

Customer 8002047 OIL & TRANS/ENOSA  
 Sub-Name ~~SULLANA~~ PIURA CENTRO

City LIMA  
 Unit No.

Location OUTDOOR  
 Other

**NAMEPLATE DATA**

Manufacturer	ABB	Equipment Type	TRANSFORMER
Manufacture Date	1/1/2013	Transformer Class	
Serial No.	201120	Impedance %	29.58
KVA Rating	30,000	Phase/Cycle	3/60
High Voltage	58,000	Liquid Type	OIL
Low Voltage	24,000	Gallons	3,990
Weight	121,033.78	Other Access	

**ADDITIONAL EQUIPMENT**

Radiators	Yes	Conservator Tank	Yes
Fans	Yes	LTC Compartment	Yes
Water Cooled	No	Bushing Location	
Oil Pumps	No	Breather	
Top FPV (inch)		Hose Length (feet)	
Bottom FPV (inch)		Service Online	
InsulationType		Power Available	

**VISUAL INSPECTION**

DATE	LEVEL	SAMPLE TEMP	TOP TEMP	P/V	PAINT	LEAKS	DATE	SERVICE
11/17/15		30	24					
08/16/16	NORMAL				GOOD			
01/31/22		25						
07/24/23		30				YES - BUCHOLZ		

**FIELD SERVICE**

**Additional Information**

Reason Not Tested

**LIQUID SCREEN TEST DATA**

DATE	SERVICE	ACID	IFT	DIEL 877	DIEL 1816	GAP	COLOR	SP. GRAV.	VISUAL	SEDIMENT
01/24/14		0.010 AC	40.4 AC	34 AC			0.50 AC	0.884 AC	CLEAR AC	NONE AC
11/17/15		0.010 AC	44.0 AC	43 AC			0.50 AC	0.871 AC	CLEAR AC	NONE AC
08/16/16		0.010 AC	43.0 AC	41 AC			0.50 AC	0.870 AC	CLEAR AC	NONE AC
01/31/22		0.020 AC	47.0 AC	35 AC			0.50 AC	0.879 AC	CLEAR AC	NONE AC
07/24/23		0.020 AC	41.3 AC	28 QU			0.50 AC	0.876 AC	CLEAR AC	NONE AC

**INHIBITOR CONTENT**

DATE	PCT. BY WEIGHT
01/24/14	<0.02% UN
11/17/15	<0.02% UN
08/16/16	<0.02% UN
01/31/22	0.02% UN
07/24/23	<0.02% UN

NOTE - THIS UNIT HAS A BLADDER OR CONTINUOUS N2 SYSTEM. THEREFORE, THE UNIT DOES NOT REQUIRE INHIBITED OIL. HOWEVER, HAVING INHIBITED OIL WILL PROVIDE ADDITIONAL PROTECTION AGAINST OIL OXIDATION IF THE CURRENT OIL PRESERVATION SYSTEM WERE TO EVER FAIL.

**LIQUID POWER FACTOR**

DATE	25 C	100 C
01/24/14	0.002 AC	0.118 AC
11/17/15	0.003 AC	0.147 AC
08/16/16	0.066 AC	1.740 AC
01/31/22	0.007 AC	0.263 AC
07/24/23	0.022 AC	0.648 AC

KEY TO ABBREVIATIONS: AC - ACCEPTABLE QU - QUESTIONABLE UN - UNACCEPTABLE RS - RESAMPLE

NOTE: \* After a result indicates that the test or service was performed by an outside source.

**Customer** 8002047 OIL & TRANS/ENOSA  
**Sub-Name** ~~CULIANA~~ PIURA CENTRO  
**Location** OUTDOOR

**S/N** 201120  
**Mfg.** ABB  
**Unit No.**

**Gallons** 3,990  
**KVA** 30,000  
**High Volt.** 58,000  
**Low Volt.** 24,000

**KARL FISCHER TESTING MOISTURE CONTENT EXPRESSED IN PPM**

DATE	AVG. TEMP	PPM	PCT. SATURATION	MOISTURE BY DRY WEIGHT PCT.
01/24/14	39	8	6.8 AC	0.62
11/17/15	35	9	9.0 AC	0.90
08/16/16		7	N/A RS	RS
01/31/22	30	10	12.1 AC	1.30
07/24/23	35	15	14.4 AC	1.45

**RECOMMENDATION** RETEST 1 YEAR

The moisture content continues to be acceptable based on the equipment and liquid type. Continued normal monitoring is indicated.

**FURAN ANALYSIS EXPRESSED IN PPB**

DATE	5H2F	2FOL	2FAL	2ACF	5M2F	TOTAL
01/24/14	ND	ND	1	ND	ND	1
11/17/15	ND	ND	1	ND	ND	1
08/16/16	ND	ND	1	ND	ND	1
01/31/22	ND	ND	ND	ND	ND	ND
07/24/23	ND	ND	ND	ND	ND	ND

**RECOMMENDATION** RETEST 1 YEAR

NO DIAGNOSTIC CHANGES ARE NOTED IN FURAN LEVELS SINCE THE PREVIOUS ANALYSIS. THE CELLULOSIC INSULATION APPEARS TO BE IN GOOD CONDITION.

**CALCULATED DP** 800 **EST. LIFE REMAINING** 100%

**GAS-IN-OIL ANALYSIS GAS CHROMATOGRAPHY EXPRESSED IN PPM**

DATE	HYDROGEN	OXYGEN	NITROGEN	METHANE	CARBON MONOXIDE	CARBON DIOXIDE	ETHANE	ETHYLENE	ACETYLENE	TOTAL COMBUST.	TOTAL GAS
01/24/14	30	2,592	10,726	ND	37	177	ND	ND	ND	67	13,562
11/17/15	ND	2,353	7,358	ND	36	178	ND	ND	ND	36	9,925
08/16/16	18	9,310	33,300	4	209	781	ND	ND	ND	231	43,622
01/31/22	6	5,540	35,400	9	607	3,300	ND	ND	ND	622	44,862
07/24/23	163	3,580	20,000	30	371	2,640	3	41	4	612	26,832

**RECOMMENDATION** RETEST 6 MONTHS

K-THE SMALL AMOUNT OF ACETYLENE, EVEN WITHOUT ELEVATED LEVELS OF OTHER COMBUSTIBLE GASES, INDICATES A POSSIBLE ARCING/SPARKING CONDITION OR OTHER SEVERE ELECTRICAL STRESS. POSSIBLE CAUSES INCLUDE ABNORMALITIES RELATED TO DETERIORATED TAP CHANGER CONTACTS, INTERNAL CONNECTIONS, OR THE CORE ASSEMBLY.

**ICP METALS-IN-OIL EXPRESSED IN PPM**

DATE	ALUMINUM	IRON	COPPER
01/24/14	<0.1	<0.03	0.07
11/17/15	<0.1	<0.03	0.31
08/16/16	<0.1	<0.03	0.58
01/31/22	<0.1	<0.03	0.25
07/24/23	<0.1	<0.03	0.14

**RECOMMENDATION** RETEST 1 YEAR

THERE HAS BEEN NO DIAGNOSTIC CHANGE SINCE THE PREVIOUS ANALYSIS. THESE DATA INDICATE NORMAL OPERATION.

**PCB CONTENT EXPRESSED IN PPM**

DATE	1242	1254	1260	OTHER	TOTAL