PPE CASE

Personal Protective Equipment Conformity Assessment Studies and Evaluations

Evaluation of a Self-Contained Breathing Apparatus Involved in a Near Miss in the Fire Service

Indianapolis, Indiana Fire Department Requested the Evaluation of a Scott® Safety Air-Pak® Plus 4.5, 4500 psi, 30 minute unit with NIOSH Approval Number TC-13F-76CBRN

As part of the ***National Institute for Occupational Safety and Health (NIOSH), Fire Fighter Fatality Investigation and Prevention Program (FFFIPP)***, the National Personal Protective Technology Laboratory (NPPTL) agreed to examine and evaluate an SCBA unit identified as a Scott® Safety model Air-Pak® Plus 4.5, 4500 psi, 30 minute, self-contained breathing apparatus (SCBA).

NIOSH evaluated an SCBA used by a fire fighter involved in a near miss incident. The SCBA was not found to contribute to the near miss. A qualified service technician should always inspect, repair, test, clean, and replace damaged components of any SCBA involved in an incident before it may be returned to service.

This SCBA status investigation was assigned NIOSH Task Number 20931. The Indianapolis Fire Department was advised that NIOSH NPPTL would provide a written report of the inspection and any applicable test results.

The SCBA unit was shipped to the NIOSH facility in Morgantown, West Virginia. The unit was delivered to the fire investigation laboratory, room 1513, for secure storage and to have a chain of custody form completed on April 29, 2016. The secured storage area consists of shelves behind a cage accompanied with a padlock. The SCBA unit is tracked on the secured cage entry log each time it is removed from the secured storage area for inspection and performance testing.

Disclaimer

The purpose of Respirator Status Investigations is to determine the conformance of each respirator to the NIOSH approval requirements found in Title 42, *Code of Federal Regulations*, Part 84. A number of performance tests are selected from the complete list of Part 84 requirements and each respirator is tested in its "**as received**" condition to determine its conformance to those performance requirements. Each respirator is also inspected to determine its conformance to the quality assurance documentation on file at NIOSH.

In order to gain additional information about its overall performance, each respirator may also be subjected to other recognized test parameters, such as National Fire Protection Association (NFPA) consensus standards. While the test results give an indication of the respirator's conformance to the NFPA approval requirements, NIOSH does not actively correlate the test results from its NFPA test equipment with those of certification organizations which list NFPA-compliant products. Thus, the NFPA test results are provided for information purposes only.

Selected tests are conducted only after it has been determined that each respirator is in a condition that is safe to be pressurized, handled, and tested. Respirators whose condition has deteriorated to the point where the health and safety of NIOSH personnel and/or property is at risk will not be tested.

Investigator Information

The Self-Contained Breathing Apparatus (SCBA) performance tests and inspection were conducted by Angie Andrews, Jeremy Gouzd and Karis Kline of the Morgantown Testing Team, Evaluation and Testing Branch, National Personal Protective Technology Laboratory, National Institute for Occupational Safety and Health, Morgantown, West Virginia. The report was also written by this team.

NIOSH Task Number 20931

SCBA Inspection

The unit was removed from the packaging in room 1513 and inspected on July 18, 2016 by Angie Andrews, Jeremy Gouzd, and Karis Kline of the Morgantown Testing Team (MTT) at NPPTL. The SCBA was visually examined, component by component, in the condition received to determine the conformance of the unit to the NIOSH-approved configuration. The unit was identified as the Scott® Safety Company model Air-Pak® Plus 4.5, 30 minute, 4500 psi unit, NIOSH approval number TC-13F-76CBRN and as the unit submitted by the Indianapolis Fire Department. The visual inspection process was documented photographically.

Once the inspection was completed, the SCBA unit was repackaged and placed back in the secured storage area.

The complete SCBA inspection is summarized in **Appendix I**. The condition of each major component of the SCBA that was photographed with a digital camera is contained in **Appendix III**.

SCBA Testing

The purpose of the testing was to determine how well the SCBA component conformed to the approval performance requirements of Title 42, *Code of Federal Regulations*, Part 84 (42 CFR 84). Further testing was conducted to provide an indication of the SCBA component's conformance to the National Fire Protection Association (NFPA) Airflow Performance requirements of NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus for the Fire Service*, 1997 Edition.

NIOSH SCBA Certification Tests (in accordance with the performance requirements of 42 CFR 84):

1. Positive Pressure Test [§ 84.70(a)(2)(ii)]
2. Rated Service Time Test (duration) [§ 84.95]
3. Static Pressure Test [§ 84.91(d)]
4. Gas Flow Test [§ 84.93]
5. Exhalation Resistance Test [§ 84.91(c)]
6. Remaining Service Life Indicator Test (low-air alarm) [§ 84.83(f)]

National Fire Protection Association (NFPA) Tests (in accordance with NFPA 1981, 1997 Edition):

7. Airflow Performance Test [Chapter 5, 5-1.1]

The NIOSH test report for the SCBA is in **Appendix II. Tables One and Two** summarize the test results.

Summary and Conclusions

An SCBA unit was submitted to NIOSH/NPPTL by the Indianapolis, Indiana Fire Department for evaluation by calling in the request. The SCBA unit was delivered to the NIOSH facility in Morgantown on April 29, 2016 and extensively inspected on July 19, 2016. The unit was identified as a Scott® Safety model Air-Pak® Plus 4.5, 4500 psig, 30 minute, SCBA (NIOSH approval numbers, TC-13F-76CBRN). As a result of the inspection, it was determined that the unit was in good condition with signs of heat damage on the shoulder straps. The cylinder was shipped with the pack and the valve was in the off position when received. The cylinder gauges indicated that the tank was empty. The regulator and facepiece sealing areas on the unit were relatively clean and in good shape. The unit had only slight scratches on the lens. Visibility through the facepiece lens was good. The facepiece head harness and the straps were in good condition and the straps moved freely, but were slightly dirty. The NFPA approval label was present and readable. The personal alert safety system (PASS) functioned.

The Indianapolis SCBA met the requirements of the six NIOSH SCBA certification tests.

The unit also passed the NFPA "Airflow Performance" test. However, the original mask mounted regulator (MMR) could not pass the facepiece leakage test. The original facepiece was replaced with a NIOSH-owned Scott® Safety unit to ensure that the mask was indeed sealed and found the issue was with the fire original MMR. The original unit and MMR, as submitted by the Indianapolis Fire Department, were used for the NFPA breathing machine portion of the SCBA testing.

In light of the information obtained during this investigation, NIOSH MTT proposes no further action on its part at this time. The SCBA unit was returned to storage pending return to the Indianapolis Fire Department.

Before this unit is to be placed back into service, the SCBA must be repaired, tested, cleaned, and any damaged components replaced and inspected by a qualified service technician, including such testing and other maintenance activities, as prescribed by the schedule from the SCBA manufacturer. Typically a flow test should be conducted in accordance with the manufacturer instructions and is required at least annually.

Actions to be Taken by the Fire Departments With SCBAs Involved in an Incident

- Any SCBA unit involved in an incident may not be placed back in service until the SCBA has been repaired, tested, cleaned and any damaged components replaced and inspected by a qualified service technician, including such testing and other maintenance activities as prescribed by the schedule from the SCBA manufacturer.
- All SCBA units, even those not involved in an incident, should undergo a flow test on an annual basis at a minimum.

Actions the PPE Users, Selectors, and Purchasers May Take to Further Protect Themselves and Others from Hazards

- Sign up for NPPTL's Listserv at http://www.cdc.gov/niosh/npptl/sub-NPPTL.html to receive email notifications relevant to PPE.

For more information related to personal protective equipment, visit the NIOSH website www.cdc.gov/niosh/npptl

To receive documents or other information about occupational safety and health topics, contact NIOSH:

Telephone: 1–800–CDC–INFO (1–800–232–4636)
TTY: 1–888–232–6348
CDC INFO: www.cdc.gov/info

or visit the NIOSH website at www.cdc.gov/niosh

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Appendix I

SCBA Inspection Report

National Personal Protective Technology Laboratory, Evaluation and Testing Branch

Respirator Field Problem
Incoming Inspection Report Summary

Task Number:	TN-20931	**Requestor:**	Indianapolis Fire Department
Date Received:	April 29, 2016 (SCBA)	**Date Received:**	April 29, 2016 (Cylinder)
Date Inspected:	July 18, 2016	**Description:**	Fire Department Requesting Technical Assistance
Manufacturer:	Scott® Safety	**Inspected by:**	Angie Andrews, Jeremy Gouzd, Karis Kline
Approval Number:	TC-13F-76CBRN	**SCBA Type:**	Open-Circuit, Pressure-Demand

The SCBA was received in a cardboard box (refer to **Figures 1 – 4** in **Appendix III**).

Contact Agency: Indianapolis Fire Department
As received:

- Pack and cylinder in large plastic bag, facepiece in separate bag, mask mounted regulator (MMR) floating in box
- Cylinder received empty
- Bypass was ¾ closed
- Donning switch on, regulator inactive
- MMR disconnected from facepiece and unit
- Facepiece included

Components and Observations

NOTE: All references to "right" or "left" are from the user's perspective.

Facepiece (Refer to Figures 5 - 10 in Appendix III):
Facepiece assembly; P/N 805337-13/-33 Large Model: AV3000 MFG date: Not found
Facepiece Seal P/N: 31001740 MFG date: 10/10
Nosecup P/N: 31001045 Large MFG Date: 3rd quarter 2010

- Overall condition is good
- Lot number label is present

- Lens is good with some scratches
- Head harness is good, carabiner attached to top adjustment strap
- Head harness straps good, straps move freely, hold in place, held securely to facepiece, slightly dirty
- Attachment points for straps are good
- The facepiece seal "rubber" portion is excellent
- Regulator interface area is good, no debris

2. Mask Mounted Regulator (MMR) (Refer to Figures 11 - 15 in Appendix III):

Air-Pak® plus CBRN regulator with Vibralert and quick disconnect.
Regulator assembly P/N: 115SO719000287
Other markings: 0719000287 etched into plastic; A2Q07; 20077-10; R-1876 and 09 etched on front of MMR
MFG Date: 5-7-2007

- Overall condition is good with no signs of heat damage
- Outer case is good and front label is in good condition
- Donning switch is in good condition. Switch is on, regulator inactive.
- Detached from pack at quick disconnect
- Bypass ¾ closed
- Bypass knob fair shape
- Inside flange has minimal scratches, clean
- Sealing area mostly clean and in decent shape
- Regulator can be attached and removed
- Locking assembly does function

3. Low Pressure Regulator Hose (Refer to Figure 16 in Appendix III):

Scott® part number: Illegible due to normal wear

- Overall condition is good
- Detached from pack at quick disconnect
- Quick disconnect in good condition and functions
- Line runs through the shoulder strap to the reducer
- Signs of heat damage to shoulder straps

4. 4.5 Pressure Reducer Assembly (Refer to Figures 17 - 19 in Appendix III):

P/N: (Partial) 115S13230_7_81
Other markings: Sticker on side reading "CGA Pressure…"
S/N: Not found MFG Date: Not found

- SCOTT marking is present
- Overall condition is good, some debris on top
- All airline connections are secure with no sign of heat damage
- Low pressure line, dual manifold assembly in pouch and in good condition

5. High Pressure Hose and Cylinder Attachment (Refer to Figures 20 - 22 in Appendix III):

Cylinder Attachment P/N: 802226-15
Other marking: 0613
Quickfill markings: Parker RGX-N-05 with 01SW underneath

- Overall condition is good
- Cylinder attachments thread clean, threads on and off, O-ring in place
- Quick fill cover in good condition, connection clean

6. Console Assembly PASS (Refer to Figures 23 - 24 in Appendix III):

Markings on label not visible due to wear

- Overall condition is good
- Lines good shape—pressure/electrical
- Gauge lens is good and readable, but foggy
- Protective casing is good
- Rubber attachment strap present, attached to the PASS console and shoulder strap
- PASS did function
- SEI label present

7. PASS Control Module (Refer to Figures 26 - 27 in Appendix III):

Part Number: 200451-02-12 with Pak Tracker
ID: 00183223

- Overall condition is good shape
- Held securely to backframe
- Wire connection connected to PASS device
- Wire held secure to backframe and runs to console assembly

8. Backframe Assembly (Refer to Figures 28 - 32 in Appendix III):

P/N: 200275-02;
Other markings: EG27B; 10009192; 6;
Stamp on wire split from control module to reducer to
PASS Console 31001150-02 REV; 4/13

SN: (Partial) … 20006319
NFPA 1981 2007 ed.

- Overall good condition, no bends/cracks in wire frame, or plate
- Shoulder straps were attached to the frame
- Cylinder strap latch is in fair condition and functional
- NIOSH label present, and readable TC-13F-76CBRN for the unit

9. Straps and Buckles (Refer to Figures 33, 34 in Appendix III):

- Overall strap condition is good but dirty with some signs of heat damage, dye sublimation
- Both shoulder straps attached at the top of the backframe
- Hose lines and wires pass through shoulder straps
- All adjustable buckles move and hold in place
- Waist area buckle latches and release
- Lumbar strap in good condition

10. Compressed Air Cylinder and Cylinder Valve Assembly (Refer to Figures 35 - 38 in Appendix III):

Minute Duration: 30 minute
DOT –Number: DOT-E-10915-4500
TC-SU-51341-310
IH 38260
UN1002
A2Q03
Scott® Part number: 10009671
Scott® logo visible Luxfer REE: 83
Manufacture date: 6/03 4500 PSIG

- Overall condition is good as there are some surface scratches and dirt present (minimal)
- Gauge is readable
- Threads clean but some are damaged
- As received cylinder valve fully closed with no air remaining
- Rubber bumper at base on cylinder valve is in fair condition
- Rehydro label present: (Partial) ??/13
- P/N for assembly/cylinder not readable
- On Stem: (Partial#) 804721-01

11. Auxiliary Hose (Refer to Figure 39 in Appendix III):

Dual manifold hose assembly

- Overall condition is good and rubber protective boots are in good shape
- Straps attached to covers and cylinder attachment assembly
- Fittings are clean

Appendix II

SCBA Test Results

National Personal Protective Technology Laboratory, Evaluation and Testing Branch

SCBA Test Report

Task Number:	TN-20931
Manufacturer:	Scott® Safety
NIOSH Approval Number:	TC-13F-76CBRN
Tests Performed by:	Angie Andrews, Jeremy Gouzd, Karis Kline
Report written by:	Karis Kline
Date of Report:	July 21, 2016

I. Background

April 29, 2016, an SCBA unit from the Indianapolis Fire Department was delivered to the NIOSH facility in Morgantown, West Virginia. The unit was removed from the packaging in room 1513 and inspected on July 18, 2016 by Angie Andrews, Jeremy Gouzd, and Karis Kline of the Morgantown Testing Team (MTT) at NPPTL. The SCBA was visually examined, component by component, in the condition received to determine the conformance of the unit to the NIOSH-approved configuration. The unit was identified as the Scott® Safety Company model Air-Pak® Plus 4.5, 30 minute, 4500 psi unit, NIOSH approval number TC-13F-76CBRN and as the unit submitted by the Indianapolis Fire Department. The visual inspection process was documented photographically.

II. Test Outlines

1. POSITIVE PRESSURE TEST – NIOSH Test Procedure No. 120

42 CFR Part 84 Reference: Subpart H, § 84.70 (a)(2)(ii)

Requirement:

The pressure inside the facepiece in relation to the immediate environment is positive during both inhalation and exhalation.

Procedure:

A breathing machine with a 622 kg-m/min cam operating at 24 RPM with a 40 liters per minute flow rate (115 liters per minute peak flow) is connected to an anthropometric head for cycling. A pressure tap in the head is connected to a transducer which in turn is connected to a strip chart recorder for determining the pressure in the facepiece.

Results: The unit was tested on July 20, 2016 and met the test requirement. The inhalation breathing resistance did not become negative during the test. The HUD, remote gauge, and donning switch functioned normally.

Inhalation Breathing Resistance (inches of water column):	**0.2**
Pass/Fail:	**Pass**

2. RATED SERVICE TIME TEST – NIOSH Test Procedure No. 121

42 CFR Part 84 Reference: Subpart F, § 84.53 (a) and Subpart H, § 84.95 (a) and (b)

Requirement:

Service time will be measured while the apparatus is operated by a breathing machine as described in § 84.88. The open-circuit apparatus will be classified according to the length of time it supplies air or oxygen to the breathing machine. Classifications are listed in § 84.53.

Procedure:

A breathing machine with a 622 kg-m /min cam operating at 24 RPM with a 40 liters per minute flow rate is connected to an anthropometric head for cycling. A pressure tap in the head is connected to a transducer which in turn is connected to a strip chart recorder for determining the pressure in the facepiece. The breathing machine is run until the inhalation portion of the breathing curve falls below the minimum requirement.

Results: Tested on July 20, 2016, the SCBA met the test requirement.

Test Notes: The measured service time (adjusted to correspond with the recorded breathing cycles) was more than the rated service time of 30 minutes. The PASS unit did function during the test. The SCBA did not go negative on inhalation but maintained positive pressure in the facepiece at the same level.

The measured service time (adjusted to correspond with the recorded breathing cycles) was more than the rated service time of 30 minutes. The PASS did function.

Measured Service	**Minutes Seconds**
Time:	**30 33.9**
Pass/Fail:	**Pass**

3. STATIC PRESSURE TEST – NIOSH Test Procedure No. 122

42 CFR Part 84 Reference: Subpart H, § 84.91 (d)

Requirement:

The static pressure (at zero flow) in the facepiece shall not exceed 38 mm (1.5 inches) water-column height.

Procedure:

The facepiece is fitted to an anthropometric head for testing. A pressure tap in the head is connected to a calibrated manometer. Full cylinder pressure is applied to the unit at zero flow and a reading from the manometer is recorded.

Results: Tested on July 20, 2016, the SCBA met the test requirement.

Facepiece Static Pressure (inches of water column):	**0.9**
Pass/Fail:	**Pass**

4. GAS FLOW TEST – NIOSH Test Procedure No. 123

42 CFR Part 84 Reference: Subpart H, § 84.93 (b) and (c)

Requirement:

The flow from the apparatus shall be greater than 200 liters per minute when the pressure in the facepiece of demand apparatus is lowered by 51 mm (2 inches) water column height when full container pressure is applied. Where pressure demand apparatus are tested, the flow will be measured at zero gage pressure in the facepiece.

Procedure:

A pressure tap in the anthropometric head is connected to a manometer for determining when the pressure inside the facepiece is at zero. A mass flow meter is connected in line between the anthropometric head and an adjustable vacuum source to measure flow. The SCBA cylinder is replaced by a test stand which is adjusted initially to full cylinder pressure. The vacuum source is adjusted during the test to maintain the desired pressure inside the facepiece. Once the proper facepiece pressure has stabilized, a flow reading is recorded. The procedure is then repeated with the test stand adjusted to 500 psig.

Results: Tested on July 21, 2016, the SCBA met the test requirement. The bypass appeared to function normally.

Applied pressure	Airflow (liters per minute)	Pass/Fail
4500 psig	467.2	Pass
500 psig	535.2	Pass

5. EXHALATION RESISTANCE TEST – NIOSH Test Procedure No. 122

42 CFR Part 84 Reference: Subpart H, § 84.91 (c)

Requirement:

The exhalation resistance of pressure-demand apparatus shall not exceed the static pressure in the facepiece by more than 51 mm (2 inches) water-column height.

Procedure:

The facepiece is mounted on an anthropometric head form. A probe in the head form is connected to a slant manometer for measuring exhalation breathing resistance. The airflow through the apparatus is adjusted to a rate of 85 liters per minute and the exhalation resistance is recorded.

Results: Tested on July 21, 2016, the SCBA met the test requirement.

Exhalation Breathing Resistance (inches of water column):	**2.22**
Static Pressure (inches of water column):	**0.9**
Difference (inches of water column):	**1.32**
Pass/Fail:	**Pass**

6. REMAINING SERVICE LIFE INDICATOR TEST – NIOSH Test Procedure No. 12

42 CFR Part 84 Reference: Subpart H, § 84.83 (f) and Subpart G, § 84.63 (c)

Requirement:

Each remaining service life indicator or warning device shall give an alarm when the remaining service life of the apparatus is reduced within a range of 20 to 25 percent of its rated service time or pressure.

This requirement is modified under § 84.63(c) as follows: *For apparatus which do not have a method of manually turning off remote gage in the event of a gage or gage line failure the remaining service life indicator is required to be set at 25% ± 2% of the rated service time or pressure.*

Procedure:

A calibrated gauge is connected in line between the air supply and the first stage regulator. The unit is then allowed to gradually bleed down. When the low air alarm is activated, the pressure on the gauge is recorded. This procedure is repeated six times. The average of the six readings is calculated and recorded.

Results: Tested on July 21, 2016. The test requirement is between 1035 and 1215 psig (25% ± 2%).

Run #	Alarm Point (psig) VibrAlert	Alarm Point (psig) HUD
1.	1120	1150
2.	1120	1130
3.	1110	1140
4.	1110	1140
5.	1110	1130
6.	1100	1140
Avg.	1112	1138
Pass/Fail	Pass	Pass

7. NFPA AIRFLOW PERFORMANCE TEST

NFPA 1981 (1997 Edition) Reference: Chapter 5, Performance Requirements, Sec. 5-1.1

Requirement:

SCBA shall be tested for airflow performance as specified in Section 6-1, Airflow Performance Test, and the SCBA facepiece pressure shall not be less than 0.0 in (0.0 mm) water column nor greater than 3½ in (89 mm) water column above ambient pressure from the time the test begins until the time the test is concluded.

Procedure:

The required equipment specified in the NFPA standards were used to conduct the tests on this unit. A pressure tap in the head is connected to a transducer which in turn is connected to a flatbed chart recorder for determining the pressure in the facepiece.

Results: The SCBA passed this test.

Test Notes: PASS unit was functional. HUD was functional. Alarm systems were functional.

Maximum Facepiece Pressure (inches of water column):	**3.07**
Minimum Facepiece Pressure(inches of water	**0.25**
Pass/Fail:	**PASS**

III. Disposition

Following testing, the SCBA unit was returned to the package in which the unit was shipped to NIOSH and placed in secured storage. The unit was then removed from secured storage on September 14, 2016 and a download of the data logger was conducted by the MTT in lab H-1513. The unit was placed back into secured storage awaiting shipment back to the fire department.

The results of all tests are summarized in Tables One and Two which follow.

TABLE ONE – Summary of NIOSH Test Results

Task Number: 20931

Manufacturer: Scott® Safety

NIOSH Approval Number: TC-13F-76CBRN

Tests Performed By: Angie Andrews, Jeremy Gouzd, Karis Kline

Dates of Tests: July 20 & 21, 2016

TEST/42 CFR PART 84 REFERENCE	STANDARD	RESULT	PASS	FAIL
1. POSITIVE PRESSURE TEST Reference: Subpart H, § 84.70 (a)(2)(ii)	≥ 0.00 INWC	0.20 INWC	**X**	
2. RATED SERVICE TIME TEST Reference: Subpart F, § 84.53 (a), Subpart H, § 84.95 (a) and (b)	≥ 30 min.	30 min 33.9 s	**X**	
3. STATIC PRESSURE TEST Reference: Subpart H, § 84.91 (d)	≤ 1.50 INWC	0.9 INWC	**X**	
4. GAS FLOW TEST (at Full Cylinder Pressure) Reference: Subpart H, § 84.93 (b) and (c)	≥ 200 lpm	467.2 LPM	**X**	
4. GAS FLOW TEST (at 500 psig) Reference: Subpart H, § 84.93 (b) and (c)	≥ 200 lpm	535.2 LPM	**X**	
5. EXHALATION RESISTANCE TEST Reference: Subpart H, § 84.91 (c)	≤ 2.00 INWC	1.32 INWC	**X**	
6. REMAINING SERVICE LIFE INDICATOR TEST (vibrating alarm) Reference: Subpart H, § 84.83 (f) and Subpart G, § 84.63 (c)	Between 1035 and 1215 psig	1112 PSIG	**X**	
6. REMAINING SERVICE LIFE INDICATOR TEST (light alarm HUD) Reference: Subpart H, § 84.83 (f) and Subpart G, § 84.63 (c)	Between 1035 and 1215 psig	1138 PSIG	**X**	

NOTE: The Positive Pressure Test and Rated Service Life Test are run simultaneously.

<u>TABLE TWO</u> – Summary of NFPA Test Results

TEST/REFERENCE	STANDARD	RESULT	PASS	FAIL
7. NFPA AIRFLOW PERFORMANCE **Reference:** NFPA 1981 (1997 Edition), Section 5-1.1	≤ 3.50 INWC Exhalation Resistance	3.07 INWC	**X**	
7. NFPA AIRFLOW PERFORMANCE **Reference:** NFPA 1981 (1997 Edition), Section 5-1.1	≥ 0.00 INWC Inhalation Resistance	0.25 INWC	**X**	

DATA LOGGER INFORMATION

Time	Date	Off To Sensing	Sensing To Off	PreAlarm To Alarm	Manual Alarm	Alarm Reset	Low Battery	Sensing To PreAlarm	Clock Reset Pending	Clock Reset	Power On Reset
9:54:12	10/20/2015	-	-	-	-	-	-	-	-	X	-
7:38:04	10/20/2015	-	-	-	-	-	-	-	X	-	-
7:35:34	10/20/2015	-	X	-	-	-	-	-	-	-	-
7:35:06	10/20/2015	-	-	-	-	-	-	X	-	-	-
7:34:44	10/20/2015	-	-	-	-	-	-	X	-	-	-
7:34:22	10/20/2015	-	-	-	-	-	-	X	-	-	-
7:34:00	10/20/2015	-	-	-	-	-	-	X	-	-	-
7:33:40	10/20/2015	X	-	-	-	-	-	-	-	-	-
12:45:18	10/19/2015	-	X	-	-	-	-	-	-	-	-
12:45:12	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:44:34	10/19/2015	-	-	-	-	X	-	-	-	-	-
12:44:32	10/19/2015	-	-	-	X	-	-	-	-	-	-
12:44:26	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:43:38	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:43:06	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:42:18	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:41:52	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:41:20	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:40:56	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:40:34	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:39:48	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:39:26	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:39:00	10/19/2015	-	-	-	-	-	-	X	-	-	-

12:38:36	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:38:10	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:36:50	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:36:28	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:36:08	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:35:10	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:34:50	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:34:04	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:33:44	10/19/2015	X	-	-	-	-	-	-	-	-	-
12:13:56	10/19/2015	-	X	-	-	-	-	-	-	-	-
12:13:48	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:13:20	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:12:48	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:12:18	10/19/2015	X	-	-	-	-	-	-	-	-	-
12:07:08	10/19/2015	-	X	-	-	-	-	-	-	-	-
12:07:00	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:06:38	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:06:12	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:05:48	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:05:24	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:04:20	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:03:28	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:03:06	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:02:40	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:02:04	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:01:42	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:01:20	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:00:58	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:00:28	10/19/2015	-	-	-	-	-	-	X	-	-	-
12:00:08	10/19/2015	X	-	-	-	-	-	-	-	-	-
11:55:44	10/19/2015	-	X	-	-	-	-	-	-	-	-
11:55:18	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:54:40	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:54:06	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:53:44	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:53:20	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:52:58	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:52:34	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:52:12	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:51:48	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:51:20	10/19/2015	-	-	-	-	-	-	X	-	-	-

11:50:58	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:50:36	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:50:12	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:49:50	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:48:54	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:48:32	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:48:08	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:47:46	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:46:40	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:46:16	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:45:54	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:45:32	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:45:04	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:44:42	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:44:20	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:43:58	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:43:36	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:43:14	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:42:52	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:42:28	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:42:06	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:41:46	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:41:22	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:41:00	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:40:38	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:40:14	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:39:52	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:39:30	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:39:08	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:38:46	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:38:24	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:37:48	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:37:26	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:37:04	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:36:42	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:36:16	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:35:54	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:35:30	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:34:56	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:34:34	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:34:14	10/19/2015	-	-	-	-	-	-	X	-	-	-

11:33:52	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:33:32	10/19/2015	X	-	-	-	-	-	-	-	-	-
11:26:16	10/19/2015	-	X	-	-	-	-	-	-	-	-
11:26:08	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:25:46	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:25:22	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:24:24	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:24:04	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:23:42	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:23:20	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:22:58	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:22:36	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:22:14	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:21:52	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:21:30	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:21:08	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:20:46	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:20:24	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:20:02	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:19:40	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:19:18	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:18:54	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:18:28	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:18:06	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:17:44	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:17:22	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:17:00	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:16:38	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:16:16	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:15:56	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:15:32	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:15:06	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:14:46	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:14:24	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:14:02	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:13:40	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:13:18	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:12:56	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:12:34	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:12:12	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:11:50	10/19/2015	-	-	-	-	-	-	X	-	-	-

11:11:30	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:11:08	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:10:46	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:10:20	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:09:58	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:09:36	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:09:06	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:08:42	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:08:22	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:08:00	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:07:38	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:07:16	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:06:54	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:06:34	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:06:12	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:05:50	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:05:30	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:05:08	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:04:46	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:04:22	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:03:34	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:03:04	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:02:08	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:00:30	10/19/2015	-	-	-	-	-	-	X	-	-	-
11:00:08	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:58:54	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:58:12	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:56:44	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:56:22	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:55:46	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:55:24	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:53:50	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:53:28	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:52:46	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:52:24	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:52:02	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:51:40	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:51:18	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:50:56	10/19/2015	-	-	-	-	-	-	X	-	-	-
10:50:36	10/19/2015	X	-	-	-	-	-	-	-	-	-
5:14:30	9/22/2015	-	X	-	-	-	-	-	-	-	-

5:14:14	9/22/2015	-	-	-	-	-	-	X	-	-	-
5:13:54	9/22/2015	X	-	-	-	-	-	-	-	-	-
5:11:00	9/22/2015	-	X	-	-	-	-	-	-	-	-
5:10:42	9/22/2015	-	-	-	-	-	-	X	-	-	-
5:10:18	9/22/2015	-	-	-	-	-	-	X	-	-	-
5:09:58	9/22/2015	X	-	-	-	-	-	-	-	-	-
5:31:34	9/17/2015	-	X	-	-	-	-	-	-	-	-
5:31:14	9/17/2015	-	-	-	-	-	-	X	-	-	-
5:30:46	9/17/2015	-	-	-	-	X	-	-	-	-	-
5:30:46	9/17/2015	-	-	-	X	-	-	-	-	-	-
5:30:42	9/17/2015	-	-	-	-	X	-	-	-	-	-
5:30:40	9/17/2015	-	-	X	-	-	-	-	-	-	-
5:30:28	9/17/2015	-	-	-	-	-	-	X	-	-	-
5:29:54	9/17/2015	-	-	-	-	-	-	X	-	-	-
5:29:34	9/17/2015	X	-	-	-	-	-	-	-	-	-
16:48:28	9/16/2015	-	X	-	-	-	-	-	-	-	-
16:47:50	9/16/2015	X	-	-	-	-	-	-	-	-	-
6:22:54	9/14/2015	-	X	-	-	-	-	-	-	-	-
6:22:48	9/14/2015	-	-	-	-	X	-	-	-	-	-
6:22:46	9/14/2015	-	-	-	X	-	-	-	-	-	-
6:22:10	9/14/2015	X	-	-	-	-	-	-	-	-	-
13:08:54	9/13/2015	-	X	-	-	-	-	-	-	-	-
13:08:42	9/13/2015	-	-	-	-	-	-	X	-	-	-
13:08:06	9/13/2015	-	-	-	-	-	-	X	-	-	-
12:59:14	9/13/2015	-	-	-	-	-	-	X	-	-	-
12:58:48	9/13/2015	-	-	-	-	-	-	X	-	-	-
12:43:58	9/13/2015	X	-	-	-	-	-	-	-	-	-
5:28:52	9/13/2015	-	X	-	-	-	-	-	-	-	-
5:28:52	9/13/2015	-	-	-	-	-	-	X	-	-	-
5:28:26	9/13/2015	-	-	-	-	-	-	X	-	-	-
5:28:00	9/13/2015	X	-	-	-	-	-	-	-	-	-
5:11:32	9/11/2015	-	X	-	-	-	-	-	-	-	-
5:11:22	9/11/2015	-	-	-	-	-	-	X	-	-	-
5:11:00	9/11/2015	-	-	-	-	-	-	X	-	-	-
5:10:30	9/11/2015	X	-	-	-	-	-	-	-	-	-
5:24:48	9/10/2015	-	X	-	-	-	-	-	-	-	-
5:24:44	9/10/2015	-	-	-	-	-	-	X	-	-	-
5:24:22	9/10/2015	X	-	-	-	-	-	-	-	-	-
5:31:52	9/8/2015	-	X	-	-	-	-	-	-	-	-
5:31:50	9/8/2015	-	-	-	-	-	-	X	-	-	-
5:31:30	9/8/2015	-	-	-	-	X	-	-	-	-	-

5:31:30	9/8/2015	-	-	-	X	-	-	-	-	-	-
5:31:26	9/8/2015	-	-	-	-	X	-	-	-	-	-
5:31:26	9/8/2015	-	-	X	-	-	-	-	-	-	-
5:31:14	9/8/2015	-	-	-	-	-	-	X	-	-	-
5:30:54	9/8/2015	X	-	-	-	-	-	-	-	-	-
6:30:56	9/4/2015	-	X	-	-	-	-	-	-	-	-
6:30:48	9/4/2015	-	-	-	-	-	-	X	-	-	-
6:30:28	9/4/2015	X	-	-	-	-	-	-	-	-	-
17:16:38	9/2/2015	-	X	-	-	-	-	-	-	-	-
17:16:32	9/2/2015	-	-	-	-	-	-	X	-	-	-
17:15:46	9/2/2015	-	-	-	-	-	-	X	-	-	-
17:15:20	9/2/2015	-	-	-	-	-	-	X	-	-	-
17:15:00	9/2/2015	X	-	-	-	-	-	-	-	-	-
5:27:58	8/30/2015	-	X	-	-	-	-	-	-	-	-
5:27:56	8/30/2015	-	-	-	-	X	-	-	-	-	-
5:27:56	8/30/2015	-	-	X	-	-	-	-	-	-	-
5:27:44	8/30/2015	-	-	-	-	-	-	X	-	-	-
5:27:24	8/30/2015	X	-	-	-	-	-	-	-	-	-
6:15:46	8/29/2015	-	X	-	-	-	-	-	-	-	-
6:15:40	8/29/2015	-	-	-	-	-	-	X	-	-	-
6:15:18	8/29/2015	X	-	-	-	-	-	-	-	-	-
5:26:46	8/28/2015	-	X	-	-	-	-	-	-	-	-
5:26:38	8/28/2015	-	-	-	-	-	-	X	-	-	-
5:26:18	8/28/2015	X	-	-	-	-	-	-	-	-	-
6:24:14	8/23/2015	-	X	-	-	-	-	-	-	-	-
6:23:50	8/23/2015	X	-	-	-	-	-	-	-	-	-
5:00:28	8/21/2015	-	X	-	-	-	-	-	-	-	-
4:59:46	8/21/2015	-	-	-	-	-	-	X	-	-	-
4:59:26	8/21/2015	X	-	-	-	-	-	-	-	-	-
5:17:14	8/20/2015	-	X	-	-	-	-	-	-	-	-
5:16:52	8/20/2015	X	-	-	-	-	-	-	-	-	-
5:20:42	8/19/2015	-	X	-	-	-	-	-	-	-	-
5:20:32	8/19/2015	-	-	-	-	-	-	X	-	-	-
5:20:12	8/19/2015	X	-	-	-	-	-	-	-	-	-
5:16:24	8/18/2015	-	X	-	-	-	-	-	-	-	-
5:16:22	8/18/2015	-	-	-	-	X	-	-	-	-	-
5:16:22	8/18/2015	-	-	X	-	-	-	-	-	-	-
5:16:10	8/18/2015	-	-	-	-	-	-	X	-	-	-
5:15:36	8/18/2015	X	-	-	-	-	-	-	-	-	-
5:37:06	8/14/2015	-	X	-	-	-	-	-	-	-	-
5:36:58	8/14/2015	-	-	-	-	-	-	X	-	-	-

5:36:38	8/14/2015	X	-	-	-	-	-	-	-	-	-
5:22:34	8/7/2015	-	X	-	-	-	-	-	-	-	-
5:22:26	8/7/2015	-	-	-	-	-	-	X	-	-	-
5:22:06	8/7/2015	X	-	-	-	-	-	-	-	-	-
4:49:30	8/6/2015	-	X	-	-	-	-	-	-	-	-
4:49:08	8/6/2015	-	-	-	-	-	-	X	-	-	-
4:48:48	8/6/2015	X	-	-	-	-	-	-	-	-	-
5:36:00	8/5/2015	-	X	-	-	-	-	-	-	-	-
5:36:00	8/5/2015	-	-	-	-	-	-	X	-	-	-
5:35:36	8/5/2015	X	-	-	-	-	-	-	-	-	-
5:44:34	8/3/2015	-	X	-	-	-	-	-	-	-	-
5:44:10	8/3/2015	X	-	-	-	-	-	-	-	-	-
6:05:18	8/2/2015	-	X	-	-	-	-	-	-	-	-
6:05:14	8/2/2015	-	-	-	-	-	-	X	-	-	-
6:04:54	8/2/2015	X	-	-	-	-	-	-	-	-	-
5:29:28	7/31/2015	-	X	-	-	-	-	-	-	-	-
5:29:12	7/31/2015	-	-	-	-	-	-	X	-	-	-
5:28:44	7/31/2015	X	-	-	-	-	-	-	-	-	-

Appendix III

SCBA Inspection Report

Figure 1: SCBA as received in cardboard box
Figure 2: SCBA unit in plastic bag inside box
Figure 3: SCBA as removed from shipping box
Figure 4: SCBA unit as removed from packaging
Figure 5: Overview of facepiece
Figure 6: Hairnet straps good/carabiner attached to top adjustment strap
Figure 7: Facepiece seal P/N
Figure 8: Inside of nose cup
Figure 9: Nose cup P/N
Figure 10: Port for second stage regulator
Figure 11: Mask Mounted Regulatory (MMR)
Figure 12: Label and marking on MMR
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Figure 16: Low pressure line and quick disconnect clean and functional
Figure 17: Top view of pressure reducer assembly
Figure 18: Side view of pressure reducer assembly
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Figure 20: Cylinder attachment and O-ring clean
Figure 21: Quick fill overall condition is good
Figure 22: Quick fill with cover removed
Figure 23: PASS console
Figure 24: Back of PASS console
Figure 25: PASS module with Pak-Tracker
Figure 26: PASS control module
Figure 27: PASS control module ID#
Figure 28: Overview of backframe
Figure 29: Cylinder strap in good condition and functional
Figure 30: NIOSH approval label on frame
Figure 31: Manufacturer label present
Figure 32: Backframe assembly P/N
Figure 33: Overview of straps and buckles
Figure 34: Shoulder straps have signs of heat damage
Figure 35: Overview of cylinder
Figure 36: Cylinder gauge is readable
Figure 37: Cylinder label and other markings
Figure 38: Cylinder valve threads are clean with some damage to threads
Figure 39: Auxiliary hose assembly in good condition

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Figure 8: Inside of nose cup

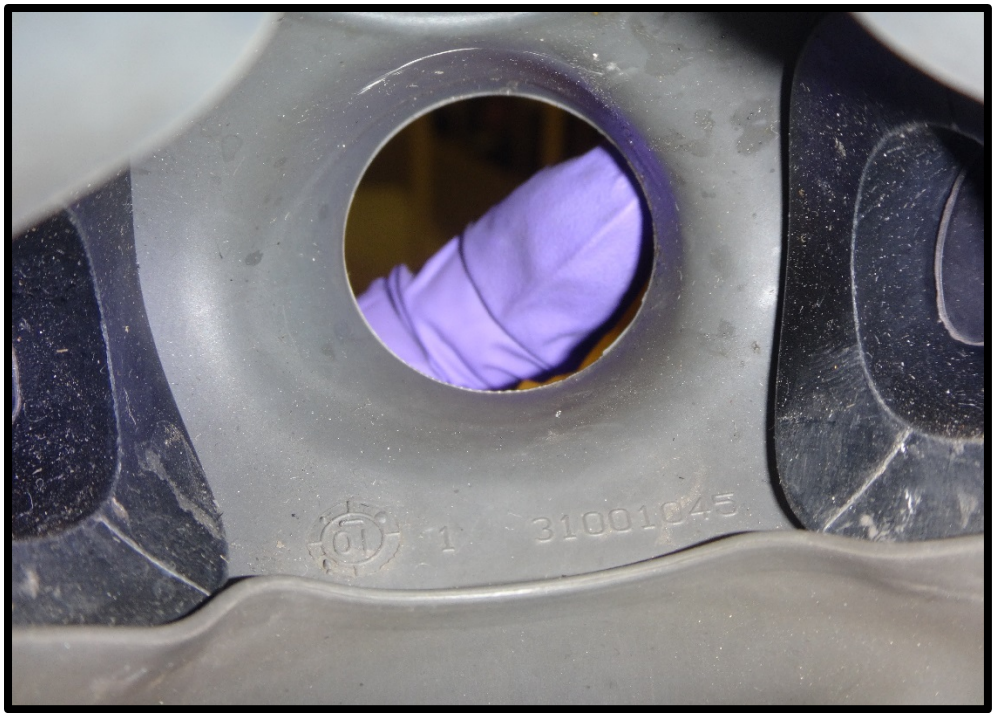

Figure 9: Nose cup P/N

Figure 10: Port for second stage regulator

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