



# SITE F-GAS REFRIGERANT REGISTER

FOR

NPIA DATA CENTRE, AERODROME RD,  
COLINDALE, LONDON. NW9 5JE

ON BEHALF OF

ACL ENGINEERING LTD

AS AT

01/03/2015 11:35 AM

## SITE F-GAS REFRIGERANT REGISTER

PLANT OPERATOR ACL ENGINEERING LTD				SITE CONTACT (OPERATOR RESPONSIBLE FOR F-GAS COMPLIANCE) DAVID LINDSAY - M&E MANAGER		CLIENT ASSET NUMBER <b>00019</b>
SITE NAME & ADDRESS (PLANT OWNER F-GAS) NPIA DATA CENTRE, AERODROME RD, COLINDALE, LONDON. NW9 5JE				PLANT NAME IPT PROJECT 10+ CHILLER No1		
MANUFACTURER ITP	MODEL C10014	SERIAL 9300	DATE INSTALLED 01/03/2010	COOLING LOAD SERVED COMPUTER ROOM IT COOLING LOAD		
REFRIG TYPE R407C	REFRIG QUANTITY KG (TOTAL) 100.0 KG	REFRIG QUANTITY KG (SYS) 25+25+25+25 KG	REFRIG GWP 1774	EQUIV TONNES CO2e 177.4	F-GAS LEAK TEST FREQUENCY MINIMUM REQUIREMENT HALF YEARLY	

### SITE F-GAS REFRIGERANT REGISTER

#### REFRIGERANT ADDITIONS

DATE	ENGINEER	AMOUNT ADDED (KG)	TIMESHEET NUMBER	REASON FOR ADDITION
16/05/2014	STEVE ORLANDO	27.0 KG	3873	SYS1 - CHARGED SYSTEM WITH VIRGIN CHARGE
16/05/2014	STEVE ORLANDO	27.0 KG	3874	SYS2 - CHARGED SYSTEM WITH VIRGIN CHARGE
16/05/2014	STEVE ORLANDO	27.0 KG	3875	SYS3 - CHARGED SYSTEM WITH VIRGIN CHARGE
16/05/2014	STEVE ORLANDO	27.0 KG	3876	SYS4 - CHARGED SYSTEM WITH VIRGIN CHARGE

#### REFRIGERANT REMOVALS

DATE	ENGINEER	AMOUNT REMOVED (KG)	TIMESHEET NUMBER	REASON FOR ADDITION
22/04/2014	STEVE ORLANDO	16.5 KG	3873	SYS1 - REMOVED REFRIGERANT FOR DESTRUCTION FOR SYSTEM PIPEWORK MODIFICATIONS
24/04/2014	STEVE ORLANDO	15.5 KG	3874	SYS2 - REMOVED REFRIGERANT FOR DESTRUCTION FOR SYSTEM PIPEWORK MODIFICATIONS
29/04/2014	STEVE ORLANDO	16.3 KG	3875	SYS3 - REMOVED REFRIGERANT FOR DESTRUCTION FOR SYSTEM PIPEWORK MODIFICATIONS
05/05/2014	STEVE ORLANDO	20.5 KG	3876	SYS4 - REMOVED REFRIGERANT FOR DESTRUCTION FOR SYSTEM PIPEWORK MODIFICATIONS

#### REFRIGERANT LEAK TEST

DATE	ENGINEER	TEST RESULT	TIMESHEET NUMBER	REASON FOR ADDITION
22/01/2014	STEVE ORLANDO	PASS	3747	PPM - ELECTRONIC LEAK DETECTOR TEST TO ALL SYSTEMS
16/05/2014	STEVE ORLANDO	PASS	3873	SYS1 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
16/05/2014	STEVE ORLANDO	PASS	3874	SYS2 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
16/05/2014	STEVE ORLANDO	PASS	3876	SYS4 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
16/05/2014	STEVE ORLANDO	PASS	3875	SYS3 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
17/05/2014	STEVE ORLANDO	PASS	3877	CARRIED OUT FINAL ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS
29/05/2014	STEVE ORLANDO	PASS	3883	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS
31/10/2014	STEVE ORLANDO	PASS	3942	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON SYSTEMS 2, 3 & 4
31/10/2014	STEVE ORLANDO	FAIL	3942	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON SYSTEM 1. LEAK FOUND ON RECEIVER PRV.
18/02/2015	STEVE ORLANDO	PASS	4120	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON SYSTEMS 2, 3 & 4
18/02/2015	STEVE ORLANDO	FAIL	4120	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON SYSTEM 1. LEAK FOUND ON RECEIVER PRV.

#### FOLLOW UP ACTIONS

DATE	ENGINEER	RELATED TO TEST ON	TIMESHEET NUMBER	REASON FOR ADDITION
31/10/2014	STEVE ORLANDO	15/07/2014	3942	PPM - QUOTATION RE-SUBMITTED FOR THE REPAIR OF THE REFRIGERANT LEAK.
18/02/2015	STEVE ORLANDO	15/07/2014	4120	PPM - QUOTATION RE-SUBMITTED FOR THE REPAIR OF THE REFRIGERANT LEAK.

#### TESTING AUTOMATIC LEAK DETECTION SYSTEM (IF FITTED)

DATE	ENGINEER	TEST RESULT	TIMESHEET NUMBER	REASON FOR ADDITION

## SITE F-GAS REFRIGERANT REGISTER

PLANT OPERATOR ACL ENGINEERING LTD				SITE CONTACT (OPERATOR RESPONSIBLE FOR F-GAS COMPLIANCE) DAVID LINDSAY - M&E MANAGER		CLIENT ASSET NUMBER 00020
SITE NAME & ADDRESS (PLANT OWNER F-GAS) NPIA DATA CENTRE, AERODROME RD, COLINDALE, LONDON. NW9 5JE				PLANT NAME IPT PROJECT 10+ CHILLER No2		
MANUFACTURER ITP	MODEL C10014	SERIAL 9302	DATE INSTALLED 01/03/2010	COOLING LOAD SERVED COMPUTER ROOM IT COOLING LOAD		
REFRIG TYPE R407C	REFRIG QUANTITY KG (TOTAL) 100.0 KG	REFRIG QUANTITY KG (SYS) 25+25+25+25 KG	REFRIG GWP 1774	EQUIV TONNES CO2e 177.4	F-GAS LEAK TEST FREQUENCY MINIMUM REQUIREMENT HALF YEARLY	

### SITE F-GAS REFRIGERANT REGISTER

**REFRIGERANT ADDITIONS**

DATE	ENGINEER	AMOUNT ADDED (KG)	TIMESHEET NUMBER	REASON FOR ADDITION

**REFRIGERANT REMOVALS**

DATE	ENGINEER	AMOUNT REMOVED (KG)	TIMESHEET NUMBER	REASON FOR ADDITION

**REFRIGERANT LEAK TEST**

DATE	ENGINEER	TEST RESULT	TIMESHEET NUMBER	REASON FOR ADDITION
22/01/2014	STEVE ORLANDO	PASS	3748	PPM - ELECTRONIC LEAK DETECTOR TEST TO ALL SYSTEMS
29/05/2014	STEVE ORLANDO	PASS	3884	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS
31/10/2014	STEVE ORLANDO	PASS	3943	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS
18/02/2015	STEVE ORLANDO	PASS	4121	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS

**FOLLOW UP ACTIONS**

DATE	ENGINEER	RELATED TO TEST ON	TIMESHEET NUMBER	REASON FOR ADDITION

**TESTING AUTOMATIC LEAK DETECTION SYSTEM (IF FITTED)**

DATE	ENGINEER	TEST RESULT	TIMESHEET NUMBER	REASON FOR ADDITION

## SITE F-GAS REFRIGERANT REGISTER

PLANT OPERATOR ACL ENGINEERING LTD				SITE CONTACT (OPERATOR RESPONSIBLE FOR F-GAS COMPLIANCE) DAVID LINDSAY - M&E MANAGER		CLIENT ASSET NUMBER <b>00021</b>
SITE NAME & ADDRESS (PLANT OWNER F-GAS) NPIA DATA CENTRE, AERODROME RD, COLINDALE, LONDON. NW9 5JE				PLANT NAME IPT PROJECT 10+ CHILLER No3		
MANUFACTURER	MODEL	SERIAL	DATE INSTALLED	COOLING LOAD SERVED		
ITP	C10014	9303	01/03/2010	COMPUTER ROOM IT COOLING LOAD		
REFRIG TYPE	REFRIG QUANTITY KG (TOTAL)	REFRIG QUANTITY KG (SYS)	REFRIG GWP	EQUIV TONNES CO2e	F-GAS LEAK TEST FREQUENCY MINIMUM REQUIREMENT	
R407C	100.0 KG	25+25+25+25 KG	1774	177.4	HALF YEARLY	

### SITE F-GAS REFRIGERANT REGISTER

#### REFRIGERANT ADDITIONS

DATE	ENGINEER	AMOUNT ADDED (KG)	TIMESHEET NUMBER	REASON FOR ADDITION
07/05/2014	STEVE ORLANDO	27.0 KG	3868	SYS1 - CHARGED SYSTEM WITH VIRGIN CHARGE
07/05/2014	STEVE ORLANDO	27.0 KG	3869	SYS2 - CHARGED SYSTEM WITH VIRGIN CHARGE
07/05/2014	STEVE ORLANDO	27.0 KG	3870	SYS3 - CHARGED SYSTEM WITH VIRGIN CHARGE
07/05/2014	STEVE ORLANDO	27.0 KG	3871	SYS4 - CHARGED SYSTEM WITH VIRGIN CHARGE
06/02/2015	STEVE ORLANDO	22.5 KG	4118	SYS1 - ADDED VIRGIN CHARGE AFTER BURN-OUT CLEAN-UP PROCEDURES
06/02/2015	STEVE ORLANDO	22.5 KG	4118	SYS4 - ADDED VIRGIN CHARGE AFTER BURN-OUT CLEAN-UP PROCEDURES

#### REFRIGERANT REMOVALS

DATE	ENGINEER	AMOUNT REMOVED (KG)	TIMESHEET NUMBER	REASON FOR ADDITION
28/01/2014	STEVE ORLANDO	25.3 KG	3755	SYS 3 - REMOVED MOISTURE CONTAMINATED REFRIGERANT CHARGE FOR DESTRUCTION
28/01/2014	STEVE ORLANDO	24.0 KG	3755	SYS 4 - REMOVED REFRIGERANT CHARGE FOR PRESSURE TESTING COMMON HEAT EXCHANGE
07/04/2014	STEVE ORLANDO	23.5 KG	3868	SYS1 - REMOVED REFRIGERANT FOR DESTRUCTION FOR SYSTEM PIPEWORK MODIFICATIONS
10/04/2014	STEVE ORLANDO	19.5 KG	3869	SYS2 - REMOVED REFRIGERANT FOR DESTRUCTION FOR SYSTEM PIPEWORK MODIFICATIONS
26/01/2015	STEVE ORLANDO	23.3 KG	4118	SYS1 - RECOVERED CONTAMINATED REFRIGERANT FOR DESTRUCTION
26/01/2015	STEVE ORLANDO	24.0 KG	4118	SYS4 - RECOVERED CONTAMINATED REFRIGERANT FOR DESTRUCTION

#### REFRIGERANT LEAK TEST

DATE	ENGINEER	TEST RESULT	TIMESHEET NUMBER	REASON FOR ADDITION
23/01/2014	STEVE ORLANDO	PASS	3749	PPM - ELECTRONIC LEAK DETECTOR TEST TO SYSTEMS 1, 2 & 4.
23/01/2014	STEVE ORLANDO	FAIL	3749	PPM - HIGH MOISTURE CONTENT SYSTEM 3, SUSPECT SYSTEM 3 HAS EVAPORATOR LEAK.
29/01/2014	STEVE ORLANDO	PASS	3755	SYSTEM No3 - REFRIGERATION SYSTEM HELD A 12 BARG PRESSURE TEST. HEAT EXCHANGER OK
29/01/2014	STEVE ORLANDO	PASS	3755	SYSTEM 4 - REFRIGERATION SYSTEM HELD A 12 BARG PRESSURE TEST. HEAT EXCHANGER OK
07/05/2014	STEVE ORLANDO	PASS	3871	SYS4 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
07/05/2014	STEVE ORLANDO	PASS	3870	SYS3 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
07/05/2014	STEVE ORLANDO	PASS	3869	SYS2 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
07/05/2014	STEVE ORLANDO	PASS	3868	SYS1 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
07/05/2014	STEVE ORLANDO	PASS	3872	CARRIED OUT FINAL ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS
29/05/2014	STEVE ORLANDO	PASS	3885	PPM - CARRIED OUT FINAL ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS
31/10/2014	STEVE ORLANDO	PASS	3944	PPM - CARRIED OUT FINAL ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS
06/02/2015	STEVE ORLANDO	PASS	4118	SYS1 - OFN PRESSURE TEST AND VACUUM RISE TEST
06/02/2015	STEVE ORLANDO	PASS	4118	SYS4 - OFN PRESSURE TEST AND VACUUM RISE TEST
06/02/2015	STEVE ORLANDO	PASS	4118	CARRIED OUT ELECTRONIC LEAK TEST ON ALL SYSTEMS
23/02/2015	STEVE ORLANDO	PASS	4122	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON SYSTEMS 1, 2 & 4
23/02/2015	STEVE ORLANDO	FAIL	4122	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON SYSTEM 3. LEAK FOUND ON COMPRESSOR 5

#### FOLLOW UP ACTIONS

DATE	ENGINEER	RELATED TO TEST ON	TIMESHEET NUMBER	REASON FOR ADDITION
23/02/2015	STEVE ORLANDO	23/02/2015	4122	PPM - QUOTATION RE-SUBMITTED FOR THE REPAIR OF THE REFRIGERANT LEAK.

#### TESTING AUTOMATIC LEAK DETECTION SYSTEM (IF FITTED)

DATE	ENGINEER	TEST RESULT	TIMESHEET NUMBER	REASON FOR ADDITION
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## SITE F-GAS REFRIGERANT REGISTER

PLANT OPERATOR ACL ENGINEERING LTD				SITE CONTACT (OPERATOR RESPONSIBLE FOR F-GAS COMPLIANCE) DAVID LINDSAY - M&E MANAGER		CLIENT ASSET NUMBER <b>00022</b>
SITE NAME & ADDRESS (PLANT OWNER F-GAS) NPIA DATA CENTRE, AERODROME RD, COLINDALE, LONDON. NW9 5JE				PLANT NAME IPT PROJECT 10+ CHILLER No4		
MANUFACTURER ITP	MODEL C10014	SERIAL 9301	DATE INSTALLED 01/03/2010	COOLING LOAD SERVED COMPUTER ROOM IT COOLING LOAD		
REFRIG TYPE R407C	REFRIG QUANTITY KG (TOTAL) 100.0 KG	REFRIG QUANTITY KG (SYS) 25+25+25+25 KG	REFRIG GWP 1774	EQUIV TONNES CO2e 177.4	F-GAS LEAK TEST FREQUENCY MINIMUM REQUIREMENT 785.0 KG	

### SITE F-GAS REFRIGERANT REGISTER

#### REFRIGERANT ADDITIONS

DATE	ENGINEER	AMOUNT ADDED (KG)	TIMESHEET NUMBER	REASON FOR ADDITION
28/05/2014	STEVE ORLANDO	27.0 KG	3878	SYS1 - CHARGED SYSTEM WITH VIRGIN CHARGE
28/05/2014	STEVE ORLANDO	27.0 KG	3879	SYS2 - CHARGED SYSTEM WITH VIRGIN CHARGE
28/05/2014	STEVE ORLANDO	27.0 KG	3880	SYS3 - CHARGED SYSTEM WITH VIRGIN CHARGE
28/05/2014	STEVE ORLANDO	27.0 KG	3881	SYS4 - CHARGED SYSTEM WITH VIRGIN CHARGE

#### REFRIGERANT REMOVALS

DATE	ENGINEER	AMOUNT REMOVED (KG)	TIMESHEET NUMBER	REASON FOR ADDITION
14/05/2014	STEVE ORLANDO	22.0 KG	3878	SYS1 - REMOVED REFRIGERANT FOR DESTRUCTION FOR SYSTEM PIPEWORK MODIFICATIONS
14/05/2014	STEVE ORLANDO	21.0 KG	3879	SYS2 - REMOVED REFRIGERANT FOR DESTRUCTION FOR SYSTEM PIPEWORK MODIFICATIONS
14/05/2014	STEVE ORLANDO	13.0 KG	3881	SYS4 - REMOVED REFRIGERANT FOR DESTRUCTION FOR SYSTEM PIPEWORK MODIFICATIONS
14/05/2014	STEVE ORLANDO	3.5 KG	3880	SYS3 - REMOVED REFRIGERANT FOR DESTRUCTION FOR SYSTEM PIPEWORK MODIFICATIONS

#### REFRIGERANT LEAK TEST

DATE	ENGINEER	TEST RESULT	TIMESHEET NUMBER	REASON FOR ADDITION
23/01/2014	STEVE ORLANDO	PASS	3750	PPM - ELECTRONIC LEAK DETECTOR TEST TO ALL SYSTEMS
28/05/2014	STEVE ORLANDO	PASS	3878	SYS1 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
28/05/2014	STEVE ORLANDO	PASS	3879	SYS2 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
28/05/2014	STEVE ORLANDO	PASS	3881	SYS4 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
28/05/2014	STEVE ORLANDO	PASS	3880	SYS3 - NITROGEN PRESSURE TEST & EVACUATION RISE TEST
29/05/2014	STEVE ORLANDO	PASS	3882	PPM - CARRIED OUT FINAL ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS
31/10/2014	STEVE ORLANDO	PASS	3945	PPM - CARRIED OUT FINAL ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS
23/02/2015	STEVE ORLANDO	PASS	4123	PPM - CARRIED OUT ELECTRONIC LEAK TEST ON ALL 4 SYSTEMS

#### FOLLOW UP ACTIONS

DATE	ENGINEER	RELATED TO TEST ON	TIMESHEET NUMBER	REASON FOR ADDITION

#### TESTING AUTOMATIC LEAK DETECTION SYSTEM (IF FITTED)

DATE	ENGINEER	TEST RESULT	TIMESHEET NUMBER	REASON FOR ADDITION