MECHANICAL UTILITIES TEST REPORT

PREPARED BY: O'BRIEN  LIFE #: 24021  DATE: 8/28/17

TEST LOCATION: FIS/NFT  APPLICABLE DRAWING(S): SEE ATTACHMENT

ATTACHMENT  Y/N  (CIRCLE ONE)

DESCRIPTION OF COMPONENT/SYSTEM:
1/2" PROCESS AIR LINE

MAXIMUM ALLOWABLE WORKING PRESSURE (PSIG) OF COMPONENT/SYSTEM:
90 PSIG

MECHANICAL UTILITY SYSTEM (MARK AN "X" ON ALL THAT APPLY):
PRIMARY DI WATER  □  SECONDARY DI WATER  □  ALUMINUM DI WATER  □
PROCESS CHILLED WATER  □  COMPRESSED AIR  □  GASEOUS NITROGEN  □  OTHER  □

IF 'OTHER' IS SELECTED, DESCRIBE THE SYSTEM:

TEST GAUGE INFORMATION:
RANGE: 0-300 PSIG  UNIT OF MEASUREMENT: PSIG
SERIAL NUMBER: M014904  CALIBRATION DUE DATE: 9/1/2017

OPERATIONS CONDUCTED (SELECT ALL THAT APPLY):
LEAK TEST  X  FLUSH  □  HYDROSTATIC PRESSURE TEST  □  PNEUMATIC PRESSURE TEST  X

OTHER  □

IF 'OTHER' IS SELECTED, DESCRIBE THE OPERATION:

R. O'BRIEN 08/07/2015 REV A
LEAK TEST:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

TEST FLUID: AIR FLUID TEMPERATURE: AMBIENT °F FLUID PRESSURE: ≤ 60 PSIG

METHOD USED (VISUAL, SOAP BUBBLES, VACUUM, ETC.): VISUAL GAUGE DECAY

***TEST DURATION SHALL BE AS LONG AS REQUIRED TO EVALUATE POTENTIAL LEAK POINTS***

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: [Signature] DATE: 8/28/17

RECORD ACTUAL LEAK TEST DURATION HERE: 2 Hours

NO LEAKAGE PRESENT [ ] SIGNATURE: [Signature]

FLUSH:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

FLUSH FLUID: [Signature] FLUID TEMPERATURE: °F FLUID PRESSURE: ______ PSIG

FLUSH DURATION: ___________________________ MINUTES/HOURS (CIRCLE ONE)

FLUSH PARAMETERS: ____________________________ (WRITE “N/A” IF NONE APPLY)

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: _______ DATE: _______

COMMENTS:

________________________________________

ACCEPTABLE [ ] SIGNATURE: [Signature]

PRESSURE TEST:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

TYPE: HYDROSTATIC [X] PNEUMATIC [ ] TEST FLUID: ______ FLUID TEMPERATURE: _____ °F

SPECIFIED STARTING PRESSURE: 60 PSIG SPECIFIED MAXIMUM TEST PRESSURE: 110 PSIG

SPECIFIED PRESSURE AND TIME INCREMENTS: 10/10 PSIG/MINUTES

SPECIFIED MAXIMUM TEST PRESSURE DURATION: 10 MINUTES (10 MINUTES MINIMUM)

R. O’BRIEN 08/07/2015 REV A
MECHANICAL UTILITIES TEST REPORT - PAGE 3

PRESSURE TEST (CONTINUED):

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: M.D. DATE: 8/28/17

ENVIRONMENTAL FACTORS: TEMPERATURE _______ °F RELATIVE HUMIDITY _______ %

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PRESSURE TEST ACCEPTABLE ✓

TECHNICIAN SIGNATURE/LIFE NUMBER: 2553 1 / 6

WITNESS SIGNATURE/LIFE NUMBER: 2282

OTHER:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

DETAILED DESCRIPTION OF OPERATION (ATTACHMENT Y/N):

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

TEST FLUID: _______ FLUID TEMPERATURE _______ °F FLUID PRESSURE: _______ PSIG

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: _______ DATE: _______

ENVIRONMENTAL FACTORS: TEMPERATURE _______ °F RELATIVE HUMIDITY _______ %

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R. O'BRIEN 08/07/2015 REV A
OTHER (CONTINUED):
THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

NOTES:

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THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

NOTES:

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TEST ACCEPTABLE ☐

TECHNICIAN SIGNATURE/LIFE NUMBER: ________________________________

WITNESS SIGNATURE/LIFE NUMBER: ________________________________

R. O'BRIEN 08/07/2015 REV A
DO NOT INCLUDE PRV 158 OR PRESSURE GAUGES IN PRESSURE TEST
SEE PRESSURE TEST REPORT FOR FULL PARAMETERS

R. O'BRIEN 08/28/2017

22BM MET REAR

EXISTING 1" CA CONNECTION

RATCHET WALL PENETRATION

PRESSURE TEST BOUNDARY VALVE

22BM MET FRONT

22ID FIS REAR

22ID FIS FRONT

R. O'BRIEN – 06/1/2017 – REVISED 07/20/2017 & 08/28/2017
MECHANICAL UTILITIES TEST REPORT

PREPARED BY: R. O'BRIEN  LIFE #: 24021  DATE: 01/12/17

TEST LOCATION: P15-MET CABINS  APPLICABLE DRAWING(S): ATTACHMENT
ATTACHMENT ☒ N (CIRCLE ONE)

DESCRIPTION OF COMPONENT/SYSTEM:
G N O 2  H e  4  A r

MAXIMUM ALLOWABLE WORKING PRESSURE (PSIG) OF COMPONENT/SYSTEM:
135 PSIG

MECHANICAL UTILITY SYSTEM (MARK AN “X” ON ALL THAT APPLY):

PRIMARY DI WATER ☐  SECONDARY DI WATER ☐  ALUMINUM DI WATER ☐
PROCESS CHILLED WATER ☐  COMPRESSED AIR ☐  GASEOUS NITROGEN ☒  OTHER ☒

IF ‘OTHER’ IS SELECTED, DESCRIBE THE SYSTEM:
 Helium and Argon 1/4" gas lines

STANDARD TEST GAUGE INFORMATION: REFERENCE GAUGE USED FROM STANDARD

RANGE: 0 - 2000  UNIT OF MEASUREMENT: PSIG

SERIAL NUMBER: 11547600  CALIBRATION DUE DATE: 2/8/18

OPERATIONS CONDUCTED (SELECT ALL THAT APPLY):

LEAK TEST ☒  FLUSH ☐  HYDROSTATIC PRESSURE TEST ☐  PNEUMATIC PRESSURE TEST ☒

OTHER ☐

IF ‘OTHER’ IS SELECTED, DESCRIBE THE OPERATION:

R. O’BRIEN 08/07/2015 REV A
PRESSURE TEST (CONTINUED):

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: J. Smith DATE: 9-18-17

ENVIRONMENTAL FACTORS: TEMPERATURE _______ °F RELATIVE HUMIDITY _______%

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PRESSURE TEST ACCEPTABLE □ TECHNICIAN SIGNATURE/LIFE NUMBER: [Signature]

WITNESS SIGNATURE/LIFE NUMBER: [Signature]

OTHER:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

DETAILED DESCRIPTION OF OPERATION (ATTACHMENT Y / N):

________________________________________________________________________

________________________________________________________________________

TEST FLUID: _____________ FLUID TEMPERATURE _______ °F FLUID PRESSURE: ___________ PSIG

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: ___________ DATE: ___________

ENVIRONMENTAL FACTORS: TEMPERATURE _______ °F RELATIVE HUMIDITY _______%

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MECHANICAL UTILITIES TEST REPORT - PAGE 2

LEAK TEST:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

TEST FLUID: AIR FLUID TEMPERATURE AMBIENT °F FLUID PRESSURE: 600 PSIG

METHOD USED (VISUAL, SOAP BUBBLES, VACUUM, ETC.): VISUAL, CANOE DEFLY, ETC.

***TEST DURATION SHALL BE AS LONG AS REQUIRED TO EVALUATE POTENTIAL LEAK POINTS***

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: J. Alford DATE: 9-18-17

RECORD ACTUAL LEAK TEST DURATION HERE: 10 min

NO LEAKAGE PRESENT ✓ SIGNATURE: [Signature]

FLUSH:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

FLUSH FLUID: FLUID TEMPERATURE °F FLUID PRESSURE: PSIG

FLUSH DURATION: MINUTES/HOURS (CIRCLE ONE)

FLUSH PARAMETERS: (WRITE "N/A" IF NONE APPLY)

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: DATE:

COMMENTS:

ACCEPTABLE □ SIGNATURE: __________________________

PRESSURE TEST:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

TYPE: HYDROSTATIC □ PNEUMATIC ✓ TEST FLUID: AIR FLUID TEMPERATURE AMBIENT

SPECIFIED STARTING PRESSURE: 60 PSIG SPECIFIED MAXIMUM TEST PRESSURE: 150 PSIG

SPECIFIED PRESSURE AND TIME INCREMENTS: 10/10 PSIG/MINUTES

SPECIFIED MAXIMUM TEST PRESSURE DURATION: 10 MINUTES (10 MINUTES MINIMUM)

R. O'BRIEN 08/07/2015 REV A
MECHANICAL UTILITIES TEST REPORT

PREPARED BY: R. O'BRIEN  LIFE #: 24021  DATE: 9/24/18

TEST LOCATION: CELL 23 IN TUNNEL  APPLICABLE DRAWING(S): ATTACHED

DESCRIPTION OF COMPONENT/SYSTEM:
MA COOLING CIRCUIT

MAXIMUM ALLOWABLE WORKING PRESSURE (PSIG) OF COMPONENT/SYSTEM:
150

MECHANICAL UTILITY SYSTEM (MARK AN "X" ON ALL THAT APPLY):
PRIMARY DI WATER ☐  SECONDARY DI WATER ☑  ALUMINUM DI WATER ☐
PROCESS CHILLED WATER ☐  COMPRESSED AIR ☐  GASEOUS NITROGEN ☐  OTHER ☐

IF 'OTHER' IS SELECTED, DESCRIBE THE SYSTEM:

TEST GAUGE INFORMATION:
RANGE: 0 - 2000  UNIT OF MEASUREMENT: PSIG
SERIAL NUMBER: 1134760  CALIBRATION DUE DATE: 3/16/19

OPERATIONS CONDUCTED (SELECT ALL THAT APPLY):
LEAK TEST ☑  FLUSH ☐  HYDROSTATIC PRESSURE TEST ☑  PNEUMATIC PRESSURE TEST ☐
OTHER ☐

IF 'OTHER' IS SELECTED, DESCRIBE THE OPERATION:

R. O'BRIEN 11/07/2017 REV B
### PRESSURE TEST (CONTINUED):

**THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN**

CONDUCTED BY: [Signature]  
DATE: 9-25-15

ENVIRONMENTAL FACTORS (OPTIONAL): TEMPERATURE ______ °F  RELATIVE HUMIDITY ______ %

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PRESSURE TEST ACCEPTABLE [ ]  
TECHNICIAN SIGNATURE/LIFE NUMBER: [Signature]

WITNESS SIGNATURE/LIFE NUMBER: [Signature]

### OTHER:

**THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER**

DETAILED DESCRIPTION OF OPERATION (ATTACHMENT Y / N):


TEST FLUID: ______  
FLUID TEMPERATURE ______ °F  FLUID PRESSURE: ______ PSIG

**THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN**

CONDUCTED BY: ______  
DATE: ______

ENVIRONMENTAL FACTORS (OPTIONAL): TEMPERATURE ______ °F  RELATIVE HUMIDITY ______ %

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LEAK TEST:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

TEST FLUID: __________ FLUID TEMPERATURE __________ °F FLUID PRESSURE: __________ PSIG

METHOD USED (VISUAL, SOAP BUBBLES, VACUUM, ETC.): VISUAL DECAY

***TEST DURATION SHALL BE AS LONG AS REQUIRED TO EVALUATE POTENTIAL LEAK POINTS***

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: __________ DATE: 9-25-18

RECORD ACTUAL LEAK TEST DURATION HERE: __________

NO LEAKAGE PRESENT □ SIGNATURE: __________

FLUSH:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

FLUSH FLUID: __________ FLUID TEMPERATURE __________ °F FLUID PRESSURE: __________ PSIG

FLUSH DURATION: __________ MINUTES/HOURS (CIRCLE ONE)

FLUSH PARAMETERS: __________

____________________________________ (WRITE “N/A” IF NONE APPLY)

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: __________ DATE: __________

COMMENTS:

____________________________________

ACCEPTABLE □ SIGNATURE: __________

PRESSURE TEST:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

TYPE: HYDROSTATIC X PNEUMATIC □ TEST FLUID: __________ FLUID TEMPERATURE __________ °F

SPECIFIED STARTING PRESSURE: __________ PSIG SPECIFIED MAXIMUM TEST PRESSURE: __________ PSIG

SPECIFIED PRESSURE AND TIME INCREMENTS: __________ PSIG/MINUTES

SPECIFIED MAXIMUM TEST PRESSURE DURATION: __________ MINUTES (10 MINUTES MINIMUM)
MECHANICAL UTILITIES TEST REPORT

PREPARED BY: R. O'BRIEN  
LIFE #: 24021  
DATE: 8/22/18

TEST LOCATION: SB-5  
APPLICABLE DRAWING(S): YES-2 ATTACH

ATTACHMENT Y/N (CIRCLE ONE)

DESCRIPTION OF COMPONENT/SYSTEM: M1 MIRROR FOR AS/MET

MAXIMUM ALLOWABLE WORKING PRESSURE (PSIG) OF COMPONENT/SYSTEM: 150 PSIG

MECHANICAL UTILITY SYSTEM (MARK AN “X” ON ALL THAT APPLY):

PRIMARY DI WATER □  SECONDARY DI WATER ☑  ALUMINUM DI WATER □
PROCESS CHILLED WATER □  COMPRESSED AIR □  GASEOUS NITROGEN □  OTHER □

IF ‘OTHER’ IS SELECTED, DESCRIBE THE SYSTEM:

TEST GAUGE INFORMATION:

REF. GAUGE WIKI 11547680 DUE 4/16/19

RANGE: 0-400 PSIG  
UNIT OF MEASUREMENT: PSIG

SERIAL NUMBER: M014749  
CALIBRATION DUE DATE: 9/15/18

OPERATIONS CONDUCTED (SELECT ALL THAT APPLY):

LEAK TEST ☑  FLUSH □  HYDROSTATIC PRESSURE TEST ☑  PNEUMATIC PRESSURE TEST □

OTHER □

IF ‘OTHER’ IS SELECTED, DESCRIBE THE OPERATION:

R. O'BRIEN 11/07/2017 REV B
LEAK TEST:
THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER
TEST FLUID: $\text{H}_2\text{O}$  FLUID TEMPERATURE $\text{MARCH 26}$ °F  FLUID PRESSURE: $\sim 50$ PSIG
METHOD USED (VISUAL, SOAP BUBBLES, VACUUM, ETC.): VISUAL GAUGE DECAY

***TEST DURATION SHALL BE AS LONG AS REQUIRED TO EVALUATE POTENTIAL LEAK POINTS***

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN
CONDUCTED BY: [Signature]    DATE: 3-28-18
RECORD ACTUAL LEAK TEST DURATION HERE: 20 min
NO LEAKAGE PRESENT ☒  SIGNATURE: [Signature]

FLUSH:
THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER
FLUSH FLUID:     FLUID TEMPERATURE     °F  FLUID PRESSURE:     PSIG
FLUSH DURATION:     MINUTES/HOURS (CIRCLE ONE)
FLUSH PARAMETERS:     (WRITE "N/A" IF NONE APPLY)

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN
CONDUCTED BY:     DATE:     
COMMENTS:

ACCEPTABLE ☐  SIGNATURE: 

PRESSURE TEST:
THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER
TYPE: HYDROSTATIC ☒  PNEUMATIC ☐  TEST FLUID: $\text{H}_2\text{O}$  FLUID TEMPERATURE $\text{MARCH 26}$ °F
SPECIFIED STARTING PRESSURE: $50$ PSIG  SPECIFIED MAXIMUM TEST PRESSURE: $150$ PSIG
SPECIFIED PRESSURE AND TIME INCREMENTS: $25/10$ PSIG/MINUTES
SPECIFIED MAXIMUM TEST PRESSURE DURATION: $10$ MINUTES (10 MINUTES MINIMUM)
**MECHANICAL UTILITIES TEST REPORT - PAGE 3**

**PRESSURE TEST (CONTINUED):**

*This section to be completed by qualified technician*

**CONDUCTED BY:** [Signature]  
**DATE:** 8-22-18

**ENVIRONMENTAL FACTORS (OPTIONAL):**  
**TEMPERATURE** ________ °F  
**RELATIVE HUMIDITY** ________ %

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**PRESSURE TEST ACCEPTABLE**  

☐  

**TECHNICIAN SIGNATURE/LIFE NUMBER:**  

[Signature] 25746

**WITNESS SIGNATURE/LIFE NUMBER:**  

[Signature] 22429

**OTHER:**

*This section to be completed by cognizant engineer*

**DETAILED DESCRIPTION OF OPERATION (ATTACHMENT Y / N):**

________________________________________________________________________

________________________________________________________________________

**TEST FLUID:** ____________ **FLUID TEMPERATURE** ________ °F  
**FLUID PRESSURE:** ____________ **PSIG**

*This section to be completed by qualified technician*

**CONDUCTED BY:** ____________  
**DATE:** ____________

**ENVIRONMENTAL FACTORS (OPTIONAL):**  
**TEMPERATURE** ________ °F  
**RELATIVE HUMIDITY** ________ %

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R. O'BRIEN 11/07/2017 REV B
M1 Mirror Cooling
0.5", SwageLock
Test connector and boundary
MECHANICAL UTILITIES TEST REPORT

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

PREPARED BY: R. O’BRIEN LIFE #: 240 21 DATE: 8/22/18

TEST LOCATION: SB-5 APPLICABLE DRAWING(S): YES - 2 ATTACH.

ATTACHMENT Y/N (CIRCLE ONE)

DESCRIPTION OF COMPONENT/SYSTEM:
M1 MIRROR FOR FS/MFT

MAXIMUM ALLOWABLE WORKING PRESSURE (PSIG) OF COMPONENT/SYSTEM:
150 PSIG

MECHANICAL UTILITY SYSTEM (MARK AN “X” ON ALL THAT APPLY):

PRIMARY DI WATER  □  SECONDARY DI WATER X  ALUMINUM DI WATER □

PROCESS CHILLED WATER □  COMPRessed AIR □  GASEOUS NITROGEN □  OTHER □

IF ‘OTHER’ IS SELECTED, DESCRIBE THE SYSTEM:

----------------------------------

TEST GAUGE INFORMATION:

REF. GAUGE WIKA 1154760 DUE 4/16/19

RANGE: 0 - 400 PSIG  UNIT OF MEASUREMENT: PSIG

SERIAL NUMBER: M014749  CALIBRATION DUE DATE: 9/15/18

OPERATIONS CONDUCTED (SELECT ALL THAT APPLY):

LEAK TEST X  FLUSH □  HYDROSTATIC PRESSURE TEST X  PNEUMATIC PRESSURE TEST □

OTHER □

IF ‘OTHER’ IS SELECTED, DESCRIBE THE OPERATION:

----------------------------------

R. O’BRIEN 11/07/2017 REV B
LEAK TEST:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

TEST FLUID: H₂O  FLUID TEMPERATURE  °F  FLUID PRESSURE: 50  PSIG

METHOD USED (VISUAL, SOAP BUBBLES, VACUUM, ETC.): VISUAL GAUGE DECAV

***TEST DURATION SHALL BE AS LONG AS REQUIRED TO EVALUATE POTENTIAL LEAK POINTS***

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: BRIGUERI  DATE: 4-28-18

RECORD ACTUAL LEAK TEST DURATION HERE: 20 MIN.

NO LEAKAGE PRESENT ☒  SIGNATURE: [Signature]

FLUSH:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

FLUSH FLUID:         FLUID TEMPERATURE  °F  FLUID PRESSURE:  PSIG

FLUSH DURATION: __________________________ MINUTES/HOURS (CIRCLE ONE)

FLUSH PARAMETERS:

________________________________________ (WRITE "N/A" IF NONE APPLY)

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY:        DATE:  

COMMENTS:

________________________________________

ACCEPTABLE ☐  SIGNATURE: [Signature]

PRESSURE TEST:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

TYPE: HYDROSTATIC ☒  PNEUMATIC ☐  TEST FLUID: H₂O  FLUID TEMPERATURE  °F

SPECIFIED STARTING PRESSURE: 50  PSIG  SPECIFIED MAXIMUM TEST PRESSURE: 150  PSIG

SPECIFIED PRESSURE AND TIME INCREMENTS: 35/0  PSIG/MINUTES

SPECIFIED MAXIMUM TEST PRESSURE DURATION: 10 MINUTES (10 MINUTES MINIMUM)
MECHANICAL UTILITIES TEST REPORT - PAGE 3

PRESSURE TEST (CONTINUED):

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: [Signature] DATE: 8-32-18

ENVIRONMENTAL FACTORS (OPTIONAL): TEMPERATURE ________ °F RELATIVE HUMIDITY ________ %

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<tr>
<th>SPECIFIED PRESSURE</th>
<th>ACTUAL PRESSURE</th>
<th>SPECIFIED PRESSURE</th>
<th>ACTUAL PRESSURE</th>
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<tbody>
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<td>150</td>
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PRESSURE TEST ACCEPTABLE ✓ TECHNICIAN SIGNATURE/LIFE NUMBER: [Signature] 25746

WITNESS SIGNATURE/LIFE NUMBER: [Signature] 22429

OTHER:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

DETAILED DESCRIPTION OF OPERATION (ATTACHMENT Y / N):

________________________________________________________________________

________________________________________________________________________

TEST FLUID: ______ FLUID TEMPERATURE ______ °F FLUID PRESSURE: ______ PSIG

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: ______ DATE: ______

ENVIRONMENTAL FACTORS (OPTIONAL): TEMPERATURE ______ °F RELATIVE HUMIDITY ______ %

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OTHER (CONTINUED):

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

NOTES:

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THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

NOTES:

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TEST ACCEPTABLE ☐

TECHNICIAN SIGNATURE/LIFE NUMBER: ____________________________

WITNESS SIGNATURE/LIFE NUMBER: ____________________________

R. O'BRIEN 11/07/2017 REV B
MECHANICAL UTILITIES TEST REPORT

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

PREPARED BY: R. O'BRIEN LIFE #: 24061 DATE: 9/12/17

TEST LOCATION: FISHET CABINS APPLICABLE DRAWING(S): ATTACHMENT
ATTACHMENT ☐ N (CIRCLE ONE)

DESCRIPTION OF COMPONENT/SYSTEM:
PCW PIPING/VALVES

MAXIMUM ALLOWABLE WORKING PRESSURE (PSIG) OF COMPONENT/SYSTEM:
75 PSIG

MECHANICAL UTILITY SYSTEM (MARK AN “X” ON ALL THAT APPLY):

PRIMARY DI WATER ☐ SECONDARY DI WATER ☐ ALUMINUM DI WATER ☐
PROCESS CHILLED WATER ☑ COMPRESSED AIR ☐ GASEOUS NITROGEN ☐ OTHER ☐

IF ‘OTHER’ IS SELECTED, DESCRIBE THE SYSTEM:


STANDARD TEST GAUGE INFORMATION: REFERENCE GAUGE USED FROM STANDARD

RANGE: 0 - 2000 UNIT OF MEASUREMENT: PSIG
SERIAL NUMBER: 1154760 CALIBRATION DUE DATE: 2/18/18

OPERATIONS CONDUCTED (SELECT ALL THAT APPLY):

LEAK TEST ☑ FLUSH ☑ HYDROSTATIC PRESSURE TEST ☑ PNEUMATIC PRESSURE TEST ☐
OTHER ☐

IF ‘OTHER’ IS SELECTED, DESCRIBE THE OPERATION:


R. O'BRIEN 08/07/2015 REV A
MEchanical Utilities test report - page 3

Pressure test (continued):

This section to be completed by qualified technician

Conducted by: J. Ahn
Date: 9 - 19 - 17

Environmental factors: temperature _______ °F  relative humidity _______ %

Pressure test data to be completed during test

<table>
<thead>
<tr>
<th>Specified pressure</th>
<th>Actual pressure</th>
<th>Specified pressure</th>
<th>Actual pressure</th>
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</table>

Pressure test acceptable [ ]

Technician signature/life number:

Witness signature/life number:

Other:

This section to be completed by cognizant engineer

Detailed description of operation (attachment Y / N):

__________________________

Test fluid:  __________  fluid temperature: _______ °F  fluid pressure: _______ psig

This section to be completed by qualified technician

Conducted by:  __________  date:  __________

Environmental factors: temperature _______ °F  relative humidity _______ %

<table>
<thead>
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<th>Specified</th>
<th>Actual</th>
<th>Specified</th>
<th>Actual</th>
<th>% Variance</th>
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R. O'Brien 08/07/2015 Rev A
LEAK TEST:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

TEST FLUID: AIR   FLUID TEMPERATURE: AMB. °F   FLUID PRESSURE: 40 PSIG

METHOD USED (VISUAL, SOAP BUBBLES, VACUUM, ETC.): VISUAL GAUGE INSPECTION, ETC.

***TEST DURATION SHALL BE AS LONG AS REQUIRED TO EVALUATE POTENTIAL LEAK POINTS***

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: J. ALBERT   DATE: 9-19-17

RECORD ACTUAL LEAK TEST DURATION HERE: 20 MIN.

NO LEAKAGE PRESENT   SIGNATURE: [Signature]

FLUSH:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

FLUSH FLUID: WATER   FLUID TEMPERATURE: AMB. °F   FLUID PRESSURE: HOUSE PSIG

FLUSH DURATION: 20 MINUTES/HOURS (CIRCLE ONE)

FLUSH PARAMETERS: N/A

(WRITE "N/A" IF NONE APPLY)

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

CONDUCTED BY: J. ALBERT   DATE: 9-19-17

COMMENTS:

ACCEPTABLE   SIGNATURE: [Signature]

PRESSURE TEST:

THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

TYPE: HYDROSTATIC X   PNEUMATIC □   TEST FLUID: WATER   FLUID TEMPERATURE: AMB. °F

SPECIFIED STARTING PRESSURE: 60 PSIG   SPECIFIED MAXIMUM TEST PRESSURE: 150 PSIG

SPECIFIED PRESSURE AND TIME INCREMENTS: 10/10 PSIG/MINUTES

SPECIFIED MAXIMUM TEST PRESSURE DURATION: 10 MINUTES (10 MINUTES MINIMUM)
OTHER (CONTINUED):

THIS SECTION TO BE COMPLETED BY QUALIFIED TECHNICIAN

NOTES:

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THIS SECTION TO BE COMPLETED BY COGNIZANT ENGINEER

NOTES:

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TEST ACCEPTABLE □

TECHNICIAN SIGNATURE/LIFE NUMBER: ____________________________

WITNESS SIGNATURE/LIFE NUMBER: ____________________________

R. O'BRIEN 08/07/2015 REV A