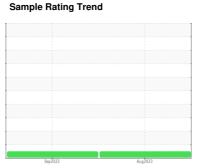


# **OIL ANALYSIS REPORT**



NORMAL



# Machine Id CRANE 16

Component Main Hoist

PETRO CANADA ENDURATEX EP 220 (---

# DIAGNOSIS

### 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

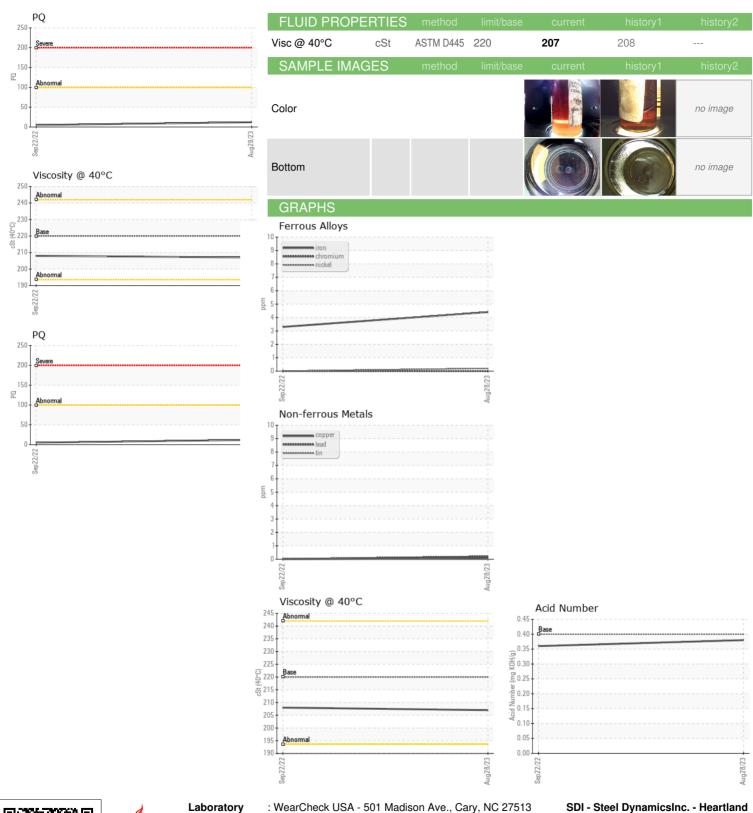
### **Fluid Condition**

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

Sample Number   Client Info   PCA0101593   PCA0079654	GAL)			Sep.2022	Aug 2023		
Sample Date   Client Info   Q8 Aug 2023   22 Sep 2022	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Sample Date   Client Info   28 Aug 2023   22 Sep 2022     Machine Age   hrs   Client Info   0	Sample Number		Client Info		PCA0101593	PCA0079654	
Machine Age   hrs   Client Info   0   0   0   0   0   0   0   0   0			Client Info		28 Aug 2023	22 Sep 2022	
Dil Age	•	hrs					
Dil Changed   Client Info   N/A   Not Changed   NORMAL   NORMAL	-	hrs	Client Info		0		
NORMAL   N					-	Not Changd	
PQ					NORMAL		
ASTM D5185m   >20	WEAR METAL	_S	method	limit/base	current	history1	history2
Chromitum	PQ		ASTM D8184		12	5	
ASTM D5185m   D5185m   D5185m   D6185m   D6185	ron	ppm	ASTM D5185m	>20	4	3	
Description	Chromium	ppm	ASTM D5185m	>20	0	0	
Description	Nickel		ASTM D5185m	>20	<1	0	
Astronomic   Ast	Titanium		ASTM D5185m		0	0	
ASTM D5185m   Section	Silver		ASTM D5185m			0	
ASTM D5185m   >20	-			>20	-		
ASTM D5185m   SON					-		
ASTM D5185m   >20							
Ast							
ADDITIVES				>20	-		
ADDITIVES					-		
Soron   ppm   ASTM D5185m   60   2   2   2		ppm					
Startum							history2
Molybdenum         ppm         ASTM D5185m         0         0         0            Manganese         ppm         ASTM D5185m         0         0         0            Magnesium         ppm         ASTM D5185m         0        1         0            Calcium         ppm         ASTM D5185m         0         12         11            Phosphorus         ppm         ASTM D5185m         270         278         281            Cinc         ppm         ASTM D5185m         0         13         12            Sulfur         ppm         ASTM D5185m         0         10375         12149            CONTAMINANTS         method         limit/base         current         history1         history1         history1         history1         history2         history1         history2         corrent         history1         history2         history2 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Manganese         ppm         ASTM D5185m         0         0         0            Magnesium         ppm         ASTM D5185m         0         <1							
Aggnesium         ppm         ASTM D5185m         0         <1         0	•	ppm					
Calcium         ppm         ASTM D5185m         0         12         11            Phosphorus         ppm         ASTM D5185m         270         278         281            Phosphorus         ppm         ASTM D5185m         0         13         12            Pulfur         ppm         ASTM D5185m         0         10375         12149            CONTAMINANTS         method         limit/base         current         history1         history1           CONTAMINANTS         method         limit/base </td <td>•</td> <td>ppm</td> <td></td> <td></td> <td>-</td> <td></td> <td></td>	•	ppm			-		
Phosphorus         ppm         ASTM D5185m         270         278         281            Zinc         ppm         ASTM D5185m         0         13         12            Sulfur         ppm         ASTM D5185m         11200         10375         12149            Sulfur         ppm         ASTM D5185m         11200         10375         12149            CONTAMINANTS         method         limit/base         current         history1         history1         history1           Solicon         ppm         ASTM D5185m         >15         6         4             Solicon         ppm         ASTM D5185m         >20         <1	•	ppm					
Sulfur	Calcium	ppm	ASTM D5185m	0	12	11	
CONTAMINANTS method limit/base current history1 history1 Solicon ppm ASTM D5185m >15 6 4 Solicon ppm ASTM D5185m >15 6 4 Solicon ppm ASTM D5185m >0 0 0 Solicon ppm ASTM D5185m >0 0 0 Solicon ppm ASTM D5185m >20 <1 0 Solicon ppm ASTM D5185m >20 <1 0  FLUID DEGRADATION method limit/base current history1 history Acid Number (AN) mg KOH/g ASTM D8045 0.40 0.38 0.36  VISUAL method limit/base current history1 history White Metal scalar *Visual NONE NONE NONE NONE Solicon Metal scalar *Visual NONE NONE NONE NONE Solicon Mone NONE NONE NONE NONE NONE Solicon Scalar *Visual NORML NORML NORML NORML Solicon Scalar *Visual NORML NORML NORML	Phosphorus	ppm		270	278	281	
CONTAMINANTS method limit/base current history1 history  Silicon ppm ASTM D5185m >15 6 4 Sodium ppm ASTM D5185m >20 0 0 Potassium ppm ASTM D5185m >20 <1 0  FLUID DEGRADATION method limit/base current history1 history  Acid Number (AN) mg KOH/g ASTM D8045 0.40 0.38 0.36  VISUAL method limit/base current history1 history  Visual NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE  Debris scalar *Visual NONE NONE NONE  Solit NORML NORML NORML NORML NORML  Solit NORML NORML NORML NORML NORML  Solit NORML NORML NORML NORML	Zinc	ppm	ASTM D5185m	0	13	12	
Solicon	Sulfur	ppm	ASTM D5185m	11200	10375	12149	
Codium ppm ASTM D5185m > 20	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1 0  FLUID DEGRADATION method limit/base current history1 history  Acid Number (AN) mg KOH/g ASTM D8045 0.40 0.38 0.36  VISUAL method limit/base current history1 history  White Metal scalar *Visual NONE NONE NONE  Yellow Metal scalar *Visual NONE NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE NONE  Silt scalar *Visual NONE NONE NONE  Debris scalar *Visual NONE NONE NONE NONE  Debris scalar *Visual NORML NORML NORML NORML  Debris scalar *Visual NORML NORML NORML	Silicon	ppm	ASTM D5185m	>15	6	4	
FLUID DEGRADATION method limit/base current history1 history Acid Number (AN) mg KOH/g ASTM D8045 0.40 0.38 0.36  VISUAL method limit/base current history1 history White Metal scalar *Visual NONE NONE NONE Vellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NORML NORML NORML	Sodium	ppm	ASTM D5185m		0	0	
VISUAL method limit/base current history1 history  White Metal scalar *Visual NONE NONE NONE NONE NONE NONE NONE NON	Potassium	ppm	ASTM D5185m	>20	<1	0	
VISUAL method limit/base current history1 history  White Metal scalar *Visual NONE NONE NONE  Vellow Metal scalar *Visual NONE NONE NONE  Precipitate scalar *Visual NONE NONE NONE  Silt scalar *Visual NONE NONE NONE  Debris scalar *Visual NONE LIGHT LIGHT  Sand/Dirt scalar *Visual NONE NONE NONE  Appearance scalar *Visual NORML NORML NORML  Codor scalar *Visual NORML NORML NORML  Emulsified Water scalar *Visual >0.05 NEG NEG	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
White Metal scalar *Visual NONE NONE NONE Vellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE LIGHT LIGHT Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Dodor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	Acid Number (AN)	mg KOH/g	ASTM D8045	0.40	0.38	0.36	
Yellow Metal     scalar     *Visual     NONE     NONE     NONE       Precipitate     scalar     *Visual     NONE     NONE     NONE       Poebris     scalar     *Visual     NONE     LIGHT     LIGHT       Poebris     scalar     *Visual     NONE     NONE     NONE       Poebris     scalar     *Visual     NONE     NONE     NONE       Poebris     scalar     *Visual     NONE     NONE     NONE       Poebris     scalar     *Visual     NORML     NORML     NORML	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE LIGHT LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Dodor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	White Metal	scalar	*Visual	NONE	NONE	NONE	
Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE LIGHT LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Debris scalar *Visual NORML NORML NORML Debris scalar *Visual NONE NONE NORML Debris scalar *Visual NONE NORML NORML Semulsified Water scalar *Visual >0.05 NEG NEG	'ellow Metal	scalar	*Visual	NONE	NONE	NONE	
Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE LIGHT LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Debris scalar *Visual NORML NORML NORML Debris scalar *Visual NONE NONE NORML Debris scalar *Visual NONE NORML NORML Semulsified Water scalar *Visual >0.05 NEG NEG	Precipitate	scalar	*Visual	NONE	NONE	NONE	
Debris scalar *Visual NONE LIGHT LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Ddor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	•	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG			*Visual			LIGHT	
Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG							
Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG							
Emulsified Water scalar *Visual >0.05 NEG NEG	• •						
Free Water scalar *Visual NEG ocathologe BRAD ELLIS - SDI				20.00			



## **OIL ANALYSIS REPORT**







Certificate L2367

Laboratory Sample No. Lab Number Test Package : PLANT

: 05937349 Unique Number : 10622620

: PCA0101593

Received : 29 Aug 2023 : 30 Aug 2023 Diagnosed Diagnostician : Don Baldridge SDI - Steel DynamicsInc. - Heartland 455 West Industrial Drive Terre Haute, IN

US 47802 Contact: BRAD ELLIS

brad.ellis@steeldynamics.com T:

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)

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