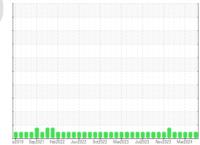


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id

HP-B - K2330B

Compressor

REFRIG COMP OIL ISO 32 (--- GAL)

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the fluid. The amount and size of particulates present in the system are acceptable.

Fluid Condition

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

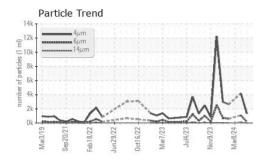
		sr2019 Sep202	1 Feb2022 Jun2022 Oc	2022 Mar2023 Jul2023 Nov2023	Mar2024	
SAMPLE INFORM	MATION	method				history2
Sample Number		Client Info		HLC0003325	HLC0003226	HLC0003196
Sample Date		Client Info		29 Apr 2024	31 Mar 2024	08 Mar 2024
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
	1	un atland	lineit/lenen		la i a ta un ed	history O
CONTAMINATION	N	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	0	<1	<1
Chromium	ppm	ASTM D5185m	>10	0	<1	<1
Nickel	ppm	ASTM D5185m		0	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m		<1	0	0
Aluminum	ppm	ASTM D5185m	>25	0	1	2
Lead	ppm	ASTM D5185m	>25	<1	1	<1
Copper	ppm	ASTM D5185m	>50	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	0	1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	<1
ADDITIVEO						
						hiotory
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	5	current 0	0	0
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	5 5	0 0		0
Boron Barium Molybdenum	• •	ASTM D5185m	5	0 0 0	0	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	5 5	0 0	0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	5 5	0 0 0	0 0 <1	0 0 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5	0 0 0	0 0 <1 <1	0 0 <1 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5	0 0 0 0	0 0 <1 <1 <1	0 0 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 12	0 0 0 0 0	0 0 <1 <1 <1 <1 4	0 0 <1 0 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 12 12	0 0 0 0 0 0	0 0 <1 <1 <1 <1 4 54	0 0 <1 0 1 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 12 12 12	0 0 0 0 0 0 0 11	0 0 <1 <1 <1 <1 4 54	0 0 <1 0 1 4 19
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 12 12 12 12 1000	0 0 0 0 0 0 0 11 0	0 0 <1 <1 <1 <1 4 54 <1 930	0 0 <1 0 1 4 19 0 1016
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 5 5 12 12 12 12 1000	0 0 0 0 0 0 0 11 0 1120	0 0 <1 <1 <1 <1 4 54 <1 930 history1	0 0 <1 0 1 4 19 0 1016
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	5 5 5 12 12 12 12 1000 limit/base >25	0 0 0 0 0 0 11 0 1120 current	0 0 <1 <1 <1 <1 4 54 <1 930 history1	0 0 <1 0 1 4 19 0 1016 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	5 5 5 12 12 12 12 1000 limit/base >25 >20	0 0 0 0 0 0 11 0 1120 current 2 5 <1	0 0 <1 <1 <1 4 54 <1 930 history1 2 2	0 0 <1 0 1 4 19 0 1016 history2 2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	5 5 5 12 12 12 12 1000 limit/base >25	0 0 0 0 0 0 0 11 0 1120 current 2 5 <1	0 0 <1 <1 <1 4 54 <1 930 history1 2 2 1	0 0 <1 0 1 4 19 0 1016 history2 2 2 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	5 5 5 12 12 12 1000 limit/base >25 >20	0 0 0 0 0 0 0 11 0 1120 current 2 5 <1	0 0 <1 <1 <1 4 54 <1 930 history1 2 2 1 history1	0 0 -<1 0 1 4 19 0 1016 history2 2 2 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m	5 5 5 12 12 12 12 1000 limit/base >25 >20 limit/base	0 0 0 0 0 0 11 0 1120 current 2 5 <1 current 1327 143	0 0 <1 <1 <1 <1 <4 54 <1 930 history1 2 2 1 history1 4164 1078	0 0 0 1 0 1 4 19 0 1016 history2 2 2 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 12 12 12 12 1000 limit/base >25 >20 limit/base	0 0 0 0 0 0 11 0 1120 current 2 5 <1 current 1327 143	0 0 <1 <1 <1 <1 <4 54 <1 930 history1 2 2 1 history1 4164 1078 51	0 0 0 1 0 1 4 19 0 1016 history2 2 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 12 12 12 12 1000 limit/base >25 >20 limit/base >2500 >320 >80	0 0 0 0 0 0 0 11 0 1120 current 2 5 <1 current 1327 143 7	0 0 <1 <1 <1 <1 <4 54 <1 930 history1 2 2 1 history1 4164 1078 51	0 0 <1 0 1 4 19 0 1016 history2 2 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 12 12 12 12 1000 limit/base >25 >20 limit/base >2500 >320 >80 >20	0 0 0 0 0 11 0 1120 current 2 5 <1 current 1327 143 7 2 0	0 0 <1 <1 <1 <1 <4 54 <1 930 history1 2 2 1 history1 4164 1078 51 10 1	0 0 -<1 0 1 4 19 0 1016 history2 2 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >5µm Particles >21µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 12 12 12 12 1000 limit/base >25 >20 limit/base >2500 >320 >80 >20 >4	0 0 0 0 0 0 0 11 0 1120 current 2 5 <1 current 1327 143 7 2 0	0 0 <1 <1 <1 <1 <4 54 <1 930 history1 2 2 1 history1 4164 1078 51 10 1	0 0 -<1 0 1 4 19 0 1016 history2 2 2 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	5 5 5 12 12 12 12 1000 limit/base >25 >20 limit/base >2500 >320 >80 >20	0 0 0 0 0 11 0 1120 current 2 5 <1 current 1327 143 7 2 0	0 0 <1 <1 <1 <1 <4 54 <1 930 history1 2 2 1 history1 4164 1078 51 10 1	0 0 -<1 0 1 4 19 0 1016 history2 2 1 history2

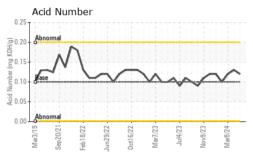


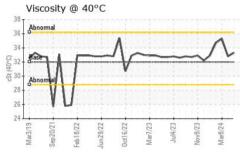
OIL ANALYSIS REPORT

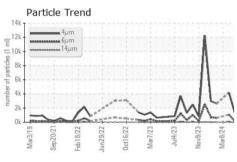
SAMPLE IMAGES

Bottom



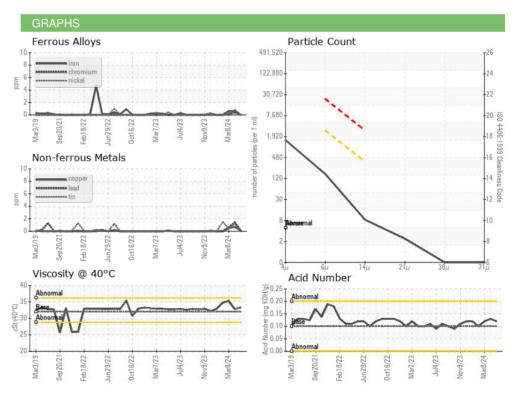






VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
	TIFC	on a the a al		21.11112.124	المرسمة مأما	histom (O
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32	33.3	32.8	35.3

Color		







Laboratory Sample No.

: HLC0003325 Lab Number : 06182058

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 16 May 2024

Tested

: 23 May 2024

Unique Number : 11033384 Diagnosed : 23 May 2024 - Jonathan Hester Test Package : IND 2 (Additional Tests: PrtCount)

Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: (907)659-5377 Contact/Location: PERRY NEEL - BPENOR

HILCORP NORTHSTAR FACILITY

PRUDHOE BAY, AK

pneel@hilcorp.com

T: (907)670-3514

Contact: PERRY NEEL

US 99734