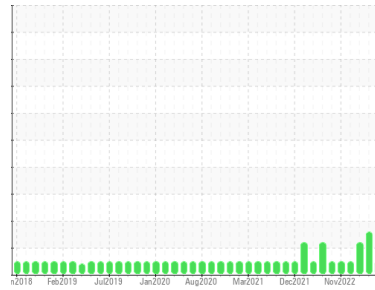




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
E 2610 E 2610
 Component
Natural Gas Engine
 Fluid
MOBIL PEGASUS 89 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.
 NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with 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			HLC0002618	HLC0002542	HLC0002241
Sample Date	Client Info			06 Aug 2023	09 Jun 2023	07 Apr 2023
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	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	2	9	9
Chromium	ppm	ASTM D5185m	>4	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	1	2	2
Lead	ppm	ASTM D5185m	>30	0	1	0
Copper	ppm	ASTM D5185m	>35	2	<1	2
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	<1	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	0	1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	<1	1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		9	10	65
Calcium	ppm	ASTM D5185m		2516	3441	3496
Phosphorus	ppm	ASTM D5185m		234	280	311
Zinc	ppm	ASTM D5185m		247	334	372
Sulfur	ppm	ASTM D5185m		4999	5857	6242

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	8	6	6
Sodium	ppm	ASTM D5185m		1	<1	2
Potassium	ppm	ASTM D5185m	>20	0	4	4

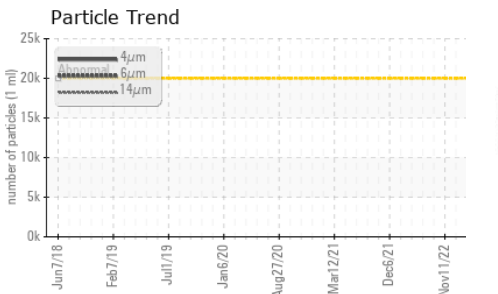
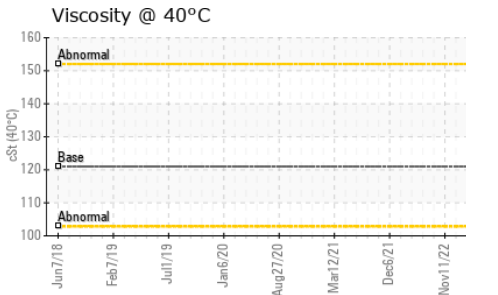
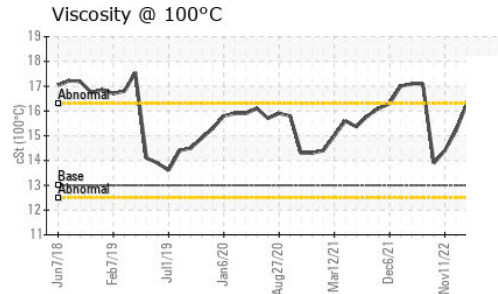
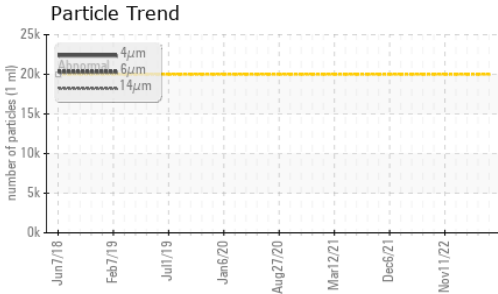
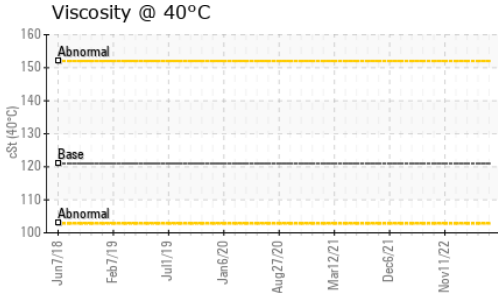
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		0	0.1	0
Nitration	Abs/cm	*ASTM D7624	>20	4.0	25.5	22.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	15.5	33.3	30.5

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	228	---	---
Particles >6µm		ASTM D7647	>5000	53	---	---
Particles >14µm		ASTM D7647	>640	6	---	---
Particles >21µm		ASTM D7647	>160	2	---	---
Particles >38µm		ASTM D7647	>40	0	---	---
Particles >71µm		ASTM D7647	>10	0	---	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	15/13/10	---	---



Hilcorp Alaska, LLC

OIL ANALYSIS REPORT

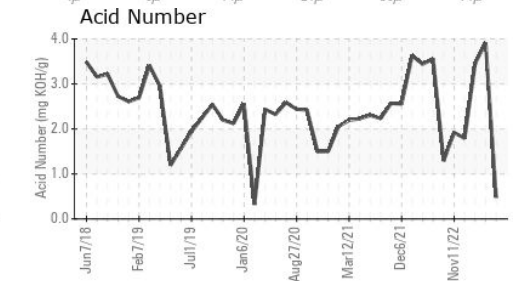
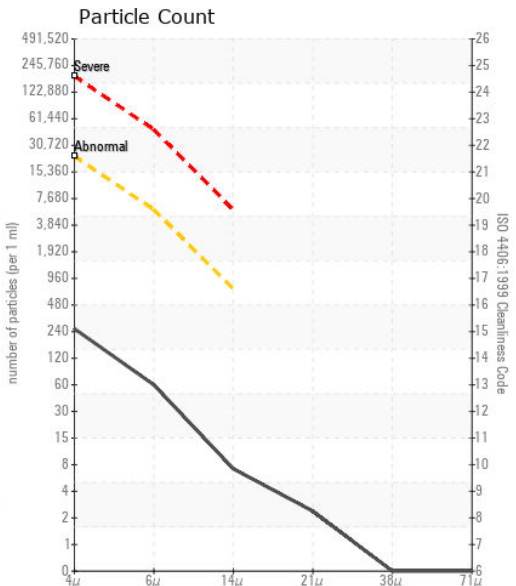
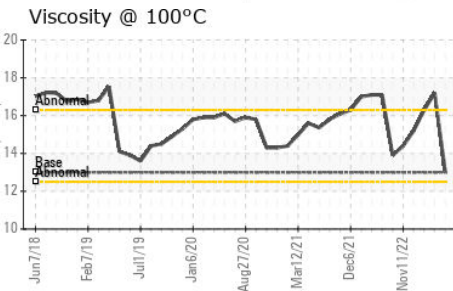
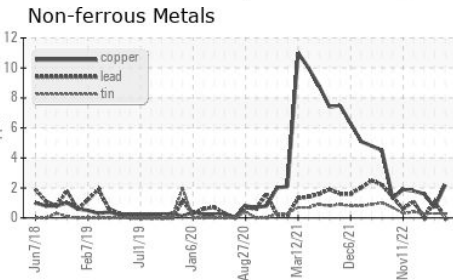
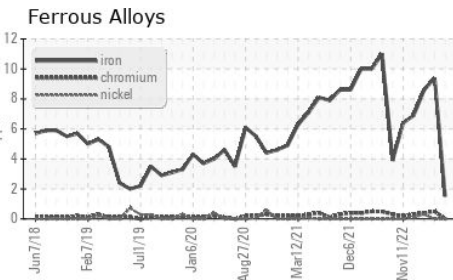


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	*ASTM D7414	>25	6.3	42.2	35.6
Acid Number (AN)	mg KOH/g	ASTM D8045		0.48	▲ 3.91	▲ 3.461

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	NONE	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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	121	123	---	---
Visc @ 100°C	cSt	ASTM D445	13.0	13.04	▲ 17.2	16.3
Viscosity Index (VI)	Scale	ASTM D2270		99	---	---

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HLC0002618 **Received** : 14 Aug 2023
Lab Number : 05924179 **Diagnosed** : 16 Aug 2023
Unique Number : 10604126 **Diagnostician** : Wes Davis
Test Package : IND 2 (Additional Tests: FT-IR, KV40, PrtCount, VI)

HILCORP EXPLORATION ALASKA - MILNE POINT
 1000 MILNE POINT RD
 PRUDOE BAY, AK
 US 99734
 Contact: Evan Reilly
 evan.reilly@hilcorp.com
 T: (907)670-3231
 F: x:

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)