0

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0057841
Lab Number : 02648672
Unique Number : 5814224
Test Package : IND 2 (Additional Tests: KV100, PQ, PrtCount, VI)

Vale - Voisey's Bay
 Voisey's Bay Mine Site, P.O. Box 7001, Str. C Happy Valley
 Goose Bay, NL
 CA A0P 1C0
 Contact: Robert Feltham
 robert.feltham@vale.com

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.

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	15839	21059	24136	
Particles >6µm	ASTM D7647	>5000	2762	2160	2927	
Particles >14µm	ASTM D7647	>640	166	97	133	
Particles >21µm	ASTM D7647	>160	45	30	35	
Particles >38µm	ASTM D7647	>40	8	5	2	
Particles >71µm	ASTM D7647	>10	5	3	1	
Oil Cleanliness	ISO 4406 (c)	>21/19/16	21/19/15	22/18/14	22/19/14	

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		0.31	0.33	0.33

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	VLITE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>.1	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)		148	148	146
Visc @ 100°C	cSt	ASTM D7279(m)		20.0	20.0	19.7
Viscosity Index (VI)	Scale	ASTM D2270*		156	156	155

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						

Received : 18 Jul 2024
Tested : 19 Jul 2024
Diagnosed : 21 Jul 2024 - Kevin Marson

T:
F: x