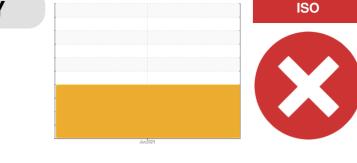
Sample Rating Trend

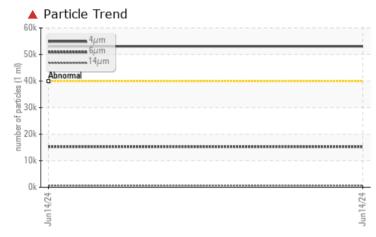


# **PROBLEM SUMMARY**



#### Machine Id A104000115 Component Tank Hydraulic System Fluid PETRO CANADA ATF D3M (--- GAL)

### COMPONENT CONDITION SUMMARY



#### RECOMMENDATION

The component was not specified, however we determined the component was a hydraulic system based on the type of fluid used. Please specify component type with your next sample. We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	 
Particles >6µm	ASTM D7647	>2500	<u> </u>	 
Particles >14µm	ASTM D7647	>80	<b>658</b>	 
Particles >21µm	ASTM D7647	>20	<u> </u>	 
Oil Cleanliness	ISO 4406 (c)	>22/18/13	<b>4</b> 23/21/17	 

Customer Id: SKYGUE Sample No.: WC0610831 Lab Number: 02642332 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

To change component or sample information: Gloria Gonzalez +1 (289)291-4643 x4643 gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS						
Action	Status	Date	Done By	Description		
Change Filter			?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.		
Resample			?	Resample in 30-45 days to monitor this situation.		
Alert			?	The component was not specified, however we determined the component was a hydraulic system based on the type of fluid used. Please specify component type with your next sample.		
Information Required			?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.		
Check Breathers			?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.		
Check Dirt Access			?	We advise that you check all areas where contaminants can enter the system.		
Filter Fluid			?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.		

HISTORICAL DIAGNOSIS



# **OIL ANALYSIS REPORT**

ISO

Machine Id A104000115 Component Tank Hydraulic System Fluid PETRO CANADA ATF D3M (--- GAL)

### DIAGNOSIS

#### Recommendation

The component was not specified, however we determined the component was a hydraulic system based on the type of fluid used. Please specify component type with your next sample. We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

#### Wear

All component wear rates are normal.

#### Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

#### Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0610831		
Sample Date		Client Info		14 Jun 2024		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				SEVERE		
CONTAMINATIC	N	method	limit/base	current	history1	history2
Water		WC Method	>0.05	NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	<1		
Chromium	ppm	ASTM D5185(m)	>20	0		
Nickel	ppm	ASTM D5185(m)	>20	<1		
Titanium	ppm	ASTM D5185(m)		0		
Silver	ppm	ASTM D5185(m)		0		
Aluminum	ppm	ASTM D5185(m)	>20	<1		
Lead	ppm	ASTM D5185(m)	>20	0		
Copper	ppm	ASTM D5185(m)	>20	<1		
Tin	ppm	ASTM D5185(m)	>20	0		
Antimony	ppm	ASTM D5185(m)		0		
Vanadium	ppm	ASTM D5185(m)		0		
Beryllium	ppm	ASTM D5185(m)		0		
Cadmium	ppm	ASTM D5185(m)		0		
ADDITIVES		method	limit/base	current	history1	history2
	ppm	method ASTM D5185(m)	limit/base 98	current 91	history1	history2
Boron	ppm ppm				-	, i i i i i i i i i i i i i i i i i i i
Boron Barium	ppm	ASTM D5185(m)	98	91		
Boron Barium Molybdenum		ASTM D5185(m) ASTM D5185(m)	98	91 <1		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	98	91 <1 0		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	98 <0.00	91 <1 0 0		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	98 <0.00 <1	91 <1 0 0 2		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	98 <0.00 <1 70	91 <1 0 2 75	  	 
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	98 <0.00 <1 70	91 <1 0 2 75 212	   	  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	98 <0.00 <1 70 220	91 <1 0 2 75 212 13	    	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	98 <0.00 <1 70 220	91 <1 0 2 75 212 13 735		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	98 <0.00 <1 70 220 710 <b>limit/base</b>	91 <1 0 2 75 212 13 735 <1 <i>current</i>		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm S	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) <b>method</b> ASTM D5185(m)	98 <0.00 <1 70 220 710	91 <1 0 2 75 212 13 735 <1 <i>current</i> 6	      history1	      history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	98 <0.00 <1 70 220 710 <b>limit/base</b>	91 <1 0 2 75 212 13 735 <1 <i>current</i>	      history1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	98 <0.00 <1 70 220 710 limit/base >15	91 <1 0 2 75 212 13 735 <1 <i>current</i> 6 <1	       history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	98 <0.00 <1 70 220 710 <b>limit/base</b> >15 >20	91 <1 0 2 75 212 13 735 <1 <b>current</b> 6 <1 <1	       history1  	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	98 <0.00 1 70 220 710 <b>limit/base</b> >20 <b>limit/base</b>	91 <1 0 2 75 212 13 735 <1 <u>current</u> 6 <1 <1 <1 <u>current</u> 6 53069	      history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	98 <0.00 <1 70 220 710 imit/base >15 >20 imit/base >40000	91 <1 0 2 75 212 13 735 <1 Current 6 <1 <1 <1 <1 Current 0 0 2 53069 ▲ 15249	      history1   history1 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647	98 <0.00 <1 70 220 710 imit/base >15 >20 imit/base >40000 >2500 >80	91 <1 0 2 75 212 13 735 <1 <i>current</i> 6 <1 <1 <1 <i>current</i> 6 <1 <1 <i>current</i> 6 <1 <1 <i>current</i> 6 <1 <1 <i>current</i> 6 <1 <i>current</i> 6 <i>current</i> 6 <i>current</i> 6 <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i>	       history1   history1  history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	98 <0.00 <1 70 220 710 imit/base >15 >20 imit/base >40000 >2500 >80	91 <1 0 2 75 212 13 735 <1 Current 6 <1 <1 <1 <1 Current 6 <1 <1 53069 ▲ 15249 ▲ 658 ▲ 119	       history1  history1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium FLUID CLEANLII Particles >4µm Particles >4µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	98 <0.00 <1 70 220 710 710 imit/base >15 >20 imit/base >20 imit/base >20 >2500 >2500 >2500 >20 >20	91 <1 0 2 75 212 13 735 <1 <i>current</i> 6 <1 <1 <1 <i>current</i> 6 <1 <1 <i>current</i> 6 <1 <1 <i>current</i> 6 <1 <1 <i>current</i> 6 <1 <i>current</i> 6 <i>current</i> 6 <i>current</i> 6 <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i> <i>current</i>		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	98 <0.00 <1 70 220 710 710 imit/base >15 >20 imit/base >20 imit/base >20 s80 >20	91 <1 0 2 75 212 13 735 <1 Current 6 <1 <1 <1 Current 6 <1 <1 53069 ▲ 15249 ▲ 658 ▲ 119 3		

Page 3 of 4



# **OIL ANALYSIS REPORT**

Acid Number (AN)			limit/base	current	history1	history2
	mg KOH/g	ASTM D974*	0.81	0.72		
VISUAL		method	limit/base	current	history1	history
White Metal	scalar	Visual*	NONE	NONE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	-		
	scalar					
			>0.05			
		visuai"		NEG		
FLUID PROPERT	IES	method	limit/base	current	history1	history
Visc @ 40°C	cSt	ASTM D7279(m)	34.11	31.8		
SAMPLE IMAGES	6	method	limit/base	current	history1	history
Color					no image	no image
						0
Bottom					no imago	po image
Bottom					nonnaye	no image
Ferrous Alloys						
iron				N		
5 - nickel				Abnormal		
0			10010-00	1		
4/24			1 m]) 1 m])			
Juni			1.920 ·			
	s		appitued 480 -			
10 copper			f Jo 120-	· · · · · · · · · · · · · · · · · · ·		
5 tin			and 30-		/	
			8.		1	\
			24			
un14//			7. A			
∼ Viscosity @ 40°C					14µ 21µ	38µ 71
40 Abnormal			\$21.00	r		
35 - Base 230 - 3 - Abnormal			ng KO	Base	****	
30-			4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			
3 Abnormal			UNN PLACE			
<sup>3</sup> 25 - Abnormal			0000			
<sup>3</sup> 25 <b>Abnormal</b> 20 + ++ +++ +++++++++++++++++++++++++++			Jun14/24	Jun14/24		
	Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPERT Visc @ 40°C SAMPLE IMAGES Color Bottom GRAPHS Ferrous Alloys	Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar Free Water scalar Free Water cst SAMPLE IMAGES Color Bottom GRAPHS Ferrous Alloys Non-ferrous Metals	Debris  scalar  Visual*    Sand/Dirt  scalar  Visual*    Appearance  scalar  Visual*    Odor  scalar  Visual*    Emulsified Water  scalar  Visual*    Free Water  scalar  Visual*    Fere Water  scalar  Visual*    For Que 40°C  cSt  ASTM D7279(m)    SAMPLE IMAGES  method  Method    Color  GRAPHS  method    Ferrous Alloys	Debris  scalar  Visual*  NONE    Sand/Dirt  scalar  Visual*  NONE    Appearance  scalar  Visual*  NORML    Odor  scalar  Visual*  NORML    Emulsified Water  scalar  Visual*  NORML    Emulsified Water  scalar  Visual*  NORML    Free Water  scalar  Visual*  >0.05    Free Water  scalar  Visual*  >0.05    Visc @ 40°C  cSt  ASTM D7279(m)  34.11    SAMPLE IMAGES  method  Imit/base    Color  Imit/base  Imit/base    GRAPHS  Ferrous Alloys  Imit/base    Imit inckel  Imit inckel  Imit inckel    Imit inckel  Imit	Debris scalar Visual* NONE NONE Sand/Dirt scalar Visual* NONE NONE Appearance scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Emulsified Water scalar Visual* NORML NORML Visc @ 40°C cSt ASTM D7279(m) 34.11 31.8 SAMPLE IMAGES method Imit/base current Color GRAPHS Ferrous Alloys Orgon Copper Non-ferrous Metals Viscosity @ 40°C ACC ACC ACC ACC ACC ACC ACC ACC ACC A	Debris  scalar  Visual*  NONE     Sand/Dirt  scalar  Visual*  NONE     Appearance  scalar  Visual*  NORML  NORML     Appearance  scalar  Visual*  NORML  NORML     Cdor  scalar  Visual*  NORML  NORML     Emulsified Water  scalar  Visual*  >0.05  NEG     Free Water  scalar  Visual*  >0.05  NEG     FLUID PROPERTIES  method  limit/base  current  history1    Visc @ 40°C  cSt  ASTM 07279(m)  34.11  31.8     SAMPLE IMAGES  method  limit/base  current  history1    Color  Image  no image  no image  0<

Report Id: SKYGUE [WCAMIS] 02642332 (Generated: 06/18/2024 12:35:39) Rev: 1

Contact/Location: Vishal Kanwar - SKYGUE Page 4 of 4