****

Requirement: **This Section meets the requirements of Admin Control 5.8.2.45.**

****

7.2 Pressure Test of Waste Line Jacket via MLDB

7.2.1 Attachment Precautions and Limitations

1. Failure to perform this attachment within the required frequency or failure to meet the acceptance criteria of this surveillance could result in a violation of the Authorization Basis.

NOTE:	Correct lube oil for DSA compliance can only be verified by use of compressors obtained from PECMC or any approved oil free compressor.

2. **ENSURE** only oil free compressors are used when supplying air with portables, **OR**

IF portable compressors using oil are used to supply air, **THEN**

ENSURE the portable compressors used are from the PECMC organization with an SRO number or any approved oil free compressor.

7.2.2 Attachment Prerequisites

1. A Radiological Work Permit (RWP / SRWP) has been prepared and approved.

2. RCO is to be present and constantly monitoring during all line breaks.

3. Work shall not proceed beyond a QA Hold/Witness Point until the inspection is performed, acceptance of the item/activity is authenticated and the inspector releases the Hold/Witness Point.

4. Whip checks must be utilized at all flush water hose connections.

5. Hearing protection requirements must be adhered to when operating portable air compressors.

6. A pre-job brief has been held with all personnel involved in the completion of this procedure to include each work groups responsibilities and the review of the applicable RWP / SRWP.

7.2.3 Manpower / Communication

- This attachment is performed by Tank Operator(s).

7.2.4 Required Measuring and Test Equipment (M&TE)

M&TE Data (Refer to Section 6.4, *Typical Pressure Test Equipment*)

Pressure gage 2 maximum indication to be 1.5 to 4 times testing pressure.

Gage 1 M&TE Number:_____

Calibration Due Date:_____

Gage 2 M&TE Number:_____

Calibration Due Date:_____

Electronic user log scanned (Circle One): Yes / No

IF NO, THEN

DO NOT PROCEED, until Electronic User Log is scanned.

Comments: _____

_____

_____

7.2.5 Additional Tools and Equipment

- Portable Air Compressor
- Portable Air Delivery System
- 3/8 to 1 inch air tubing or hose
- Contamination control supplies, as required by Shift Management
- Pipe dope or Teflon® tape
- Leak detection liquid (i.e., liquid soap or equivalent)
- Portable Air Sampler(s) (as required)
- Adequate supply of PC's (protective clothing) and PPE (personal protective equipment)
- Helium cylinder(s) with regulator (only if determining leak site)
- MLDB 8 - inch flange, with Valve 8 stub-out and associated gasket.
- MLDB overflow plug as specified by W702976.
- Portable ventilation system (if required)
- Pipe wrench
- Adjustable wrench
- Yellow plastic or launderable tarps
- Brown craft paper

7.2.6 Preparations **Initials**

1. **NOTIFY** the following individuals, **AND**

OBTAIN approval for taking the associated MLDB (s) out of service:

- Associated CRO Signature:_____
- Appropriate Shift Management Signature:_____

2. **REQUEST** Shift Management REVIEW the following, **AND**

SIGN below:

I have reviewed this procedure against the Waste Line Jacket System to be tested and

- There are no transfers in progress associated with this line segment.
- There are no alarms activated associated with this line segment.
- This line segment is NOT currently in a Transfer Path.

_____/_____
Signature Print Name

Date:_____Time:_____

3. **IF** Helium is to be utilized for determining a leak site, **THEN**

NOTIFY Camera Crew in advance of job performance.

4. **SCHEDULE** RCO coverage for the job. _____

5. **NOTIFY** QA in advance of the test to be performed to ensure QA inspector is available to be present. _____

6. **IF** required by Operations / Engineering, **THEN**

PREPARE lockout plan per Manual 8Q, Procedure 32.

7. **ENSURE** all work groups sign in on the applicable AHA prior to beginning work. _____

8. **IF** portable ventilation system is to be utilized for venting the Air Delivery System, **THEN**

ENSURE HEPA filter has current performance test date.

_____
Expiration Date

7.2.6 Preparations, Cont.'d **Initials**

9. **IF** utilizing Helium for determining leak site(s) on Line Number(s) 151, 152,156 or 157, **THEN**

UTILIZE Appendix 6.2, *Helium Sample Points For Line Numbers 151 And 152 Via MLDB 1 At FDB-3,* OR, Appendix 6.3, *Helium Sample Points For Line Numbers 156 And 157 Via MLDB 2 At FDB-3,* for points from which Helium samples will be obtained.

10. **ENSURE** Air Delivery System pressure relief valve is within the required PM frequency. _____

11. **ENSURE** M&TE data for Gage 1 AND Gage 2 has been recorded in Subsection 7.2.4. _____

CAUTION

Waste Line Jacket MUST be vented through a HEPA filtered ventilation system.

12. **ENSURE** the H&V System, through which the Waste Line Jacket will be vented, is OPERATING and all parameters are within associated roundsheet limits or portable ventilation system should be staged and operable. _____

13. **ENSURE** all necessary equipment and supplies are at the applicable job site, as specified by Shift Management. (Refer to Subsection 7.2.5) _____

14. **IF** required, **THEN**

PREPARE the area around the MLDB with paper and plastic for contamination control. _____

15. **IF** using a portable compressor, **THEN**

a. **ENSURE** portable compressor is from PECMC Organization with an SRO Number or any approved oil free compressor. **[*A/C* Admin Control 5.8.2.45]** _____

b. **ENSURE** portable compressor is operable and the necessary hose fittings are available.

16. **ENSURE** pre-job brief has been conducted with all personnel involved in the completion of this procedure. _____

Subsection Completed By: _____ / _____
Signature Print Name

Date: _____ Time: _____

7.2.7 MLDB Preparation **Initials**

1. **IF** liquid is detected in the MLDB during the performance of this section, **THEN**

STOP, AND

CONTACT Shift Management for further instructions, **AND**

HAVE Shift Manager EVALUATE entry into applicable LCO(s).

2. **HAVE** RCO present and monitoring during the performance of this section. _____

3. **HAVE** RCO barricade the area around the MLDB, **AND**

POST radiological conditions as required. _____

4. **IF** posted limits are exceeded at any time during the performance of this section, **THEN**

RETURN area to a safe condition, as directed by RCO, **AND**

CONTACT Shift Management for further instructions.

5. **COMPLETE** the appropriate Line Segment Information in Subsection 7.2.15, Step 1. (Refer to Section 6.6, *Line Segments*). _____

6. **NOTIFY** the applicable Control Room Operator, **AND**

INFORM Control Room Operator that MLDB(s) will be OOS and to update status board.

7. **PREPARE** the MLDB(s) by performing the following:

a. **CLOSE** pressure gage isolation valve per Appendix 6.5, *Typical Pressure Test Systems*. _____

b. **PULL** conductivity probe per SW10.1-SOP-WTE-2, Section 7.3 *MLDB (Modified Leak Detection Box) Conductivity Probe Removal*.

c. **IF** necessary, **THEN**

1) **REMOVE** reducer/locking ring on the conductivity probe port.

2) **HAVE** Maintenance **DISCONNECT** probe leads from the terminal strip.

3) **HAVE** CRO record in CR log that leads have been lifted.

7.2.7 MLDB Preparation, Cont.'d **Initials**

Step 7, Cont.'d

d. **IF** more than one conductivity probe is being disconnected, **THEN**

LABEL the conductivity probe with either the MLDB number / location or with the probe CLI number.

e. **HAVE** Maintenance remove the MLDB flange bolts.

f. **REMOVE** Conductivity Probe Junction Box, stanchion, and 8 inch flange from the MLDB, **AND**

PLACE in prepared area.

g. **PLUG** the MLDB overflow line utilizing approved plug. (Ref. W702976, *Bldg. 241-F&H Waste Management Improvements Modified Leak Detection Box Process & Instruments (U)*.

h. **IF** inspection dictates, **THEN**

HAVE Maintenance replace gasket on flange.

i. **PLACE** 8 - inch flange, with Valve 8 air connection stub-out, onto the MLDB.

j. **HAVE** Maintenance install and tighten flange bolts.

8. **ENSURE** preparation is COMPLETE for the Line Number associated MLDB(s). _____

9. **IF** pressure testing waste line jacket via an MLDB using air, **THEN**

GO TO Subsection 7.2.8. _____

10. **IF** determining a leak site via an MLDB using Helium, **THEN**

GO TO Subsection 7.2.10. _____

Subsection Completed By: _____ / _____
Signature Print Name

Date: _____ Time: _____

7.2.8 Air Delivery System Assembly And Pressure Check Using Air **Initials**

1. **ENSURE** completion of Subsection 7.2.7. _____

> **NOTE:** Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.

2. **ENSURE** position of the following valves:

		√
• Valve 1	CLOSED	_____
• Valve 2	CLOSED	_____
• Valve 3	CLOSED	_____
• Valve 4	CLOSED	_____
• Valve 5	CLOSED	_____
• Valve 6	CLOSED	_____
• Valve 7	CLOSED	_____
• Valve 10	CLOSED	_____
• Valve 11	CLOSED	_____
• Valve 12	CLOSED	_____
• Valve 13	CLOSED	_____

_____

3. **ENSURE** proper assembly of the Air Delivery System by performing the following:

a. **CONNECT** flush hose to the air compressor at Valve 1, **THEN**

CONNECT opposite end of flush hose to the Air Delivery System at Valve 2. _____

b. **ENSURE** that Valve 8 is CLOSED. _____

c. **CONNECT** the 3/8 inch to 1 inch air tubing or hose to the Air Delivery System at Valve 6, **THEN**

CONNECT opposite end of the air tubing or hose to the MLDB at Valve 8, **AND**

TIGHTEN. _____

7.2.8 Air Delivery System Assembly And Pressure Check Using Air, Cont.'d **Initials**

Step 3, Cont.'d

d. **IF** utilizing a permanent H&V system, **THEN**

ENSURE the H&V System at which the waste line jacket will be vented, is OPERATING, and all parameters are within the associated Round sheet limits. _____

e. **IF** utilizing portable ventilation system to vent the waste line jacket, **THEN**

ENSURE portable ventilation system is staged and operable. _____

CAUTION

Waste line jacket MUST be vented through a HEPA filtered ventilation system.

NOTE 1: Notification must be made to the appropriate Control Room prior to removal of any inspection port plugs.

NOTE 2: Venting the Waste Line Jacket to a Waste tank should be a last resort because of the higher potential for contamination release and radiation exposure to employees.

4. **PERFORM** one of the following to assemble the Air Delivery System vent:

a. **VENT** the Air Delivery System to a permanent H&V system as follows:

1) **REMOVE** an inspection port plug from a nearby Pump Pit, Diversion Box, or Waste Tank / Annulus, **AND**

PLACE in a plastic bag for temporary storage.

7.2.8 Air Delivery System Assembly And Pressure Check Using Air, Cont.'d **Initials**

Step 4.a, Cont.'d

> **NOTE:** Using the inspection port plug to secure the air tubing/hose may restrict venting capabilities.

2) **CONNECT** air tubing or hose from the Air Delivery System at Valve 7, **AND**

ROUTE to the inspection port, **THEN**

SECURE AND SEAL air tubing in inspection port to prevent movement or removal.

3) **ENSURE** all tubing / hose connections are tight / secure. _____

b. **VENT** the Air Delivery System to a portable ventilation system as follows:

1) **CONNECT** air tubing or hose from the Air Delivery System at Valve 7, **AND**

ROUTE to the portable ventilation system HEPA filter bank inlet duct.

2) **SECURE, AND**

SEAL air tubing to the inlet duct.

3) **ENSURE** all tubing / hose connections are tight / secure. _____

> **NOTE:** Troubleshooting of the Air Delivery System may be performed at anytime **before** the test commences to achieve proper test parameters. Troubleshooting may include, but is not limited to, valving, venting and regulator adjustments.

5. **PERFORM** pressure check of the Air Delivery System by performing the following:

a. **SET** Air Delivery System pressure regulator to ZERO psig by turning the regulator bolt counterclockwise until loose.

b. **START** air compressor, **AND**

ALLOW warm up time as directed by Shift Management.

7.2.8 Air Delivery System Assembly And Pressure Check Using Air, Cont.'d **Initials**

Step 5, Cont.'d

c. **POSITION** the following valves:

		√
• Valve 1	OPEN	
• Valve 2	OPEN	
• Valve 3	OPEN	
• Valve 5	OPEN	
• Valve 12	OPEN	
• Valve 13	OPEN	

d. **Slowly ADJUST** air pressure regulator bolt (by turning clockwise) until 15 - 18 psig is indicated on Gage 2, **THEN**

CLOSE Valve 2.

e. **OBSERVE** pressure on Pressure Gage 2 for 2 minutes.

f. **IF** pressure on Gage 2 does NOT decrease, **THEN**

OPEN Valve 2, and proceed to Step 7.2.8.5.h.

g. **IF** a reduction of pressure is observed, **THEN**

PERFORM the following:

1) **IF** required, **THEN**

LEAK-CHECK all fittings from Valve 2 to Valve 6/7 using leak detection liquid (i.e., liquid soap or equivalent).

2) **IF** using portable ventilation system, **THEN**

START portable ventilation system.

3) **POSITION** the following valves:

		√
• Valve 2	CLOSED	
• Valve 7	OPEN	

4) **PERFORM** troubleshooting and repair as needed to prevent leaks on the Air Delivery System.

5) **WHEN** troubleshooting and repair of all leaks is complete,

THEN shutdown portable ventilation system, if portable ventilation system is in use.

7.2.8 Air Delivery System Assembly And Pressure Check Using Air, Cont.'d

Step 5g, Cont'd **Initials**

6) PERFORM the following:

		√	
• Valve 7	CLOSED		
• Valve 2	OPEN		

7) REPEAT Step 5.g, as necessary, until NO leaks are found.

h. WHEN the rotameter float lowers to ZERO, **AND**

WHEN pressure gage 2 indicates between 15-18 psig, **THEN**

OPEN Valve 6, **AND**

ENSURE pressure is between 15-18 psig, **THEN**

CLOSE Valve 3.

i. OBSERVE pressure indication on gage 2 for two (2) minutes.

j. IF pressure remains stable, as indicated on gage 2, **THEN**

GO TO Subsection 7.2.9.

k. IF a reduction of pressure is observed, **THEN**

1) OPEN Valve 3.

2) LEAK-CHECK all fittings from Valve 3 to Valve 8 using leak detection liquid. (i.e., liquid soap or equivalent)

3) IF using portable ventilation system, **THEN**

START portable ventilation system.

4) POSITION the following valves:

		√	
• Valve 2	CLOSED		
• Valve 7	OPEN		

5) PERFORM troubleshooting and repair as needed to prevent leaks on the Air Delivery System.

7.2.8 Air Delivery System Assembly And Pressure Check Using Air, Cont.'d

Step 5 k, Cont'd **Initials**

6) **WHEN** troubleshooting and repair of all leaks are complete, **THEN**

SHUTDOWN portable ventilation system, if system is in use.

7) **POSITION** the following valves:

		√
• Valve 7	CLOSED	
• Valve 2	OPEN	

8) **REPEAT** Steps 5.h through 5.k, as necessary, until NO leaks are observed.

9) **PROCEED** to Subsection 7.2.9.

Subsection Completed By: _____ / _____
Signature Print Name

Date: _____ Time: _____

7.2.9 Pressure Testing Waste Line Jacket Via MLDB With Air

Initials

> **NOTE:** This Section contains Quality Assurance Independent Inspection Witness Point(s). QA is to be notified at the start of this Section.

1. **ENSURE** completion of Subsection 7.2.8. _____

2. **NOTIFY** QA of the test to be performed, **AND**

REQUEST the presence of a QA Inspector.

QA Person Notified: _____

Notified by: _____

Date: _____ Time: _____

Comments: _____

_____

_____

> **NOTE:** Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.

3. **IF** not already started, **THEN**

START portable air compressor and ALLOW warm up time as directed by Shift Management.

4. **ENSURE** position of the following valves:

		√
• Valve 1	OPEN	_____
• Valve 2	OPEN	_____
• Valve 3	OPEN	_____
• Valve 5	OPEN	_____
• Valve 6	OPEN	_____
• Valve 8	OPEN	_____

_____

5. **OPEN** Valve 10 as needed to expedite pressurization of the waste line jacket. _____

6. **PRESSURIZE** the Waste Line Jacket until the pressure, as indicated on gage 2, indicates 15-18 psig. _____

7.2.9 Pressure Testing Waste Line Jacket Via MLDB With Air, Cont.'d **Initials**

7. **WHEN** either the rotameter indicates ZERO or minimal flow, **OR**

WHEN 45 minutes has elapsed , **THEN**

CLOSE Valve 10.

8. **IF** 45 minutes had elapsed in the previous step, **AND**

IF 15-18 psig is NOT indicated on gage 2 with ZERO or minimal flow on the rotameter, **THEN**

PERFORM the following:

a. **CLOSE** Valve 5 _____

b. **CLOSE** Valve 1. _____

c. **IF** using Portable Ventilation System, **THEN**

START portable ventilation System _____

d. **VENT** Jacket by opening Valve 7. _____

e. **AFTER** Gage 2 is indicating 0 psig, **THEN**

CLOSE Valve 7, **AND**

SHUTDOWN Portable Ventilation, if in use. _____

f. **CLOSE** Valve 8. _____

g. **CLOSE** Valve 6. _____

h. **OPEN** Valve 5. _____

i. **OPEN** Valve 7 to vent the Air Delivery System.

j. **IF** using Portable Ventilation System, **THEN**

START Portable Ventilation System. _____

k. **AFTER** Gage 2 is indicating 0 psig, **THEN**

CLOSE Valve 5 AND Valve 7, **AND**

SHUTDOWN Portable Ventilation, if in use. _____

7.2.9 Pressure Testing Waste Line Jacket Via MLDB With Air, Cont.'d **Initials**

Step 8, Cont'd

l. **NOTIFY** Shift Management of failed test, **AND**

INFORM Shift Management of the need to initiate Subsection 7.2.10 for determining the leak site using Helium. _____

m. Initiate NCR (Non Conformance Report) against this pressure test failure, and initiate work request to repair waste line jacket. _____

n. **IF** not initiating Subsection 7.2.10, **THEN**

INITIATE Subsection 7.2.12.

o. **SHUTDOWN** air compressor as directed by Shift Management.

9. **WHEN** the Waste Line Jacket is pressurized to 15-18 psig, as indicated on Gage 2, AND/OR minimal flow is indicated on the rotameter, **THEN**

CLOSE Valve 5. _____

10. **SHUTDOWN** air compressor per manufacturer instructions. (normally located on the inside of the control panel door)

*** QA WITNESS POINT ***

11. **RECORD** initial Gage 2 pressure reading and time in Subsection 7.2.15, **AND**

VERIFY initial Gage 2 pressure reading is ≥ 15 psig, **THEN**

AFTER 20 minutes have elapsed, **RECORD** final Gage 2 pressure reading and time in Subsection 7.2.15, **AND**

VERIFY ≤ 1 psig pressure drop in 20 minutes.

QA Inspection Performed By: _____ / _____
Signature Print Name

Date: _____ Time: _____

Comments: _____

7.2.9 Pressure Testing Waste Line Jacket Via MLDB With Air, Cont.'d **Initials**

> **NOTE:** If Gage 2 pressure DOES NOT reduce by more than 1.0 psig and initial Gage 2 pressure reading was ≥ 15 psig during the performance of Step 11, then the test has met the acceptance criteria.

12. **IF** Gage 2 pressure DID NOT reduce by more than 1.0 psig and initial Gage 2 pressure reading was ≥ 15 psig during the performance of Step 11, **THEN**

PERFORM the following:

a. **REPORT** the test results to the Shift Management. _____

b. **COMPLETE** Subsection 7.2.15. _____

c. **PROCEED** to Subsection 7.2.12. _____

13. **IF** Gage 2 pressure DID reduce by more than 1.0 psig during the performance of Step 11, **THEN**

a. **REPORT** the test failure to the Shift Management. _____

b. **COMPLETE** Subsection 7.2.15. _____

c. **INITIATE** Work Request to repair the waste line jacket and/or LDB.

d. **INITIATE** NCR (Non Conformance Report) against this pressure test failure.

e. **INFORM** Shift Management of the need to INITIATE Subsection 7.2.10 for determining the leak site using helium.

f. **IF** NOT initiating Subsection 7.2.10, **THEN**

INITIATE Subsection 7.2.12.

Subsection Completed By: _____ / _____
Signature Print Name

Date: _____ Time: _____

7.2.10 Air Delivery System Assembly And Pressure Check Using Helium **Initials**

1. **ENSURE** completion of Subsection 7.2.7. _____

2. **ENSURE** Helium Testor is OPERABLE. _____

3. **ENSURE** Engineering has identified sample points. _____

> **NOTE:** Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.

4. **ENSURE** position of the following valves:

		√
• Valve 2	CLOSED	_____
• Valve 3	CLOSED	_____
• Valve 4	CLOSED	_____
• Valve 5	CLOSED	_____
• Valve 6	CLOSED	_____
• Valve 7	CLOSED	_____
• Valve 9	CLOSED	_____
• Valve 10	CLOSED	_____
• Valve 11	CLOSED	_____
• Valve 12	CLOSED	_____
• Valve 13	CLOSED	_____ _____

5. **ENSURE** proper assembly of the Air Delivery System by performing the following:

a. **ENSURE** that Valve 8 on MLDB is CLOSED. _____

b. **CONNECT** the 3/8 inch to 1 inch air tubing or hose to the Air Delivery System at Valve 6, **THEN**

CONNECT opposite end of the air tubing or hose to the MLDB at Valve 8, **AND**

TIGHTEN.

7.2.10 Air Delivery System Assembly And Pressure Check Using Helium, Cont.'d **Initials**

Step 5, Cont.'d

c. **IF** utilizing a permanent H&V system, **THEN**

ENSURE the H&V System at which the waste line jacket will be vented, is OPERATING, and all parameters are within the associated Round sheet limits. _____

d. **IF** utilizing portable ventilation system to vent the waste line jacket, **THEN**

ENSURE portable ventilation system is staged and operable. _____

6. **CONNECT** air tubing / hose to the Helium cylinder regulator at Valve 9, **THEN**

CONNECT opposite end of air tubing / hose to the Air Delivery System at Valve 4. _____

CAUTION

Waste line jacket MUST be vented through a HEPA filtered ventilation system.

NOTE 1: Notification must be made to the appropriate Control Room prior to removal of any inspection port plugs.

NOTE 2: Venting the Waste Line Jacket to a Waste Tank should be a last resort because of the higher potential for contamination release and radiation exposure to employees.

NOTE 3: Only Tanks 1-8 have a HEPA filtered Annulus H&V System.

7. **PERFORM** one of the following to assemble the Air Delivery System vent:

a. **VENT** the Air Delivery System to a permanent H&V system as follows:

1) **REMOVE** an inspection port plug from a nearby Pump Pit, Diversion Box or Waste Tank / Annulus, **AND**

PLACE in a plastic bag for temporary storage.

7.2.10 Air Delivery System Assembly And Pressure Check Using Helium, Cont.'d **Initials**

Step 7.a, Cont.'d

> **NOTE:** Using the inspection port plug to secure the air tubing / hose may restrict venting capabilities.

2) **CONNECT** air tubing or hose from the Air Delivery System at Valve 7, **AND**

ROUTE to the inspection port, **THEN**

SECURE AND SEAL air tubing in inspection port to prevent movement or removal.

3) **ENSURE** all tubing / hose connections are tight / secure. _____

b. **VENT** the Air Delivery System to a portable ventilation system as follows:

1) **CONNECT** air tubing or hose from the Air Delivery System at Valve 7, **AND**

ROUTE to the portable ventilation system HEPA filter bank inlet duct.

2) **SECURE, AND**

SEAL air tubing to the inlet duct. _____

3) **ENSURE** all tubing / hose connections are tight / secure. _____

> **NOTE:** Troubleshooting of the Air Delivery System may be performed at anytime **before** the test commences to achieve proper test parameters. Troubleshooting may include, but is not limited to, valving, venting and regulator adjustments.

8. **PERFORM** pressure check of the Air Delivery System by performing the following:

a. **SET** Air Delivery System pressure regulator to ZERO psig by turning the regulator bolt counterclockwise until loose. _____

7.2.10 Air Delivery System Assembly And Pressure Check Using Helium, Cont.'d **Initials**

Step 8, Cont.'d

b. **ENSURE** position of the following valves:

		√
• Valve 9	OPEN	
• Valve 4	OPEN	
• Valve 3	OPEN	
• Valve 5	OPEN	
• Valve 12	OPEN	
• Valve 13	OPEN	

NOTE: Helium cylinder regulator may also need to be adjusted to obtain desired pressure at gage 2.

c. **Slowly ADJUST** air pressure regulator bolt (by turning clockwise) until 14 - 18 psig is indicated on gage 2, **THEN**

CLOSE Valve 4.

d. **OBSERVE** pressure on Pressure Gage 2 for 2 minutes, **AND**

IF a reduction in pressure is observed, **THEN**

PERFORM the following:

1) **LEAK** check all fittings from Valve 4 to Valve 6/7 using leak detection liquid.

2) **IF** using portable ventilation system, **THEN**

START portable Ventilation System.

3) **POSITION** the following valves:

		√
• Valve 4	CLOSED	
• Valve 7	OPEN	

4) **PERFORM** troubleshooting and repair as needed to prevent leaks on the Air Delivery System.

7.2.10 Air Delivery System Assembly And Pressure Check Using Helium, Cont.'d **Initials**

Step 8d, Cont'd

5) WHEN troubleshooting and repair of all leaks are complete, **THEN**

SHUTDOWN portable ventilation system, if portable ventilation system is in use.

6) POSITION the following valves:

	√
• **CLOSE** Valve 7	_____
• **OPEN** Valve 4	_____

_____

7) REPEAT Step 8.d as necessary until no leaks are found.

e. OPEN Valve 4, **AND**

WHEN the rotameter float lowers to ZERO, **AND**

WHEN gage 2 indicates 14-18 psig, **THEN**

OPEN Valve 6, **AND**

CLOSE Valve 9. _____

f. OBSERVE pressure indication on gage 2 for 2 minutes.

g. IF pressure remains stable, as indicated on gage 2, **THEN**

GO TO Subsection 7.2.11.

h. IF a reduction of pressure is observed, **THEN**

1) OPEN Valve 9.

2) LEAK-CHECK all fittings from Valve 4 to Valve 8 using leak detection liquid. (i.e., liquid soap or equivalent)

3) IF using portable ventilation system, **THEN**

START Portable Ventilation System. _____

4) POSITION the following valves:

		√
• Valve 9	CLOSED	_____
• Valve 7	OPEN	_____

_____

5) PERFORM troubleshooting and repair as needed to prevent leaks on the Air Delivery System. _____

7.2.10 Air Delivery System Assembly And Pressure Check Using Helium, Cont.'d **Initials**

Step 8h, Cont'd

6) **WHEN** troubleshooting and repair of all leaks are complete, **THEN**

SHUTDOWN portable ventilation system, if portable ventilation system is in use**.** _____

7) **ENSURE** position of the following valves:

- **CLOSE** Valve 7 _____
- **OPEN** Valve 9 _____

i. **REPEAT** Steps 8.e through 8.h, as necessary, until no leaks are observed.

j. **PROCEED** to Subsection 7.2.11.

Subsection Completed By: _____ / _____
Signature Print Name

Date: _____ Time: _____

7.2.11 Determining Leak Site Via MLDB Using Helium/Pressure Testing Line Number(s) 151, 152, 156 Or 157 **Initials**

1. **ENSURE** completion of Subsection 7.2.10. _____

> **NOTE:** Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.

2. **CHANGE OUT** the Helium cylinders per Subsection 7.2.14 when the pressure on Gage He-2 indicates 20 psig.

3. **RECORD** each cylinder change out in the comment section of Subsection 7.2.14.

4. **ENSURE** position of the following valves:

		√
• Valve 2	CLOSED	_____
• Valve 3	OPEN	_____
• Valve 5	OPEN	_____
• Valve 6	OPEN	_____
• Valve 7	CLOSED	_____
• Valve 8	CLOSED	_____
• Valve 10	CLOSED	_____
• Valve 11	CLOSED	_____
• Valve 12	OPEN	_____
• Valve 13	OPEN	_____ _____

5. **ENSURE** position of the following valves:

		√
• Valve 4	OPEN	_____
• Valve 9	OPEN	_____ _____

6. **SAMPLE** in pre-designated areas prior to initiating Helium induction.

7. **BEGIN** inducing Helium into the waste line jacket by performing the following:

a. **OPEN** Valve 8. _____

b. **OPEN** Valve 10 as needed to expedite pressurization of the waste line jacket.

c. **ADJUST** Helium cylinder regulator, AND/OR, Air Delivery System regulator, as needed, to obtain desired flow.

7.2.11 Determining Leak Site Via MLDB Using Helium/Pressure Testing Line Number(s) 151, 152, 156 Or 157, Cont'd **Initials**

8. **CONTINUE** to induce Helium into the Waste Line Jacket, as directed by Shift Management.

9. **AFTER** 30 minutes, sample in pre-designated areas every 10 minutes for 30 minutes **AND**

RECORD results in Subsection 7.2.15.

10. **WHEN** all pre-designated areas have been sampled, OR, as directed by Shift Management, **THEN**

a. **CLOSE** Valve 5 _____

b. **CLOSE** Valve 9 _____

11. **WHEN** sample results are obtained, **AND**

IF required, **THEN**

INITIATE Work Request to repair the Waste Line Jacket and/or MLDB as directed by Shift Management. _____

Subsection Completed By: _____ / _____
Signature Print Name

Date: _____ Time: _____

7.2.12 Air Delivery System Return To Normal **Initials**

> **NOTE:** Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.

1. **IF** using portable ventilation system, **THEN**

START portable Ventilation system. _____

2. **Slowly OPEN** Valve 7 to vent the Waste Line Jacket. _____

3. **WHEN** pressure, as indicated on Gage 2, reduces to less than or equal to 1 psig, AND no further decrease is observed, **THEN**

SHUTDOWN air compressor, (if operating), **AND**

CLOSE Valve 8 _____

CLOSE Valve 6 _____

4. **ENSURE** position of the following valves to depressurize the Air Delivery System:

		√
• Valve 1	OPEN (if using air)	_____
• Valve 9	CLOSED (if using Helium)	_____
• Valve 2	OPEN (if using air)	_____
• Valve 3	OPEN	_____
• Valve 4	OPEN (if using Helium)	_____
• Valve 5	OPEN	_____

_____

5. **WHEN** pressure, as indicated on Gage 1, reduces to less than or equal to 1 psig, AND no further reduction of pressure is observed, **THEN**

ENSURE position of the following valves:

		√
• Valve 1	CLOSED	_____
• Valve 2	CLOSED	_____
• Valve 4	CLOSED	_____
• Valve 5	CLOSED	_____
• Valve 7	CLOSED	_____
• Valve 12	CLOSED	_____
• Valve 13	CLOSED	_____

_____

7.2.12 Air Delivery System Return To Normal, Cont.'d **Initials**

NOTE:	RCO shall be present during all line breaks and constantly monitoring.

6. **WHEN** the system is vented, **THEN**

PERFORM the following:

a. **REMOVE** air tubing / hose from Valve 7 and the inspection port OR portable ventilation system.

b. **IF** RCO survey warrants, **THEN**

DISPOSE of vent tubing per RCO instructions.

c. **IF** valve port plug was removed, **THEN**

REMOVE valve port plug from plastic bag, **AND**

RE-INSTALL valve port plug in valve port.

d. **IF** air was used, **THEN**

REMOVE hose from air compressor at Valve 1, **AND**

REMOVE other end of hose from Air Delivery System at Valve 2. _____

e. **IF** Helium was used, **THEN**

REMOVE air/tubing / hose from Helium cylinder at Valve 9, **AND**

REMOVE other end of air tubing/ hose from Air Delivery System at Valve 4. _____

f. **IF** portable ventilation system was used for the performance of this procedure, **THEN**

INITIATE portable ventilation system return to normal as directed by Shift Management. _____

7.2.12 Air Delivery System Return To Normal, Cont.'d **Initials**

7. **DISCONNECT** Air Delivery System from the Waste Line Jacket as follows:

a. **DISCONNECT** air tubing / hose from the Air Delivery Systems at Valve 6, **THEN**

DISCONNECT the opposite end of the air tubing / hose from Valve 8. _____

Subsection Completed By: _____ / _____
Signature Print Name

Date: _____ Time: _____

7.2.13 MLDB Return TO Normal **Initials**

1. **RETURN** the MLDB(s) to normal by performing the following:

a. **HAVE** Maintenance remove the MLDB flange bolts.

b. **REMOVE** the flange, with valve 8 air connection stub-out.

*** Independent Verification***

c. **REMOVE** MLDB overflow plug. _____

_____
IV

d. **PLACE** the new gasket onto the MLDB.

e. **PLACE** the original 8- inch flange and conduit onto the MLDB.

f. **HAVE** Maintenance install and tighten flange bolts.

g. **IF** necessary, **INSTALL** the conductivity probe junction box**, AND**

1) **INSTALL** reducer/locking ring on the conductivity probe stand pipe.

2) **HAVE** Maintenance CONNECT probe leads to the terminal strip.

3) **HAVE** CRO record in Control Room log that leads have been landed.

h. **RE-INSTALL** conductivity probe per SW11.6-SVP-21, Section 4.4, *Method Four, Conductivity Probe Installation and Testing.*

2. **REPEAT** Step 1, as necessary, to complete return to normal for MLDB(s) listed in Subsection 7.2.15. _____

3. **ENSURE** return to normal is complete for the Line Segments associated MLDB(s). _____

4. **RETURN** Air Delivery System and air compressor to proper storage, as RCO survey(s) dictate, if applicable. _____

7.2.13 MLDB Return To Normal, Cont.'d **Initials**

5. **IF** Helium cylinder(s) were used, **THEN**

RETURN Helium cylinder(s) to proper storage, as RCO survey(s) dictate.

6. **IF** lockout was installed on line segments prime movers, **THEN**

REMOVE lockout from line segments prime movers as directed by Shift Manager / Shift Management.

7. **COMPLETE** all applicable steps of subsection 7.2.15.

Subsection Completed By: _____ / _____
Signature Print Name

Date: _____ Time: _____

Independent Verification By: _____ / _____
Signature Print Name

Date: _____ Time: _____

7.2.14 Changing Helium Bottles

Initials

> **NOTE:** Refer to Appendices 6.4 and/or 6.5 for equipment and valve location and identification.

1. **IF** changing out Helium bottle, **THEN**

PERFORM the following:

- **CLOSE** Valve 9 _____
- **CLOSE** Valve 4 _____

2. **REMOVE** Helium regulator assembly from the empty Helium bottle. _____

3. **CONNECT** Helium regulator assembly to full Helium bottle. _____

> **NOTE:** Helium cylinder regulator may need to be adjusted to prevent regulator gage He-2 indication from exceeding 15 psig.

4. **OPEN** Valve 9. _____

5. **Slowly OPEN** Valve 4 allowing Helium to enter system. _____

Comments: _____

Subsection Completed By: _____ / _____
Signature Print Name

Date: _____ Time: _____

7.2.15 Acceptance Criteria **Initials**

NOTE: The Independent Verification in Step 1 is to ensure the following:

- Correct Attachment is being used.
- Line Number CLI(s) and LDB(s) / MLDB(s) are correct.
- Service is correct.
- Information was entered legibly.

*** Independent Verification ***

1. **RECORD** the following information below and in Passport History: (Refer to Section 6.6, *Line Segments*)

Line Number CLI:_____

Service:_____

Associated Line Numbers(s) CLI:_____

Associated LDB(s)/MLDB(s):_____

Type Test (air, helium, water):_____

Test Date Performed:_____

Test Results (SAT or UNSAT):_____ _____

_____
IV

INITIAL READING

TIME	PRESSURE READING (psig) (7.2.9.11)	INITIALS

Initial Gage 2 pressure reading is ≥ 15 psig? YES / NO (Circle One)

FINAL READING

TIME	PRESSURE READING (psig) (7.2.9.11)	INITIALS

Pressure Dropped ≤ 1 psig in 20 Minutes? YES / NO (Circle One)

Comments:_____

7.2.15 Acceptance Criteria, Cont.'d

2. Surveillance test results: SAT_____UNSAT_____

IF surveillance test results are UNSAT, **THEN**

DOCUMENT actions taken below:

Comments:_____

3. **UPDATE** the "Transfer Line & Associated Conductivity Probe" Status Board.

4. Data or observed operations performed in this attachment have been reviewed and are within the required acceptance criteria or tolerance. Exceptions or data outside of the required acceptance criteria are recorded in the comments section of this procedure.

IF the data or observed operations in this procedure deviate from the acceptance criteria, **THEN**

NOTIFY Shift Manager.

Attachment
Completed By: _____ / _____
Signature Print Name
Date: _____ Time: _____

First Line Management
Review By: _____ / _____
Signature Print Name
Date: _____ Time: _____

STE/System Engineer
Review By: _____ / _____
Signature Print Name
Date: _____ Time: _____

Independent
Verification By: _____ / _____
Signature Print Name
Date: _____ Time: _____

Shift Manager
Review By: _____ / _____
Signature Print Name
Date: _____ Time: _____

FORWARD a copy of this surveillance to the Surveillance Tracking Coordinator to place a copy in the Surveillance Tracking Files.

7.2.15 Acceptance Criteria, Cont.'d

NOTE: Additional copies of this page may be needed to complete this procedure.

Annulus Fan **ON** / **OFF** Purge Fan **ON** / **OFF**

TABLE 1

PAGE 1 OF 1

SAMPLE DATA		Time Since Beginning Helium Introduction	Comments
ID	**Response**		

Comments: _____