## BHERR E **CONSTRUCTION EQUIPMENT**

## [(341438)] LIEBHERR LH6OC 119413-1528 - Hydraulic System

Sample No: LH0286366

Oil Type: PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL

U Sam	ple Infor	rmation				1
Sample Number		LH0286366	LH0281029	LH0269768	LH0224962	125
Sample Date		16 Apr 2024	24 Jan 2024	21 Sep 2023	27 Oct 2022	AltaSteel
Machine Hours		8962	8175	7642	6459	9401 34 St NW
Oil Hours		0	0	0	0	Edmonton, AB
Oil Changed		Not Changd	Changed	Not Changd	Not Changd	CA T6B 2X6
Sample Status		SEVERE	SEVERE	SEVERE	NORMAL	Contact: Richar
						richard.bailey@
	ondition					T:
			○ 22 E	0.20.1		F:
Visc @ 40°C	cSt	● 37.5	38.5	38.1	38.3	
						Diagnosis
<b>Con</b>	taminati	on				We recommen
Water	%	NEG	NEG	0.017	NEG	filters on this c
Particles >4µm		<b>—</b> 44719	930	0 16332	8733	sampling is su
Particles >6µm		0 14192	0 181	0 7082	2774	results prior to
Particles >14µm		0 1059	0 11	0 1136	244	maintenance a
ISO 4406:1999 (	(c)	23/21/17	17/15/11	21/20/17	20/19/15	performed. Ple
Silicon	ppm	<b>○</b> <1	○ <1	2	01	is a resample Information Fo
Sodium	ppm	02	2	2	2	levels are seve
		$\frown$	$\bigcirc$ 0	◯ <1	◯ <1	
	ppm	0	0	0 <1	0<1	metal levels ar
() Wee	ar Metals	5				metal levels ar There is a moc (particulates <
PQ	ar Metals	<b>5</b> () 12	0 17	0 14		density (PQ) in metal levels ar There is a moc (particulates < present in the serviceable pro
PQ Iron	ar Metals	5 0 12 9 96	<ul><li>○ 17</li><li>○ 97</li></ul>	<ul><li>○ 14</li><li>○ 95</li></ul>		metal levels ar There is a mod (particulates < present in the serviceable pro- contaminant(s
PQ Iron Copper	ppm ppm	5 0 12 96 0 9	0 17	0 14	 () 48 () 9	metal levels ar There is a mod (particulates < present in the serviceable pro- contaminant(s
PQ Iron Copper Lead	ppm ppm ppm	5 0 12 9 96	<ul> <li>○ 17</li> <li>○ 97</li> <li>○ 9</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> </ul>		metal levels au There is a mod (particulates < present in the serviceable pr contaminant(s
PQ Iron Copper Lead Tin	ppm ppm	5 0 12 96 9 0 9 0	<ul> <li>○ 17</li> <li>○ 97</li> <li>○ 9</li> <li>○ 0</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> </ul>	 () 48 () 9 () 1	metal levels au There is a mod (particulates < present in the serviceable pr contaminant(s
PQ Iron Copper Lead Tin Aluminum	ppm ppm ppm ppm ppm	5 0 12 96 9 0 0 0 0	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>0</li> <li>0</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> </ul>	→ ○ 48 ○ 9 ○ 1 ○ 0	metal levels ar There is a moo (particulates < present in the serviceable pro contaminant(s)
PQ Iron Copper Lead Tin Aluminum Chromium	ppm ppm ppm ppm ppm ppm ppm	5	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> </ul>	→ ○ 48 ○ 9 ○ 1 ○ 0 ○ <1	metal levels ar There is a moo (particulates < present in the serviceable pro contaminant(s)
PQ Iron Copper Lead Tin Aluminum Chromium Molybdenum	ppm ppm ppm ppm ppm ppm ppm ppm ppm	S	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>1</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> </ul>	 ○ 48 ○ 9 ○ 1 ○ 0 ○ <1 ○ <1	metal levels ar There is a moo (particulates < present in the serviceable pro contaminant(s)
() Wee	ppm ppm ppm ppm ppm ppm ppm ppm	S	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>1</li> <li>0</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>0</li> </ul>	 ○ 48 ○ 9 ○ 1 ○ 0 ○ <1 ○ <1 ○ 0 ○ <1 ○ 0	metal levels ar There is a mod (particulates < present in the serviceable pro- contaminant(s
PQ Iron Copper Lead Tin Aluminum Chromium Molybdenum Nickel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	S ○ 12 ● 96 ○ 9 ○ 0 ○ 0 ○ <1 ○ 1 ○ 1 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0	<ul> <li>○ 17</li> <li>○ 97</li> <li>○ 9</li> <li>○ 0</li> <li>○ 0</li> <li>○ 0</li> <li>○ 1</li> <li>○ 0</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> &lt;</ul>	 0 48 0 9 0 1 0 0 <1 0 <1 0 0 <1 0 0 <1	metal levels ar There is a moo (particulates < present in the
PQ Iron Copper Lead Tin Aluminum Chromium Molybdenum Nickel Titanium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	S ○ 12 ○ 96 ○ 9 ○ 0 ○ 0 ○ <1 ○ 1 ○ 1 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>1</li> <li>0</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> </ul>	 0 48 0 9 0 1 0 0 <1 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 0 <1 0 0 0 <1 0 0 0 <1 0 0 0 <1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	metal levels ar There is a moo (particulates < present in the serviceable pro contaminant(s)
PQ Iron Copper Lead Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	S 0 12 96 9 0 0 0 - 0 0 - 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>1</li> <li>0</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> &lt;</ul>	 0 48 0 9 1 0 0 <1 0 <1 0 0 <1 0 0 0 0 0 0 0 0 0 0 0 0 0	metal levels au There is a mod (particulates < present in the serviceable pr contaminant(s
Vec PQ Iron Copper Lead Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium	ar Metals ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	S	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>&lt;1</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>1</li> </ul>	 0 48 0 9 1 0 0 <1 0 <1 0 0 <1 0 0 0 1 1 1	metal levels ar There is a mod (particulates < present in the serviceable pro- contaminant(s
PQ Iron Copper Lead Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium	ar Metals ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	<b>5</b> <ul> <li>12</li> <li>96</li> <li>9</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>1</li> <li>0</li> <li>0</li></ul>	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>1</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>0</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> </ul>	 0 48 0 9 1 0 0 <1 0 <1 0 0 <1 0 0 0 0 0 1 0 0	metal levels ar There is a moo (particulates < present in the serviceable pro contaminant(s)
PQ Iron Copper Lead Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium Canadium Calcium	ar Metals ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	S ○ 12 ○ 96 ○ 9 ○ 0 ○ 0 ○ 0 ○ <1 ○ 1 ○ 1 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 2 0 ○ 424	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;469</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>464</li> </ul>	 ○ 48 ○ 9 ○ 1 ○ 0 ○ <1 ○ <1 ○ 0 ○ <1 ○ 0 ○ <1 0 0 ○ 1 0 0 ○ 1 0 0 ○ 514	metal levels au There is a more (particulates < present in the serviceable pr contaminant(s
PQ Iron Copper Lead Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium Calcium Magnesium	ar Metals ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	S ○ 12 ○ 96 ○ 9 ○ 0 ○ 0 ○ 41 ○ 1 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 2 ○ 0 ○ 424 ○ 2	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>1</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1469</li> <li>2</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> &lt;</ul>	 ○ 48 ○ 9 ○ 1 ○ 0 ○ <1 ○ <1 ○ 0 ○ <1 0 0 ○ <1 0 0 ○ 1 0 0 ○ 514 ○ 2	metal levels ar There is a mod (particulates < present in the serviceable pro- contaminant(s
PQ Iron Copper Lead Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium Calcium Magnesium Zinc	ar Metals ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	S	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>1</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>1</li> <li>0</li> <li< td=""><td><ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> &lt;</ul></td><td> ○ 48 ○ 9 ○ 1 ○ 0 ○ &lt;1 ○ &lt;1 ○ 0 ○ &lt;1 ○ 0 ○ &lt;1 0 0 ○ &lt;1 0 0 ○ 1 0 0 ○ 514 ○ 2 ○ 677</td><td>metal levels ar There is a mod (particulates &lt; present in the serviceable pro- contaminant(s</td></li<></ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> &lt;</ul>	 ○ 48 ○ 9 ○ 1 ○ 0 ○ <1 ○ <1 ○ 0 ○ <1 ○ 0 ○ <1 0 0 ○ <1 0 0 ○ 1 0 0 ○ 514 ○ 2 ○ 677	metal levels ar There is a mod (particulates < present in the serviceable pro- contaminant(s
PQ Iron Copper Lead Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium Calcium Magnesium	ar Metals ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	S ○ 12 ○ 96 ○ 9 ○ 0 ○ 0 ○ 41 ○ 1 ○ 0 ○ 0 ○ 0 ○ 0 ○ 0 ○ 2 ○ 0 ○ 424 ○ 2	<ul> <li>17</li> <li>97</li> <li>9</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>1</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> <li>0</li> <li>&lt;1469</li> <li>2</li> </ul>	<ul> <li>14</li> <li>95</li> <li>10</li> <li>&lt;1</li> <li>0</li> <li>&lt;1</li> &lt;</ul>	 ○ 48 ○ 9 ○ 1 ○ 0 ○ <1 ○ <1 ○ 0 ○ <1 0 0 ○ <1 0 0 ○ 1 0 0 ○ 514 ○ 2	metal levels ar There is a moo (particulates < present in the serviceable pro contaminant(s)



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you service the nponent. Reested to confirm test gnificant ivities being se indicate that this your Sample (SIF).Iron ppm e. The low ferrous ex indicates the wear due to corrosion. rate amount of silt 1 microns in size) The oil is still ided that the an be reduced to

Depot: Unique No: Signed: **Report Date:**  ALT940EDM 5762789 Kevin Marson 18 Apr 2024 Submitted By: ?





## **Graphs**

