METHOD VALIDATION DRAEGER ALCOTEST 9510
ROBUSTNESS/ RUGGEDNESS TEST B - LOW TEMPERATURE CONDITIONS PAGE 1

DRAEGER ALCOTEST 9510 SERIAL NUMBER: ARAF-0030

AMBIENT AIR THERMOMETER NUMBER: 90940026

0.04

AMBIENT TEMPERATURE START: 58.3
AMBIENT TEMPERATURE FINISH: 59

	I/R	E/C
Simulator #:	DR1361	DR1361
Sim Therm#:	DR1361	DR1361
Batch#:	12038	12038
Reference Value:	0.0407	0.0407
	0.034	0.035
	0.035	0.035
	0.036	0.036
	0.037	0.037
	0.037	0.037
Mean:	0.0358	0.0360
SD:	0.0013	0.0010
Bias %:	-12.04	-11.55
CV %:	3.63	2.78

0.08

AMBIENT TEMPEATURE START: 58.8
AMBIENT TEMPERATURE FINISH: 59.2

	I/R	E/C
	DR1361	DR1361
	DR1361	DR1361
	T00003	T00003
	0.0820	0.0820
	0.069	0.068
	0.072	0.072
	0.075	0.073
	0.076	0.075
	0.077	0.077
Mean:	0.0738	0.0730
SD:	0.0033	0.0034
Bias %:	-10.00	-10.98
CV %:	4.47	4.66

0.15

AMBIENT TEMPERATURE START: 61.9
AMBIENT TEMPERATURE FINISH: 58.3

	I/R	E/C
Simulator #:	DR1361	DR1361
Sim Therm#:	DR1361	DR1361
Batch#:	T00004	T00004
Reference Value:	0.1537	0.1537
	0.139	0.136
	0.140	0.138
	0.141	0.138
	0.140	0.137
	0.140	0.137
Mean:	0.1400	0.1372
SD:	0.0007	0.0008
Bias %:	-8.91	-10.74
CV %:	0.50	0.58

DRY GAS Standard

AMBIENT TEMPEATURE START: 58.3
AMBIENT TEMPERATURE FINISH: 58.3

	I/R	E/C
	n/a	n/a
	n/a	n/a
	765817	765817
	0.0800	0.0800
	0.083	0.083
	0.082	0.082
	0.082	0.082
	0.082	0.082
	0.083	0.082
Mean:	0.0824	0.0822
SD:	0.0005	0.0004
Bias %:	3.00	2.75
CV %:	0.61	0.49

Rev'd By: K. Denton 4/25/13

ATTACH OR PASTE PRINTOUTS BELOW

INSTRUMENT NUMBER: ARAF-0030

TEMPERATURE TEST TYPE: (CIRCLE ONE) NORMAL HIGH LOW

Low Temp.

```
**********************
WASHINGTON
ALCOTEST 9510

SERIAL NO.:      ARAF-0030
TEST NO.:            00064
DATE:          04/24/2013
**********************
SUPERVISOR TEST
**********************
              g/210L   TIME
DIAGNOSTIC OK          13:24
AIR BLANK     0.000    13:24
EXT STD IR    0.139    13:24
EXT STD EC    0.136    13:24
AIR BLANK     0.000    13:26
EXT STD IR    0.140    13:27
EXT STD EC    0.138    13:27
AIR BLANK     0.000    13:28
EXT STD IR    0.141    13:29
EXT STD EC    0.138    13:29
AIR BLANK     0.000    13:30
EXT STD IR    0.140    13:31
EXT STD EC    0.137    13:31
AIR BLANK     0.000    13:32
EXT STD IR    0.140    13:33
EXT STD EC    0.137    13:33
AIR BLANK     0.000    13:34
DIAGNOSTIC OK          13:34
**********************
```

```
**********************
WASHINGTON
ALCOTEST 9510

SERIAL NO.:      ARAF-0030
TEST NO.:            00065
DATE:          04/24/2013
**********************
SUPERVISOR TEST
**********************
              g/210L   TIME
DIAGNOSTIC OK          13:47
AIR BLANK     0.000    13:47
EXT STD IR    0.069    13:47
EXT STD EC    0.068    13:47
AIR BLANK     0.000    13:49
EXT STD IR    0.072    13:49
EXT STD EC    0.072    13:49
AIR BLANK     0.000    13:51
EXT STD IR    0.075    13:51
EXT STD EC    0.073    13:51
AIR BLANK     0.000    13:53
EXT STD IR    0.076    13:53
EXT STD EC    0.075    13:53
AIR BLANK     0.000    13:55
EXT STD IR    0.077    13:55
EXT STD EC    0.077    13:55
AIR BLANK     0.000    13:56
DIAGNOSTIC OK          13:57
**********************
```

```
**********************
WASHINGTON
ALCOTEST 9510

SERIAL NO.:      ARAF-0030
TEST NO.:            00066
DATE:          04/24/2013
**********************
SUPERVISOR TEST
**********************
              g/210L   TIME
DIAGNOSTIC OK          14:07
AIR BLANK     0.000    14:07
EXT STD IR    0.034    14:08
EXT STD EC    0.035    14:08
AIR BLANK     0.000    14:09
EXT STD IR    0.035    14:10
EXT STD EC    0.035    14:10
AIR BLANK     0.000    14:11
EXT STD IR    0.036    14:12
EXT STD EC    0.036    14:12
AIR BLANK     0.000    14:13
EXT STD IR    0.037    14:14
EXT STD EC    0.037    14:14
AIR BLANK     0.000    14:15
EXT STD IR    0.037    14:16
EXT STD EC    0.037    14:16
AIR BLANK     0.000    14:16
DIAGNOSTIC OK          14:17
**********************
```

```
**********************
WASHINGTON
ALCOTEST 9510

SERIAL NO.:      ARAF-0030
TEST NO.:            00067
DATE:          04/24/2013
**********************
SUPERVISOR TEST
**********************
              g/210L   TIME
DIAGNOSTIC OK          14:26
AIR BLANK     0.000    14:26
EXT STD IR    0.083    14:27
EXT STD EC    0.083    14:27
AIR BLANK     0.000    14:28
EXT STD IR    0.082    14:29
EXT STD EC    0.082    14:29
AIR BLANK     0.000    14:30
EXT STD IR    0.082    14:31
EXT STD EC    0.082    14:31
AIR BLANK     0.000    14:32
EXT STD IR    0.082    14:33
EXT STD EC    0.082    14:33
AIR BLANK     0.000    14:34
EXT STD IR    0.083    14:35
EXT STD EC    0.082    14:35
AIR BLANK     0.000    14:35
DIAGNOSTIC OK          14:36
**********************
```

METHOD VALIDATION DRAEGER ALCOTEST 9510
ROBUSTNESS/ RUGGEDNESS TEST B - LOW TEMPERATURE CONDITIONS PAGE 1

DRAEGER ALCOTEST 9510 SERIAL NUMBER: ARAH-0100

AMBIENT AIR THERMOMETER NUMBER: 9090026

	0.04		0.08	
AMBIENT TEMPERATURE START:	58.5		59.7	
AMBIENT TEMPERATURE FINISH:	57.9		57.9	
	I/R	E/C	I/R	E/C
Simulator #:	DR4807	DR4807	DR4807	DR4807
Sim Therm#:	DR4807	DR4807	DR4807	DR4807
Batch#:	T00006	T00006	T00003	T00003
Reference Value:	0.0408	0.0408	0.0820	0.0820
	0.035	0.036	0.072	0.073
	0.035	0.036	0.074	0.075
	0.036	0.036	0.074	0.075
	0.036	0.036	0.074	0.075
	0.036	0.037	0.074	0.075
Mean:	0.0356	0.0362	0.0736	0.0746
SD:	0.0005	0.0004	0.0009	0.0009
Bias %:	-12.75	-11.27	-10.24	-9.02
CV %:	1.40	1.10	1.22	1.21

	0.15		GAS STANDARD	
AMBIENT TEMPERATURE START:	61.8		58.3	
AMBIENT TEMPERATURE FINISH:	58.9		58.8	
	I/R	E/C	I/R	E/C
Simulator #:	DR4807	DR4807	N/A	N/A
Sim Therm#:	DR4807	DR4807	N/A	N/A
Batch#:	T00004	T00004	765817	765817
Reference Value:	0.1537	0.1537	0.0800	0.0800
	0.137	0.136	0.078	0.082
	0.138	0.137	0.078	0.082
	0.139	0.139	0.078	0.082
	0.138	0.138	0.078	0.082
	0.138	0.139	0.078	0.082
Mean:	0.1380	0.1378	0.0780	0.0820
SD:	0.0007	0.0013	0.0000	0.0000
Bias %:	-10.21	-10.34	-2.50	2.50
CV %:	0.51	0.94	0.00	0.00

Rev'd K Denton 4/25/13

ATTACH OR PASTE PRINTOUTS BELOW

INSTRUMENT NUMBER: ARAH-0100

TEMPERATURE TEST TYPE: (CIRCLE ONE) NORMAL HIGH LOW

LOW TEMP.

WASHINGTON
ALCOTEST 9510

SERIAL NO.: ARAH-0100
TEST NO.: 00060
DATE: 04/24/2013

SUPERVISOR TEST

	g/210L	TIME
DIAGNOSTIC OK		13:08
AIR BLANK	0.000	13:08
EXT STD IR	0.137	13:08
EXT STD EC	0.136	13:08
AIR BLANK	0.000	13:10
EXT STD IR	0.138	13:10
EXT STD EC	0.137	13:10
AIR BLANK	0.000	13:12
EXT STD IR	0.139	13:12
EXT STD EC	0.139	13:12
AIR BLANK	0.000	13:14
EXT STD IR	0.138	13:14
EXT STD EC	0.138	13:14
AIR BLANK	0.000	13:16
EXT STD IR	0.138	13:16
EXT STD EC	0.139	13:16
AIR BLANK	0.000	13:17
DIAGNOSTIC OK		13:18

WASHINGTON
ALCOTEST 9510

SERIAL NO.: ARAH-0100
TEST NO.: 00061
DATE: 04/24/2013

SUPERVISOR TEST

	g/210L	TIME
DIAGNOSTIC OK		13:32
AIR BLANK	0.000	13:32
EXT STD IR	0.072	13:33
EXT STD EC	0.073	13:33
AIR BLANK	0.000	13:34
EXT STD IR	0.074	13:35
EXT STD EC	0.075	13:35
AIR BLANK	0.000	13:36
EXT STD IR	0.074	13:36
EXT STD EC	0.075	13:36
AIR BLANK	0.000	13:38
EXT STD IR	0.074	13:38
EXT STD EC	0.075	13:38
AIR BLANK	0.000	13:40
EXT STD IR	0.074	13:40
EXT STD EC	0.075	13:40
AIR BLANK	0.000	13:41
DIAGNOSTIC OK		13:42

WASHINGTON
ALCOTEST 9510

SERIAL NO.: ARAH-0100
TEST NO.: 00063
DATE: 04/24/2013

SUPERVISOR TEST

	g/210L	TIME
DIAGNOSTIC OK		14:05
AIR BLANK	0.000	14:06
EXT STD IR	0.078	14:06
EXT STD EC	0.082	14:06
AIR BLANK	0.000	14:07
EXT STD IR	0.078	14:08
EXT STD EC	0.082	14:08
AIR BLANK	0.000	14:09
EXT STD IR	0.078	14:10
EXT STD EC	0.082	14:10
AIR BLANK	0.000	14:11
EXT STD IR	0.078	14:12
EXT STD EC	0.082	14:12
AIR BLANK	0.000	14:13
EXT STD IR	0.078	14:14
EXT STD EC	0.082	14:14
AIR BLANK	0.000	14:14
DIAGNOSTIC OK		14:15

WASHINGTON
ALCOTEST 9510

SERIAL NO.: ARAH-0100
TEST NO.: 00062
DATE: 04/24/2013

SUPERVISOR TEST

	g/210L	TIME
DIAGNOSTIC OK		13:54
AIR BLANK	0.000	13:54
EXT STD IR	0.035	13:55
EXT STD EC	0.036	13:55
AIR BLANK	0.000	13:56
EXT STD IR	0.035	13:57
EXT STD EC	0.036	13:57
AIR BLANK	0.000	13:58
EXT STD IR	0.036	13:58
EXT STD EC	0.036	13:58
AIR BLANK	0.000	14:00
EXT STD IR	0.036	14:00
EXT STD EC	0.036	14:00
AIR BLANK	0.000	14:02
EXT STD IR	0.036	14:02
EXT STD EC	0.037	14:02
AIR BLANK	0.000	14:03
DIAGNOSTIC OK		14:03