



**U.S. Department of Energy  
Hanford Site**

September 30, 2020

20-ECD-0046

Ms. Alexandra K. Smith, Program Manager  
Nuclear Waste Program  
Washington State  
Department of Ecology  
3100 Port of Benton Blvd.  
Richland, Washington 99354

Dear Ms. Smith:

**SUBMITTAL OF HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY  
ACT PERMIT MODIFICATION NOTIFICATION FORM 24590-LAB-PCN-ENV-19-003**

The purpose of this Class 1 prime permit modification is to update a Radioactive Liquid Waste Process Flow Diagram (P&ID) for the Analytical Laboratory and 10 P&IDs in Appendices 11.1 and 11.2 of the Dangerous Waste Permit, respectively.

If you have any questions, please contact me, or your staff may contact Christopher J. Kemp, Director, Environmental Compliance Division, Office of River Protection, on (509) 373-0649, or Sheila Davis, Bechtel National, Inc., (509) 827-3185.

Sincerely,

A handwritten signature in black ink that reads "Glyn D. Trenchard".

Digitally signed by GLYN D. TRENCHARD  
DN: c=us, o=u.s. government, ou=department  
of energy, ou=Energy IT Services, ou=Hanford  
Site, ou=People, cn=GLYN D. TRENCHARD  
Date: 2020.09.30 12:35:23 -07'00'

Glyn D. Trenchard, Assistant Manager  
Technical and Regulatory Support  
Office of River Protection

ECD:MEB

Attachment

cc: See page 2

Ms. Alexandra K. Smith  
20-ECD-0046

-2-

September 30, 2020

cc w/attach:

J. Cantu, Ecology  
M. E. Jones, Ecology  
J. K. Perry, MSA  
Administrative Record (WTP H-0-8)  
BNI Correspondence  
Environmental Portal

cc w/o attach:

J. Bell, NPT  
L. Contreras, YN  
S. L. Dahl, Ecology  
D. McDonald, Ecology  
M. Murphy, CTUIR  
M. Woods, Oregon Energy

Attachment  
20-ECD-0046

Hanford Facility RCRA Permit Modification Notification  
Form 24590-LAB-PCN-ENV-19-003

(18 Pages Including Cover Sheet)

Quarter Ending: 09/30/2020  
RCRA Operating Record Number: R605

24590-LAB-PCN-ENV-19-003

---

**Hanford Facility RCRA Permit Modification Notification Form**  
**Part III, Operating Unit Group 10**  
**Waste Treatment and Immobilization Plant**

---

Index

Page 2 of 2: Hanford Facility RCRA Permit, Part III, Operating Unit 10, Waste Treatment and Immobilization Plant  
This modification is to update a Lab facility Process Flow Diagram and ten P&IDs in Appendix 11.1 and 11.2 of the DWP Permit

Submitted by Co-Operator:

*Robert Haggard*      9/8/2020  
*Robert D. Haggard*      *Date*

Reviewed by ORP Program Office:

**THOMAS**  
**FLETCHER**      Digitally signed by  
THOMAS FLETCHER  
Date: 2020.09.29  
08:31:57 -07'00'      9/29/2020  
*Thomas W. Fletcher*      *Date*

Quarter Ending: 09/30/2020

24590-LAB-PCN-ENV-19-003

RCRA Operating Record Number: R605

<b>Hanford Facility RCRA Permit Modification Notification Form</b>			
Unit: <b>Waste Treatment and Immobilization Plant</b>		Permit Part: <b>Part III, Operating Unit Group 10</b>	
<u>Description of Modification:</u>			
The purpose of this Class 1 prime modification is to update revisions of a Lab facility Process Flow Diagram and ten P&IDs in Appendix 11.1 and 11.2 of the DWP:			
Replace:	24590-LAB-M5-V17T-00029, Rev. 004	With:	24590-LAB-M5-V17T-00029, Rev. 005
Replace:	24590-LAB-M6-RLD-00001002, Rev. 000	With:	24590-LAB-M6-RLD-00001002, Rev. 001
Replace:	24590-LAB-M6-RLD-00001003, Rev. 000	With:	24590-LAB-M6-RLD-00001003, Rev. 001
Replace:	24590-LAB-M6-RLD-00001004, Rev. 000	With:	24590-LAB-M6-RLD-00001004, Rev. 001
Replace:	24590-LAB-M6-RLD-00002001, Rev. 001	With:	24590-LAB-M6-RLD-00002001, Rev. 002
Replace:	24590-LAB-M6-RLD-00002003, Rev. 002	With:	24590-LAB-M6-RLD-00002003, Rev. 003
Replace:	24590-LAB-M6-RLD-00006001, Rev. 000	With:	24590-LAB-M6-RLD-00006001, Rev. 001
Replace:	24590-LAB-M6-RLD-00006002, Rev. 000	With:	24590-LAB-M6-RLD-00006002, Rev. 001
Replace:	24590-LAB-M6-RLD-00006003, Rev. 000	With:	24590-LAB-M6-RLD-00006003, Rev. 001
Replace:	24590-LAB-M6-RLD-00007001, Rev. 000	With:	24590-LAB-M6-RLD-00007001, Rev. 001
Replace:	24590-LAB-M6-RLD-00007002, Rev. 000	With:	24590-LAB-M6-RLD-00007002, Rev. 001
This modification requests Ecology approval and incorporation into the permit the specific changes to the Process Flow Diagram and Piping and Instrument Diagrams (P&IDs).			
Changes to the Process Flow Diagram and Piping and Instrument Diagrams for the Lab Facility are summarized below:			
24590-LAB-M5-V17T-00029, Rev. 005, WTP Analytical Laboratory Process Flow Diagram Radioactive Liquid Disposal			
<ul style="list-style-type: none"> <li>• Note 4: For “Cold Commissioning” only. Prior to the start of radiological waste processing at the WTP, the Lab RLD System shall have the capability to transfer the non-radioactive, dangerous liquid waste from each of the Lab RLD vessels by tanker truck. Temporary filters will be used as needed.</li> <li>• Note 11 and 14: Deleted</li> <li>• Note 20: Revision 5: Revised to clarify process engineering design requirements and align with PFD desktop instruction 24590-WTP-3DI-V04W-00001. Also corrected destination of RLD-VSL-000164 ventilation to show C5 ventilation system destination.</li> <li>• References 7-9 added to describe above in Note 20</li> <li>• Atomic Energy Act statement added</li> </ul>			
24590-LAB-M6-RLD-00001002, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C5 Collection and Transfer RLD-PMP-00183A			
<ul style="list-style-type: none"> <li>• Note 10: Mesh Screen Cap</li> <li>• Note 13: Revision 1: Incorporated 24590-LAB-M6N-RLD-00075, -00081, -00093, -00095, -00098, 24590-WTP-M6N-50-00073, 24590-WTP-EIE-J-16-0001, Rev. 0, and 24590-WTP-EIE-PR-15-0001, Rev. 1. 24590-WTP-EIE-J-16-0001 was incorporated by 24590-WTP-M6N-50-00073. No changes were required for incorporation of 24590-WTP-EIE-PR-15-0001. Revised reference 1 and updated ADR revision number</li> <li>• Reference 1 added to support revision outlined in Note 13.</li> </ul>			

Quarter Ending: 09/30/2020

24590-LAB-PCN-ENV-19-003

RCRA Operating Record Number: R605

24590-LAB-M6-RLD-00001003, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C5 Collection and Transfer RLD-PMP-00183B

- Note 10: Mesh Screen Cap
- Note 13: Revision 1: Incorporated 24590-LAB-M6N-RLD-00075, -00081, -00093, -00098, 24590-WTP-M6N-50-00073, 24590-WTP-EIE-J-16-0001, Rev. 0, and 24590-WTP-EIE-PR-15-0001, Rev. 1. 24590-WTP-EIE-J-16-0001 was incorporated by 24590-WTP-M6N-50-00073. No changes were required for incorporation of 24590-WTP-EIE-PR-15-0001. Revised reference 1 and updated ADR revision number
- Reference 1 added to support revision outlined in Note 13.

24590-LAB-M6-RLD-00001004, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C5 Collection and Transfer Valve Pit

- Note 21: Mesh Screen Cap
- Note 23: Valve hand wheel is accessible above the valve pit cover plate. A portion of the valve extension shaft and shield plug components are safety significant, Quality Level Q, and Seismic Category III. Refer to specification 24590-LAB-3PS-MJW0-T0001.
- Note 24: Revision 1: Incorporated 24590-LAB-M6N-RLD-00075, -00081, -00092, -00093, -00098, 24590-LAB-M6N-60-00003, 24590-WTP-M6N-50-00073, and 24590-WTP-EIE-J-16-0001, Rev. 0. 24590-WTP-EIE-J-16-0001 was incorporated by 24590-WTP-M6N-50-00073. Revised reference 1, added off sheet connector flag from PWD-LAH-5109 to YC-6131 & YC-6113, updated ADR revision number and off sheet connectors flag.
- Reference 1 added to support revision outlined in Note 24.

24590-LAB-M6-RLD-00002001, Rev. 002, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Collection and Transfer RLD-VSL-00164

- Note 5: The maximum elevation difference between the inside bottom of the vessel and the inside bottom of the overflow line (at its highest point) shall be 6.84 ft. to yield the maximum operating volume (MOV) of 2740 gal. Moreover, piping beyond the high point shall be free draining with no pockets to the vessel cell.
- Note 14: Revision 2: Incorporated 24590-LAB-M6N-M80T-00008, 24590-LAB-M6N-RLD-00098, 24590-WTP-M6N-50-00073, and 24590-WTP-EIE-J-16-0001, Rev. 0. 24590-WTP-EIE-J-16-0001 incorporated by 24590-WTP-M6N-50-00073. Revised Reference 1, off sheet connectors and updated ADR revision number.
- Reference 1 added to support revision outlined in Note 14

24590-LAB-M6-RLD-00002003, Rev. 003, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Collection and Transfer RLD-PMP-00182A/B

- Note 19: Revision 3: Incorporated 24590-WTP-FC-P-18-0199, 24590-BOF-EIE-M-15-0123, Rev. 0, 24590-EIE-MS-17-0032, Rev. 1, and 24590-WTP-EIE-J-19-0003, Rev. 0. 24590-BOF-EIE-M-15-0123 incorporated in Rev. 1 of this P&ID. Incorporated 24590-WTP-EIE-SYSE-16-0082 with no impact. Revised off sheet connector coordinates and references
- References 1-3 updated to support revision outlined in Note 19

24590-LAB-M6-RLD-00006001, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Rad Lab Collection

- Note 13: Construction shall field route tubing from pipe-to-tube break to C3V duct work. See 24590-WTP-M0-50-00040001, and -00040003 for routing detail
- Note 14: RLD-HOOD-00059/ -00060/ -00061/ -00062 under sink drains are provided with secondary containment upstream of P-traps. A drain hole at the low point of the outer pipe is provided to direct potential leakage from the annular space of the double wall pipe to the drain pan under each P-trap.
- Note 15: Revision 1: Incorporated 24590-LAB-M6N-RLD-00079, -00097, 24590-WTP-FC-IN-11-0068, and 24590-WTP-FC-IN-12-0109. Incorporated 24590-WTP-FC-P-12-0465 (by reference) and further revised to add drains to support addition of ARL-HOOD-00061/00062. Revised material specification

Quarter Ending: 09/30/2020

24590-LAB-PCN-ENV-19-003

RCRA Operating Record Number: R605

from N11E to S11C for ARL-HOOD-00059/60/61/62 drains. Added Note 14, revised Reference 1 and updated ADR revision number

- Reference 1 added to support revision outlined in Note 15

24590-LAB-M6-RLD-00006002, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Rad Lab Collection

- Note 11: Deleted
- Note 14: Construction shall field route tubing from pipe-to-tube break to C3V duct work. See 24590-WTP-M0-50-00040002 for routing details
- Note 15: Revision 1: Incorporated 24590-LAB-M6N-RLD-00097. Deleted decon shower drain plugs and Note 11. Revised Reference 1 and updated ADR revision number
- Reference 1 added to support revision outlined in Note 11

24590-LAB-M6-RLD-00006003, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Rad Lab Collection

- Note 13: Construction shall field route tubing from pipe-to-tube break to C3V duct work. See 24590-WTP-M0-50-00040002 and -00040003 for routing details
- Note 14: Revision 1: Incorporated 24590-LAB-M6N-RLD-00097, 24590-WTP-FC-IN-12-0109 and 24590-WTP-FC-P-12-0465. Revised Reference 1 and updated ADR Revision number
- Reference 1 added to support revision outlined in Note 14

24590-LAB-M6-RLD-00007001, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Leak Detection Boxes

- Note 10: Revision 1: Incorporated 24590-LAB-M6N-RLD-00095. Revised Reference 1, added line numbers, and updated ADR Revision number.
- Reference 1 added to support revision outlined in Note 10

24590-LAB-M6-RLD-00007002, Rev. 001, P&ID – Lab Radioactive Liquid Waste Disposal System C3 Collection Drain Header

- Note 13: Construction shall field route tubing from pipe-to-tube break to C3V duct work. See 24590-WTP-M0-50-00040002 for routing details
- Note 14: Revision 1: Incorporated 24590-LAB-M6N-RLD-00097. Revised Reference 1, added line numbers, and updated ADR Revision number.
- Reference 1 added to support revision outlined in Note 14

WAC 173-303-830 Modification Class:	Class 1	Class 1 <sup>1</sup>	Class 2	Class 3
Please mark the Modification Class:		X		

Enter relevant WAC 173-303-830, Appendix I Modification citation number: N/A

Enter wording of WAC 173-303-830, Appendix I Modification citation:

In accordance with WAC-173-303-830(4)(d)(i), this modification notification is requested to be reviewed and approved as a Class 1 modification. WAC 173-303-830(4)(d)(i)(A) states, "Class 1 modifications apply to minor changes that keep the permit current with routine changes to the facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment. In the case of Class 1 modifications, the director may require prior approval."

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Quarter Ending: 09/30/2020

24590-LAB-PCN-ENV-19-003

RCRA Operating Record Number: R605

Modification Approved/Concur: <input type="checkbox"/> Yes <input type="checkbox"/> Denied ( <i>state reason below</i> ) <u>Reason for denial:</u>  	Reviewed by Ecology:  
	S. Shleif _____ Date _____







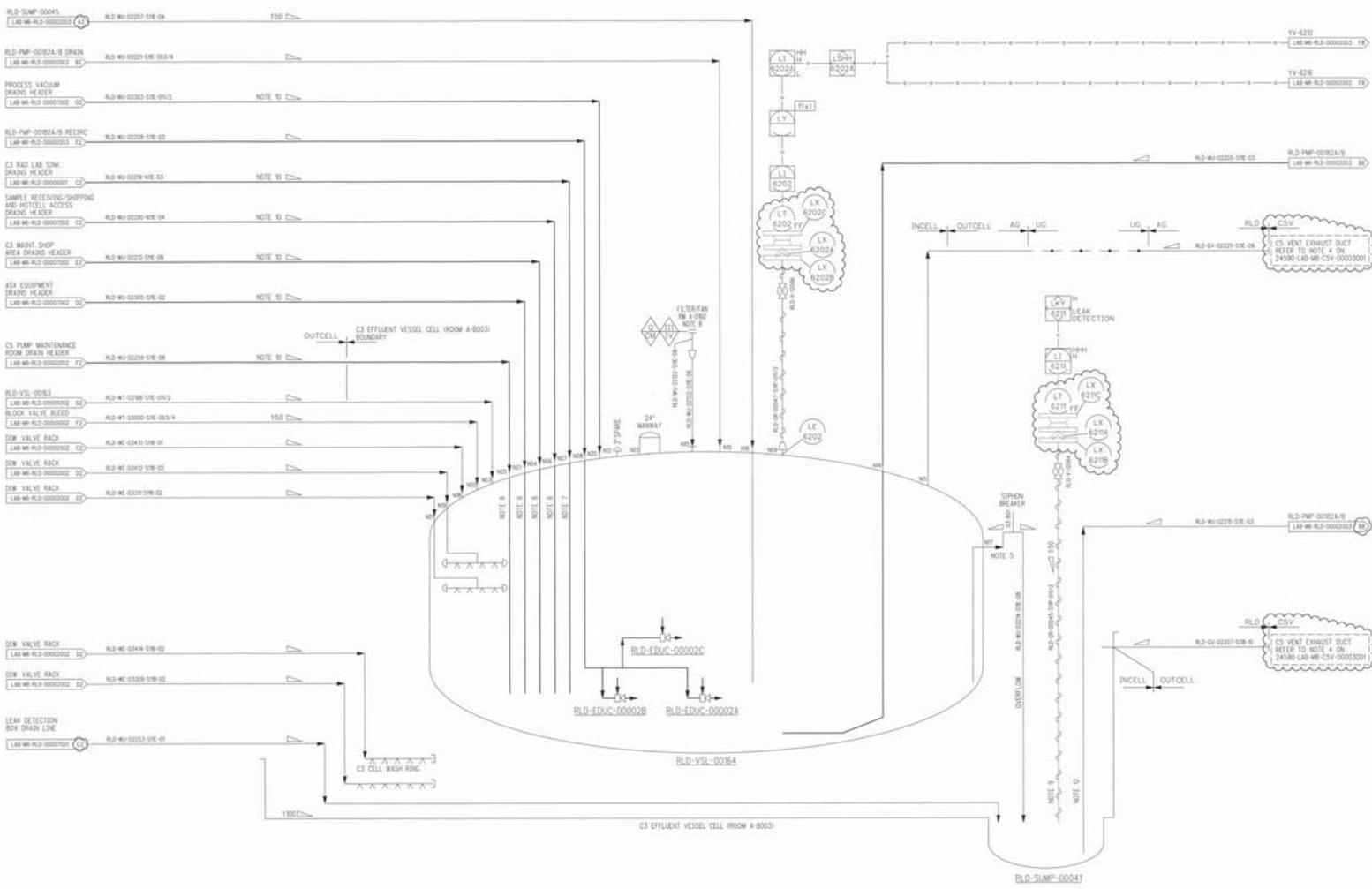


H  
G  
F  
E  
D  
C  
B  
A

RLD-EDUC-00004 C3 DRAIN COLLECTION VESSEL MOUND DUCTOR EST COMP W/SEL H/8 3/4 IN	RLD-EDUC-00005 C3 DRAIN COLLECTION VESSEL MOUND DUCTOR EST COMP W/SEL H/8 3/4 IN	RLD-EDUC-00006 C3 DRAIN COLLECTION VESSEL MOUND DUCTOR EST COMP W/SEL H/8 3/4 IN	RLD-VSL-00064 LAB AREA DRAIN DRAIN COLLECTION VESSEL (RLD-C3-VESSEL) 2 1/4 IN 8.5 FT DIA X 60 IN T/T	RLD-SUMP-00041 C3 VESSEL CELL SUMP SUMP CAP 30 IN DIA 30 IN DIA X 60 IN DIA
---	---	---	---	---

- NOTES:**
- SEE DRAWINGS 24590-WTP-M6-S0-00001 THROUGH 24590-WTP-M6-S0-00004 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
  - CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
  - THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
  - ALL LINES SHOWN ON THIS DRAWING SHALL BE SELF DRAINING, UNLESS OTHERWISE NOTED.
  - THE MAXIMUM ELEVATION DIFFERENCE BETWEEN THE INSIDE BOTTOM OF THE VESSEL AND THE INSIDE BOTTOM OF OVERFLOW LINE (AT ITS HIGHEST POINT) SHALL BE 6.84 FT TO YIELD THE MAXIMUM OPERATING VOLUME (MOV) OF 2740 GAL. MOREOVER, PIPING BEYOND THE HIGH POINT SHALL BE FREE DRAINING WITH NO POCKETS TO THE VESSEL CELL.
  - THE DIP TUBE ON NOZZLES N04, N05, N06, AND N21 EACH HAVE FOUR WEEP HOLES LOCATED ABOVE THE OVERFLOW LEVEL. THE DIAMETER OF THE FOUR HOLES ARE 0.5 INCH (N21), 1 INCH (N04), AND 2 INCHES (N05 AND N06). THE WEEP HOLES PROVIDE IN-LEAKAGE FOR THE CSV VENT SYSTEM. SEE DRAWING 24590-LAB-MV-RLD-00001.
  - THE DIP TUBE FOR N07 HAS TWO ROWS OF 0.5 INCH DIAMETER HOLES OVER THE ENTIRE LENGTH OF PIPE. SEE DRAWING 24590-CM-POA-MVAD-00010-01-00008.
  - PROVISION FOR FUTURE USE, FLOOR SHIELD PLUG TO BE PROVIDED BY CS&A. SEE DETAIL 24590-LAB-MX-RLD-00005.
  - SUMP RADAR WAVE GUIDE LINE DESIGNED PER 24590-WTP-JB-S0-00004.
  - SLOPE C3 COLLECTION HEADERS 1/8 INCH PER FOOT AS PRACTICAL WITH A MINIMUM OF 1/8 INCH PER FOOT (1:192 SLOPE).
  - THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPPLEMENTS 24590-LAB-M6-RLD-00002 REV 2. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAB-M6-MN-RLD-00001, 24590-LAB-M6-MN-RLD-00002, 24590-LAB-M6-MN-RLD-00003, 24590-LAB-M6-MN-RLD-00004, 24590-LAB-M6-MN-RLD-00005, 24590-LAB-M6-MN-RLD-00006, AND 24590-LAB-M6-MN-RLD-00007.
  - EXTEND END OF PIPE TO 1/2 INCH ABOVE THE BOTTOM CENTER OF THE SUMP.
  - REVISION 1 INCORPORATED 24590-LAB-M6-RLD-00075 AND ADDED NOTE 1.
  - REVISION 2 INCORPORATED 24590-LAB-M6-MN-RLD-00008, 24590-LAB-M6-RLD-00009, 24590-WTP-M6-S0-00073, AND 24590-WTP-EIE-J-B-0001. REV 0 WAS INCORPORATED BY 24590-WTP-M6-S0-00073. REVISED REFERENCE L OFF SHEET CONNECTORS, AND UPDATED ASB REVISION NUMBER.

- HOLD/OPEN ITEMS:**
- NONE
- REFERENCES:**
- 24590-LAB-320-RLD-00001 LAB RADIOACTIVE LIQUID WASTE DISPOSAL (RLD) SYSTEM DESIGN DESCRIPTION



DRG NO	TITLE
24590-LAB-M6-RLD-00002001	RLD DISPOSAL SYSTEM RLD-VSL-00064
24590-LAB-M6-RLD-00002002	RLD DISPOSAL SYSTEM C3 COLLECTION & TRANSFER
24590-LAB-M6-RLD-00002003	RLD DISPOSAL SYSTEM RLD-PMP-00024/S

REV	DESCRIPTION	ORG	CHKD	REV'D	DATE
1	ISSUED FOR CONSTRUCTION. SEE NOTE 8	MS	JR	MS	06/01/19
2	REVISED PER NOTE 8	MS	JR	MS	7/1/19
3	REVISED PER NOTE 10	MS	JR	MS	06/01/19

PROJECT NO	14500
DATE	10/27/18
DESIGNER	SHANE W. HENNING
CHECKER	THOMAS L. VEDENHAK
APPROVER	STEVEN A. SCHNEIDER
REVISOR	ANDREW J. GIBLIN

**REVISION HISTORY**

NO	DESCRIPTION	DATE
1	ISSUED FOR CONSTRUCTION. SEE NOTE 8	06/01/19
2	REVISED PER NOTE 8	7/1/19
3	REVISED PER NOTE 10	06/01/19

**CONTRACT NO** SE-AC27-09V1436

**RIVER PROTECTION PROJECT WASTE TREATMENT PLANT**  
2435 STEVENS CENTER PLACE  
RICHLAND, WA 99354

**P&ID - LAB RADIOACTIVE LIQUID WASTE DISPOSAL SYSTEM C3 COLLECTION AND TRANSFER RLD-VSL-00164**

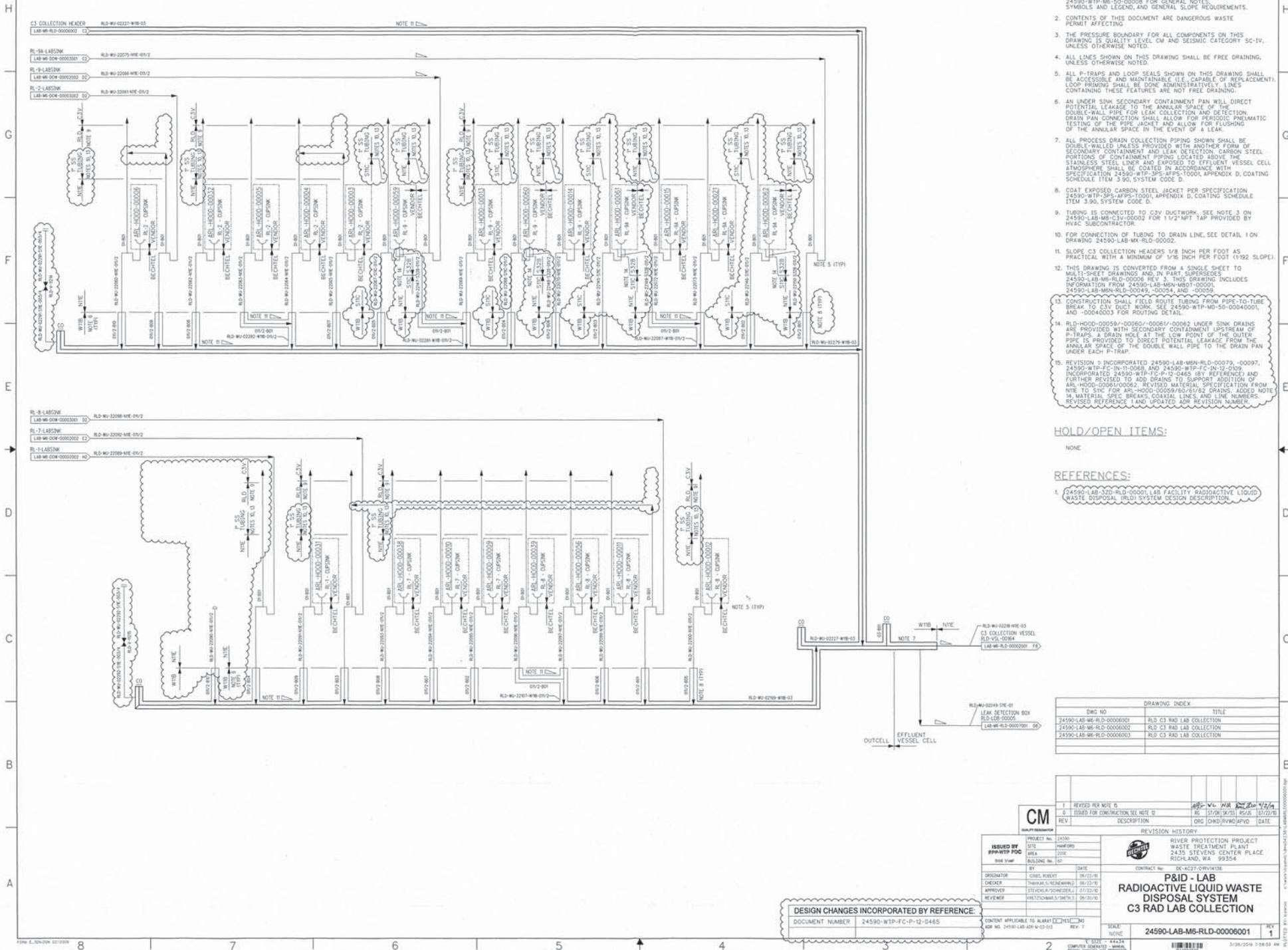
**24590-LAB-M6-RLD-00002001**

SCALE: NONE

DATE: 06/01/19

REV: 2





NOTES:

- SEE DRAWINGS 24590-WTP-M6-SO-00001 THROUGH 24590-WTP-M6-SO-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
- CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
- THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
- ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING, UNLESS OTHERWISE NOTED.
- ALL P-TRAPS AND LOOP SEALS SHOWN ON THIS DRAWING SHALL BE ACCESSIBLE AND MAINTAINABLE (I.E. CAPABLE OF REMOVAL). LOOP PRIMING SHALL BE DONE ADMINISTRATIVELY. LINES CONTAINING THESE FEATURES ARE NOT FREE DRAINING.
- AN UNDER SINK SECONDARY CONTAINMENT PAN WILL DIRECT POTENTIAL LEAKAGE TO THE ANNULAR SPACE OF THE DOUBLE-WALL PIPE FOR LEAK COLLECTION AND DETECTION. DRAIN PAN CONNECTION SHALL ALLOW FOR PERIODIC PNEUMATIC TESTING OF THE PIPE JACKET AND ALLOW FOR FLUSHING OF THE ANNULAR SPACE IN THE EVENT OF A LEAK.
- ALL PROCESS DRAIN COLLECTION PIPING SHOWN SHALL BE DOUBLE-WALLED UNLESS PROVIDED WITH ANOTHER FORM OF SECONDARY CONTAINMENT AND LEAK DETECTION. CARBON STEEL PORTIONS OF CONTAINMENT PIPING LOCATED ABOVE THE STAINLESS STEEL LINER AND EXPOSED TO TERTIARY VESSEL CELL ATMOSPHERE SHALL BE COATED IN ACCORDANCE WITH SPECIFICATION 24590-WTP-SPS-APP-1000, APPENDIX D, COATING SCHEDULE ITEM 3.90, SYSTEM CODE D.
- COAT EXPOSED CARBON STEEL JACKET PER SPECIFICATION 24590-WTP-SPS-APP-1000, APPENDIX D, COATING SCHEDULE ITEM 3.90, SYSTEM CODE D.
- TUBING IS CONNECTED TO C3V DUCTWORK. SEE NOTE 3 ON 24590-LAB-M6-C3V-00002 FOR 1/2\"/>
- FOR CONNECTION OF TUBING TO DRAIN LINE, SEE DETAIL 1 ON DRAWING 24590-LAB-M6-RLD-00002.
- SLOPE C3 COLLECTION HEADERS 1/8 INCH PER FOOT AS PRACTICAL WITH A MINIMUM OF 1/8 INCH PER FOOT (1/32 SLOPE).
- THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND, IN PART, SUPERSEDES 24590-LAB-M6-RLD-00000 REV. 3. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAB-M6-MH-MS01-00001, 24590-LAB-M6-MH-RLD-00049, -00054, AND -00059.
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE BREAK TO C3V DUCT WORK, SEE 24590-WTP-M6-SO-00040001 AND -00040003 FOR ROUTING DETAIL.
- RLD-HOOD-00059/-00060/-00061/-00062 UNDER SINK DRAINS ARE PROVIDED WITH SECONDARY CONTAINMENT UPSTREAM OF P-TRAPS. A DRAIN HOLE AT THE LOW POINT OF THE OUTER PIPE IS PROVIDED TO DIRECT POTENTIAL LEAKAGE FROM THE ANNULAR SPACE OF THE DOUBLE WALL PIPE TO THE DRAIN PAN UNDER EACH P-TRAP.
- REVISION 1 INCORPORATED 24590-LAB-M6-RLD-00079, -00097, 24590-WTP-FC-IN-11-0068, AND 24590-WTP-FC-IN-12-0009 INCORPORATED 24590-WTP-FC-P-13-0468 (BY REFERENCES) AND FURTHER REVISED TO ADD DRAINS TO SUPPORT ADDITION OF RLD-HOOD-00059/-00060/-00061/-00062. REVISED MATERIAL SPECIFICATION FROM NOTE 10 TO S1C FOR RLD-HOOD-00059/60/61/62 DRAINS. ADDED NOTE 10 MATERIAL SPEC BREAK AND COLLAR LINES AND THE NUMBERS. REVISED REFERENCE 1 AND UPDATED ADR REVISION NUMBER.

HOLD/OPEN ITEMS:

NONE

REFERENCES:

- 24590-LAB-M6-RLD-00000 LAB FACILITY RADIOACTIVE LIQUID WASTE DISPOSAL (RLD) SYSTEM DESIGN DESCRIPTION.

DWG NO	TITLE
24590-LAB-M6-RLD-00000001	RLD C3 RAD LAB COLLECTION
24590-LAB-M6-RLD-00000002	RLD C3 RAD LAB COLLECTION
24590-LAB-M6-RLD-00000003	RLD C3 RAD LAB COLLECTION

REV	DESCRIPTION	ORIG	CHKD	APPV	DATE
1	REVISED PER NOTE 6	MS	VC	MR	08/20/14
0	ISSUED FOR CONSTRUCTION SEE NOTE 6	MS	STJ	MS	03/22/10

**CM**

ISSUED BY: JPP-WTP-PDC  
 DATE: 08/22/14  
 CHECKED BY: STEVEN J. SCHNEIDER  
 APPROVED BY: STEVEN J. SCHNEIDER  
 REVIEWED BY: KYLE T. SCHNEIDER

PROJECT No: 24590  
 SITE: HAMMERS  
 PHA: 2006  
 REVISED: 08  
 DATE: 08/22/14  
 CONTRACT No: DC-427-ORV14136

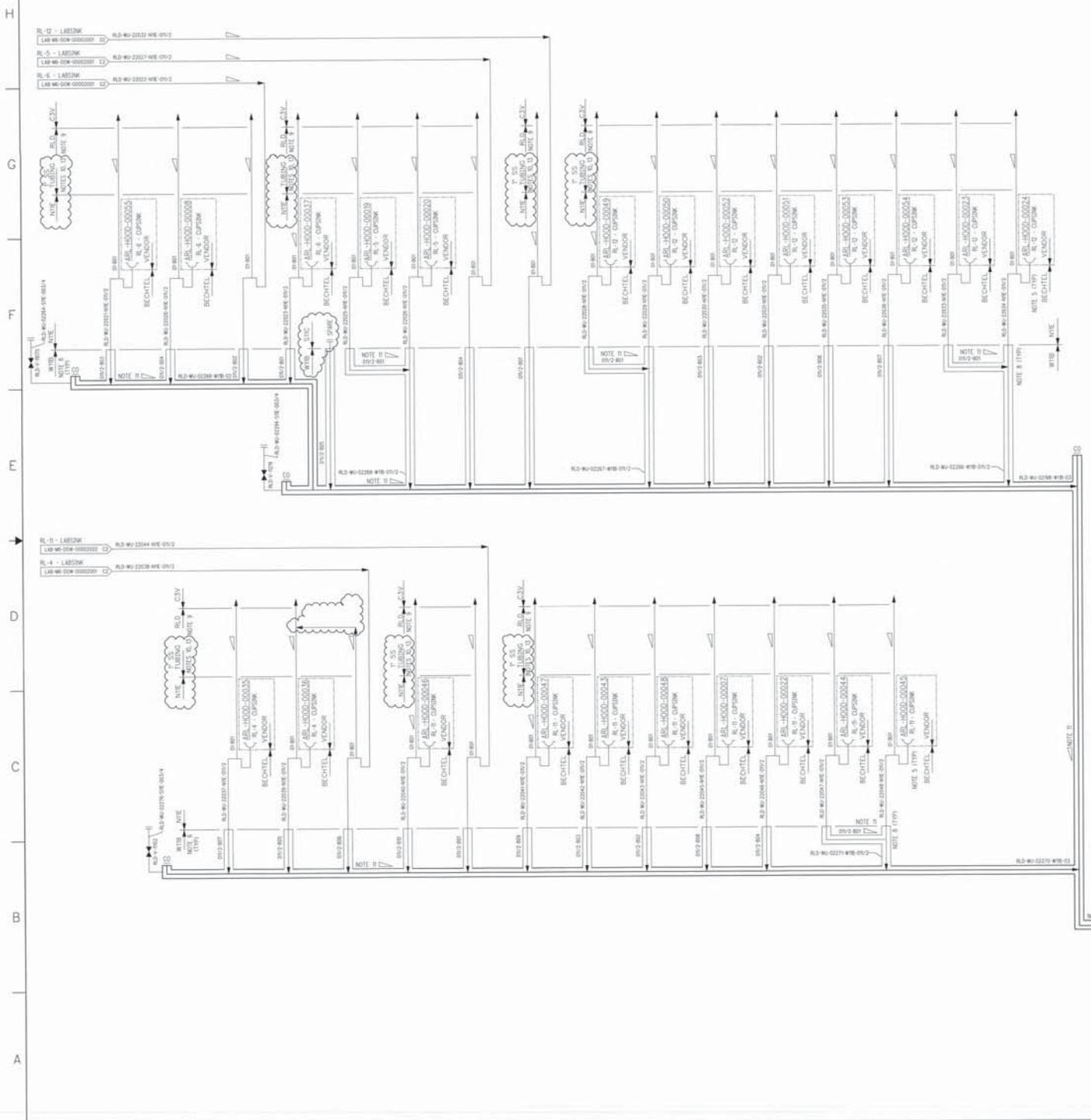
RIVER PROTECTION PROJECT  
 WASTE TREATMENT PLANT  
 2435 STEVENS CENTER PLACE  
 RICHLAND, WA 99354

**P&ID - LAB  
 RADIOACTIVE LIQUID WASTE  
 DISPOSAL SYSTEM  
 C3 RAD LAB COLLECTION**

DESIGN CHANGES INCORPORATED BY REFERENCE:  
 DOCUMENT NUMBER 24590-WTP-FC-P-12-0465  
 CONTENT APPLICABLE TO ALMST EC-1011 NO  
 ADR NO. 24590-LAB-M6-W-03-003 REV. 7

SCALE	DATE	REV
NONE	4-4-14	1





**NOTES:**

1. SEE DRAWINGS 24590-WP-M6-50-00001 THROUGH 24590-WP-M6-50-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
4. ALL LINES SHOWN ON THIS DRAWING SHALL BE FREE DRAINING UNLESS OTHERWISE NOTED.
5. ALL P-TRAPS AND LOOP SEALS SHOWN ON THIS DRAWING SHALL BE ACCESSIBLE AND MAINTAINABLE (I.E. CAPABLE OF REPLACEMENT). LOOP PRIMING SHALL BE DONE ADMINISTRATIVELY - LINES CONTAINING THESE FEATURES ARE NOT FREE DRAINING.
6. AN UNDER SINK SECONDARY CONTAINMENT PAN WILL DIRECT POTENTIAL LEAKAGE TO THE ANNULAR SPACE OF THE DOUBLE-WALL PIPE FOR LEAK COLLECTION AND DETECTION. DRAIN PAN CONNECTION SHALL ALLOW FOR PERIODIC PNEUMATIC TESTING OF THE PIPE JOINTS AND ALLOW FOR FLUSHING OF THE ANNULAR SPACE IN THE EVENT OF A LEAK.
7. ALL PROCESS DRAIN COLLECTION PIPING SHOWN SHALL BE DOUBLE-WALLED UNLESS PROVIDED WITH ANOTHER FORM OF SECONDARY CONTAINMENT AND LEAK DETECTION. CARBON STEEL PORTIONS OF CONTAINMENT PIPING LOCATED ABOVE THE STAINLESS STEEL LINER AND EXPOSED TO EFFLUENT VESSEL CELL ATMOSPHERE SHALL BE COATED IN ACCORDANCE WITH SPECIFICATION 24590-WP-SP5-APP5-10001 APPENDIX D, COATING SCHEDULE ITEM 3.90, SYSTEM CODE 0.
8. COAT EXPOSED CARBON STEEL JACKET PER SPECIFICATION 24590-WP-SP5-APP5-10001 APPENDIX D, COATING SCHEDULE ITEM 3.90, SYSTEM CODE 0.
9. TUBING IS CONNECTED TO CSV DUCTWORK. SEE NOTE 3 ON 24590-LAB-M6-CSV-00002 FOR 1/2" NPT TAP PROVIDED BY HVAC SUBCONTRACTOR.
10. FOR CONNECTION OF TUBING TO DRAIN LINE, SEE DETAIL 1 ON DRAWING 24590-LAB-M6-RLD-00002.
11. SLOPE CS COLLECTION HEADERS 1/8" INCH PER FOOT AS PRACTICAL WITH A MINIMUM OF 1/16" INCH PER FOOT (11/32" SLOPE).
12. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND IN PART, SUPERSEDES 24590-LAB-M6-RLD-00006 REV. 2. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAB-M6-M601-M601-00001, 24590-LAB-M6-M601-RLD-00001, 00004, AND 00006.
13. THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND IN PART, SUPERSEDES 24590-LAB-M6-RLD-00006 REV. 2. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAB-M6-M601-M601-00001, 24590-LAB-M6-M601-RLD-00001, 00004, AND 00006.
14. REVISION 6 INCORPORATED 34590-LAB-M6-RLD-00007, 24590-WP-FC-IN-12-0009, AND 24590-WP-FC-P-12-0465. REVISED REFERENCE 1 AND UPDATED ADR REVISION NUMBER.

**HOLD/OPEN ITEMS:**

NONE

**REFERENCES:**

1. 24590-LAB-M6-RLD-00001 LAB RADIOACTIVE LIQUID WASTE DISPOSAL (RLD) SYSTEM DESIGN DESCRIPTION

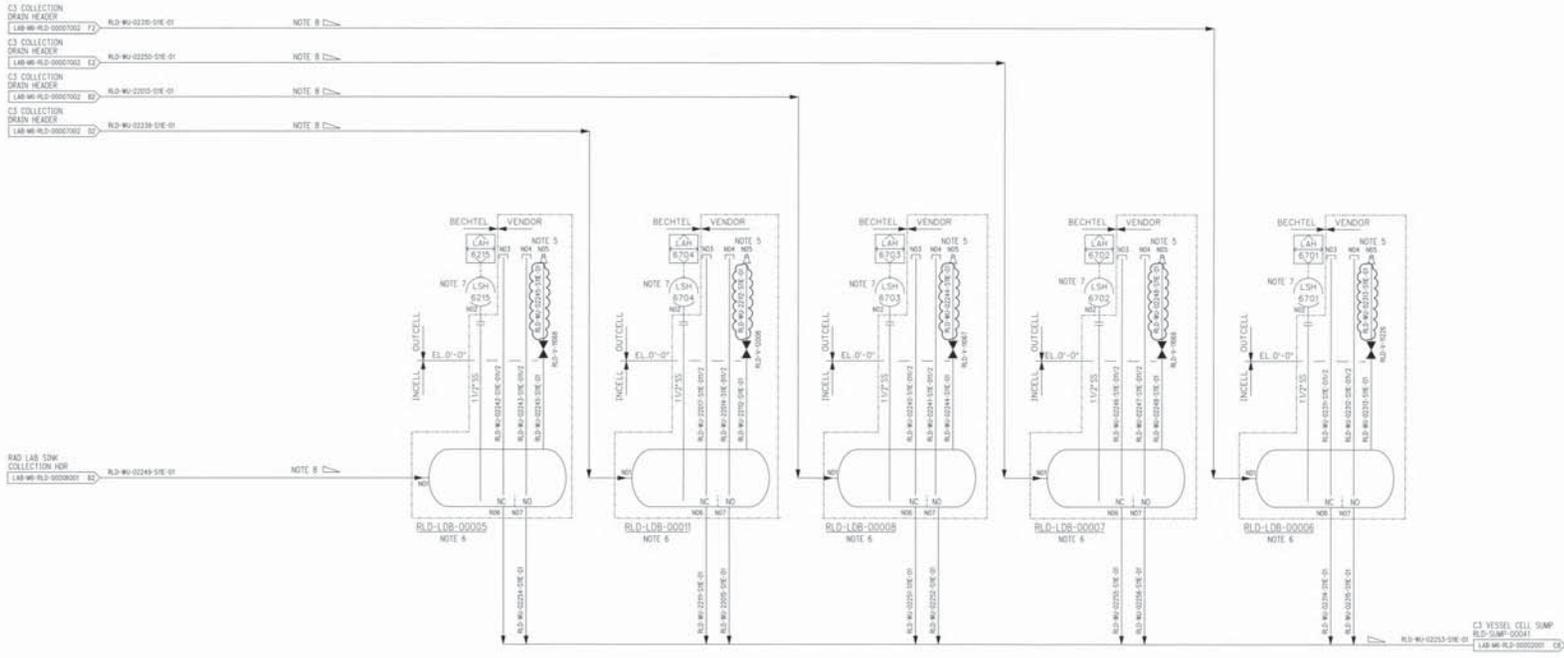
<p><b>CM</b> CUMMINS ENGINEERING</p>		<p>PROJECT NO. 24590 SITE: MAF090 AREA: 0300 BUILDING NO. 60</p>		<p>REVISION HISTORY</p> <p>RIVER PROTECTION PROJECT WASTE TREATMENT PLANT 2435 STEVENS CENTER PLACE RICHLAND, WA - 99354</p>	
<p>1 REVISED PER NOTE 14</p> <p>2 ISSUED FOR CONSTRUCTION, SEE NOTE 0</p>		<p>DATE: 10/10/16</p> <p>DATE: 01/22/16</p>		<p>CONTRACT NO.: DE-AC27-09WV4156</p>	
<p>DESIGNER: TERRY L. HENNING</p> <p>CHECKER: TERRY L. HENNING</p> <p>APPROVER: TERRY L. HENNING</p> <p>REVISOR: TERRY L. HENNING</p>		<p>DATE: 01/08/16</p> <p>DATE: 01/22/16</p> <p>DATE: 01/22/16</p> <p>DATE: 01/22/16</p>		<p><b>P&amp;ID - LAB RADIOACTIVE LIQUID WASTE DISPOSAL SYSTEM C3 RAD LAB COLLECTION</b></p>	
<p>OWNER: RIVER PROTECTION PROJECT</p> <p>ADDRESS: 2435 STEVENS CENTER PLACE, RICHLAND, WA 99354</p>		<p>SCALE: AS SHOWN</p> <p>DATE: 01/22/16</p>		<p>24590-LAB-M6-RLD-00006003</p>	

RLD-LDB-0000 R/L LAB 30W COLLECTION LINE LDB					
--	--	--	--	--	--

- NOTES:**
- SEE DRAWINGS 24590-WTP-M6-S0-00001 THROUGH 24590-WTP-M6-S0-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
  - CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
  - THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
  - ALL LINES SHOWN ON THIS DRAWING SHALL BE SELF DRAINING, UNLESS OTHERWISE NOTED.
  - QUICK CONNECTION IS PROVIDED FOR PNEUMATIC TESTING OF THE LEAK DETECTION BOX AND THE PIPE JACKET.
  - OVERFLOW INDA AND NOTIF AND DRAIN PLUGS (IND3 AND NOB3) OPERATED REMOTELY VIA ROGS THAT EXTEND UP TO GRADE ELEVATION 10'-0" DRAIN PLUGS INSTALLED IN THE CLOSED POSITION TO CREATE A DETECTABLE LEVEL. UPON LEVEL DETECTION THE PLUG IS LIFTED TO DRAIN THE LEAK DETECTION BOX. THE OVERFLOW PLUG IS NORMALLY OPEN FOR OVERFLOW PROTECTION. BOTH PLUGS WILL BE CLOSED FOR PNEUMATIC TESTING. SEE 24590-LAB-M6-RLD-00001 FOR DETAILS.
  - LEVEL SENSOR TO BE MOUNTED DIRECTLY TO THE VENDOR FLANGE.
  - SLOPE C3 COLLECTION HEADERS AND ENCASMENT PIPE DRAIN LINES 1/8 INCH PER FOOT AS PRACTICAL WITH A MINIMUM OF 1/8 INCH PER FOOT (1/8% SLOPE).
  - THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND IN PART SUPERSEDES 24590-LAB-M6-RLD-00007 REV 2. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAB-M6-RLD-00001 AND 24590-LAB-M6-RLD-00000.
  - REVISION 3 INCORPORATED 24590-LAB-M6-RLD-00009. REVISED REFERENCE L ADDED LINE NUMBERS, AND UPDATED ADR REVISION NUMBER.

**HOLDS/OPEN ITEMS:**  
NONE

**REFERENCES:**  
24590-LAB-300-RLD-00001 LAB RADIOACTIVE LIQUID WASTE SURFICIAL ISOL SYSTEM DESIGN DESCRIPTION



DWG NO	DRAWING INDEX	TITLE
24590-LAB-M6-RLD-00007001	RLD C3 LEAK DETECTION BOXES	
24590-LAB-M6-RLD-00007002	RLD C3 COLLECTION DRAIN HEADER	

REV	DESCRIPTION	ORG	CHKD	INVD	APVD	DATE
1	REVISED PER NOTE 8					7/1/2019
0	ISSUED FOR CONSTRUCTION SEE NOTE 8					6/11/2019

**CM**  
QUALITY ASSURANCE

**REVISION HISTORY**

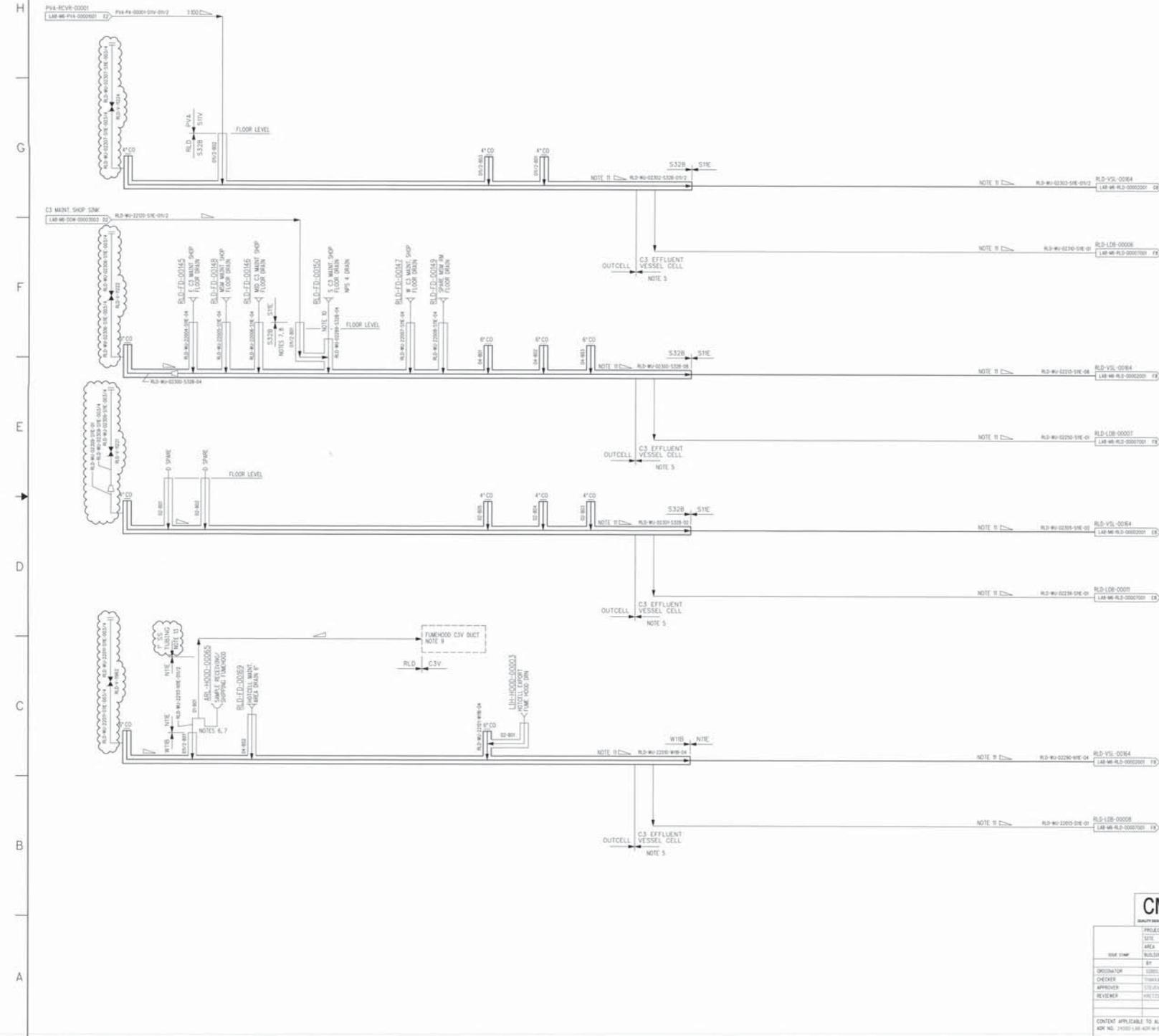
PROJECT NO.	24590
DATE	MM/DD/YY
AREA	2435 STEVENS CENTER PLACE RICHLAND, WA 99354
BUILDING NO.	001

**CONTRACT NO.** 24590-0000010010

**P&ID - LAB RADIOACTIVE LIQUID WASTE DISPOSAL SYSTEM C3 LEAK DETECTION BOXES**

**24590-LAB-M6-RLD-00007001**

SCALE: AS SHOWN  
DATE: 7/1/2019 3:59:03 PM  
REV 1



- NOTES:**
- SEE DRAWINGS 24590-WTP-M6-S0-00001 THROUGH 24590-WTP-M6-S0-00008 FOR GENERAL NOTES, SYMBOLS AND LEGEND, AND GENERAL SLOPE REQUIREMENTS.
  - CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
  - THE PRESSURE BOUNDARY FOR ALL COMPONENTS ON THIS DRAWING IS QUALITY LEVEL CM AND SEISMIC CATEGORY SC-IV, UNLESS OTHERWISE NOTED.
  - ALL LINES SHOWN ON THIS DRAWING SHALL BE SELF DRAINING, UNLESS OTHERWISE NOTED.
  - DRAIN COLLECTION PIPING SHOWN SHALL BE DOUBLE-WALL UNLESS PROVIDED WITH ANOTHER FORM OF SECONDARY CONTAINMENT AND LEAK DETECTION. CARBON STEEL PORTIONS OF CONTAINMENT PIPING LOCATED ABOVE THE STAINLESS STEEL SINK AND EXPOSED TO EFFLUENT VESSEL CELL OR BUILDING ATMOSPHERE SHALL BE COATED IN ACCORDANCE WITH SPECIFICATION 24590-WTP-SPE-AFIS-1000, APPENDIX D, COATING SCHEDULE ITEM 3.90, SYSTEM CODE D.
  - P-TRAPS SHALL BE ACCESSIBLE AND MAINTAINABLE (I.E., CAPABLE OF REPLACEMENT). LOOP PIPING SHALL BE DONE ADMINISTRATIVELY. LINES WITH THESE FEATURES ARE NOT SELF DRAINING.
  - AN UNDER SINK DRAIN PAN WILL DIRECT POTENTIAL LEAKAGE TO ANNUAL REGION OF DOUBLE WALL PIPE FOR LEAKAGE COLLECTION AND MONITORING. DRAIN PAN CONNECTION SHALL PERMIT PERIODIC PNEUMATIC TESTING OF THE CONTAINMENT PIPING AND THE FLUSHING OF THE ANNUAL REGION IN THE EVENT OF A LEAK.
  - PROVIDE A RECESSED PLUG-PLATE AT DOUBLE-/SINGLE-WALL TRANSITION FOR PERIODIC PNEUMATIC TESTING OF THE PIPE JACKET AND ALLOW FOR FLUSHING OF THE ANNUAL SPACE IN THE EVENT OF A LEAK.
  - TUBING CONNECTS TO C3V DUCTWORK. SEE NOTE 3 ON 24590-LAB-M6-C3V-00002 FOR 1 1/2" NPT TAP PROVIDED BY HVAC SUB-CONTRACTOR.
  - THE PIPELINE SHOWN IS AN EXTENSION OF THE CORE PIPE TO THE FLOOR DRAIN.
  - SLOPE C3 COLLECTION HEADERS 1/8 INCH PER FOOT AS PRACTICAL WITH A MINIMUM OF 1/8 INCH PER FOOT (1/82).
  - THIS DRAWING IS CONVERTED FROM A SINGLE SHEET TO MULTI-SHEET DRAWINGS AND IN PART SUPERSEDES 24590-LAB-M6-RLD-00007 REV. 2. THIS DRAWING INCLUDES INFORMATION FROM 24590-LAB-M6-M601-00001, 24590-LAB-M6-M6-RLD-00030, -00050, -00063, AND 24590-WTP-FI-01-00-0007.
  - CONSTRUCTION SHALL FIELD ROUTE TUBING FROM PIPE-TO-TUBE BEYOND TO C3V DUCT WORK. SEE 24590-WTP-M6-S0-00040002 FOR ROUTING DETAIL.
  - REVISION 1 INCORPORATED 24590-LAB-M6-RLD-00097, REVISED NUMBER

**HOLDS/OPEN ITEMS:**  
NONE

**REFERENCES:**  
1. 24590-LAB-370-RLD-00001, LAB RADIOACTIVE LIQUID WASTE DISPOSAL, RLD SYSTEM DESIGN DESCRIPTION

<p><b>CM</b> CONSTRUCTION MANAGEMENT</p>		<p>1. REVISED PER NOTE 14</p>		<p>24590-LAB-M6-RLD-00007002</p>
<p>2. ISSUED FOR CONSTRUCTION, SEE NOTE 6</p>		<p>REV 15/08/15/09/15/06</p>		<p>15/02/09 2:49:43 PM</p>
REV	DESCRIPTION	ORG	CHKD	DATE
<p><b>REVISION HISTORY</b></p>				
PROJECT NO.	24590	RIVER PROTECTION PROJECT		
DATE	15/08/09	WASTE TREATMENT PLANT		
AREA	3306	2435 STEVENS CENTER PLACE		
BUILDING NO.	01	RICHLAND, WA - 99354		
CONTRACT NO.	01-AC27-0001430	<p><b>P&amp;ID - LAB RADIOACTIVE LIQUID WASTE DISPOSAL SYSTEM C3 COLLECTION DRAIN HEADER</b></p>		
ORIGINATOR	SCHEIDT, ROBERT	DATE	05/16/06	
CHECKER	THORNTON, RICHARD	DATE	06/27/06	
APPROVER	COOPER, ANDREW	DATE	07/27/06	
REVISOR	WELLS, JAMES	DATE	08/08/06	
<p>CONTENT APPLICABLE TO BLANKET CONTRACT NO. 01-AC27-0001430</p>				
SCALE	NONE	24590-LAB-M6-RLD-00007002		
DATE	15/02/09	REV 1		
COMPUTER GENERATED - MANUAL	<p>15/02/09 2:49:43 PM</p>			



This document has been digitally signed using the Electrosign process.

## Document for Signature

**Document Number:** 24590-LAB-PCN-ENV-19-003 **Rev:** NA

Participants	Signature	Completed	Status	Result	Comments
<b>Signers</b>	<b>9/8/2020 5:51 PM</b>				
Haggard, Robert		9/8/2020 6:54 PM	Completed	Approve	
<b>Final Approver</b>	<b>9/8/2020 6:54 PM</b>				
Haggard, Robert		9/14/2020 12:14 PM	Completed	Approve	