Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

CERTIFIED MAIL

January 13, 2017

Mr. Scott D. Kiffer
[redacted]

Dear Mr. Kiffer:

FREEDOM OF INFORMATION ACT REQUEST (FOI 2017-00293)

This letter is in reference to the electronic Freedom of Information Act (FOIA) request you submitted to the U.S. Department of Energy (DOE), Headquarters (HQ) FOIA Office on December 7, 2016. Your request was forwarded to this office for a response and was received on December 15, 2016. In your request you asked for a copy of "Waste Treatment Plant Project Document Control Record Description: CCN # 288965, from Kevin Quine to Bob Hanson/Dennis Huth, Dated 04/14/16."

Your request was assigned to the U.S. Department of Energy (DOE) Office of River Protection (ORP) and Bechtel National, Inc. (BNI) to conduct a search. The document is enclosed.

For the purposes of assessment of any fees, we have determined that your request falls within Section 1004.9(b)(4), ("all other requestors") of our FOIA regulations.
See 10 C.F.R.1004.9(b)(4). You are thus entitled to two (2) free hours of search time and 100 pages of duplication at no cost. In your request you also asked for a fee waiver to process your request. As costs associated with your request were minimal, a determination on your request for a fee waiver was not made.

You may contact DOE RL's FOIA Public Liaison, Richard Buel, at (509) 376-3375, or by mail at P.O. Box 550, Richland, Washington, 99352 for any further assistance and to discuss any aspect of your request. Additionally, you may contact the Office of Government Information Services (OGIS) at the National Archives and Records Administration to inquire about the FOIA mediation services they offer. The contact information for OGIS is as follows: Office of Government Information Services, National Archives and Records Administration, 8601 Adelphi Road-OGIS, College Park, Maryland 20740-6001, e-mail at ogis@nara.gov; telephone at 202-741-5770; toll free at 1-877-684-6448; or facsimile at 202-741-5769.

This letter completes our response to your request. Please contact me on (509) 376-6288 or at the address listed on the previous page if you have any questions.

Sincerely,

-Original Signed By-

Dorothy Riehle
Freedom of Information Act Officer
Office of Communications
and External Affairs

OCE:DCR

Enclosure

288965

Memorandum

To:	Hanson, Bob Huth, Dennis	Date:	April 14, 2016
From:	Quine, Kevin	CCN:	288965
Phone:	703-429-6513		
Subject:	**PROPERTY FIELDS FOR EFFLUENT MANAGEMENT FACILITY (EMF) INSTRUMENT PROCESS DATA SPI DATASHEETS**		

Reference 1) M&PE Desk Instruction No. 13, Rev 4, *M&PE INtools Data Entry for Instrument Process Data*

Reference 2) 24590-WTP-3DG-ENG-00001, Rev. 0, *SPI Data Entry for Process Data*

Reference 3) 24590-BOF-RPT-PR-15-001, Rev. 0, *Direct Feed LAW Process Corrosion Data*

Reference 4) 24590-LAW-JPD-RLD-21690, Rev. 2, *RLD-PT-2169 – Pressure Xmtr-Fieldbus*

The guidelines in the governing desk instructions (Ref. 1) for *M&PE INtools Data Entry for Instrument Process Data* do not provide clear discrete instructions for determining the proper input for the following fields for process instruments; corrosive, toxic, erosive, build-up tendency, foaming, solidifying, and turbulence. This memorandum documents what property fields were determined to apply for the SPI process datasheets for EMF process system (AFR/DEP/DVP/SHR/SNR) instruments. Application of the property fields were discussed in a cross-discipline meeting on April 13, 2016. For meeting purposes, the main flow streams were grouped together and discussed. The results are summarized in Table 1.

Table 1: EMF Process Property Field Results

Primary Equipment	Stream Number	Toxic	Corrosive	Erosive	Build-Up Tendency	Foaming	Solidifying	Turbulence / Vibration
Low-Point Drain (DEP-VSL-00001)	DEP03, LCP07h	✓	✓	✓	✓	-	-	-
Evaporator Feed Vessel (DEP-VSL-00002)	DEP02, DEP02a, DEP02b, DEP03a, DEP13d, DEP13e	✓	✓	-	✓	-	-	-
Evaporator Concentrate Vessels (DEP-VSL-00003A/B/C)	DEP03b, DEP13, DEP13c, DEP13f, DEP13g, DEP13h	✓	✓	✓	✓	-	-	-
Evaporator Bottoms (Contains AFR Solids)	DEP02c, DEP02d, DEP05, DEP05d, DEP05e	✓	✓	✓	✓	✓*	-	-
Evaporator Overhead (DEP-VSL-00004A/B, DEP-VSL-00005A/B)	DEP01, DEP01a, DEP01b, DEP04, DEP04b, DEP04c, DEP04d, DEP04f, DEP04g, DEP20, DEP20a, DEP20b, DEP20c, DEP20d, DEP20e, DEP20f	✓	-	-	✓	-	-	✓
DVP Vent System	DEP06, DEP07, DEP08, DEP09, DEP14, DEP15, DEP16, DEP19a, DEP19b, DEP19c, DEP19d, DEP21, DEP24	✓	-	-	-	-	-	-
Sodium Nitrite Tank (SNR-TK-00002)	DEP10	-	-	-	✓	-	-	-
Sodium Hydroxide Tank (SHR-TK-00013)	DEP11, DEP11a	✓	✓	-	✓	-	-	-
Anti-Foam Tank (AFR-TK-00003)	DEP12	-	-	✓	✓	-	-	-
LAB LVP Transfer	LVP21, LVP21d	✓	-	-	✓	-	-	-
LAB RLD Transfer	RLD41, RLD41c	✓	-	-	-	-	-	-
LAW RLD Transfer	RLD21, RLD21f, RLD27	✓	✓	✓	✓	-	-	-

Note : ✓ = Considered to have specific property
- = N/A
* = Applicable to Evaporator Separator (DEP-EVAP-00001) only

288965

Attachments A are the meeting minutes of the cross-discipline meeting held of April 13, 2016.

Attachment B are the EMF PFDs.

Kevin Quine
Mechanical Engineer
Mechanical Systems

Attachment A - Meeting Minutes – April 13, 2016

Attachment B - EMF PFD's

1. 24590-BOF-M5-V17T-00011, Rev. 0, *Process Flow Diagram Direct Feed Effluent Transfer (System DEP)*
2. 24590-BOF-M5-V17T-00012, Rev. 0, *Process Flow Diagram Direct Feed Effluent Evaporator (System DEP)*
3. 24590-BOF-M5-V17T-00013, Rev. 0, *Process Flow Diagram Direct Feed Concentrate Transfer (System DEP and DVP)*
4. 24590-BOF-M5-V17T-00014, Rev. 0, *Process Flow Diagram Direct Feed Condensate Transfer (System DEP)*

Distribution

Addressee	MSIN
Hanson, Bob	Reston RO3
Huth, Dennis	Reston RO3

Copy Coverage	MSIN
Hix, William	Reston RO3
McCombie, Jan	Reston RO3
Mohammad-Zadeh, Yousseff	Reston RO3
Norton, Stephen	Reston RO3
Schreiber, Seth	Reston RO3
Snouffer, Patrick	Reston RO3
VanHall, Brian	Reston RO3
PADC	MS19-A

Attachment A

A meeting was held on April 13, 2016 to determine which property fields apply for the SPI process datasheets for EMF process system (AFR/DEP/DVP/SHR/SNR) instruments. Below are the seven property fields which were discussed with Mechanical Systems, C&I, and Process Engineering.

All subject property fields were examined on the following:

- Low-Point Drain Vessel (DEP-VSL-00001)
- Evaporator Feed Vessel (DEP-VSL-00002)
- Evaporator Concentrate Vessels (DEP-VSL-00003A/B/C)
- Evaporator Bottoms (Contains AFR solids)
- Evaporator Overhead
    - Overhead Sampling Vessels (DEP-VSL-00004A/B)
    - Process Condensate Lag Storage Vessels (DEP-VSL-00005A/B)
- DVP Vent System
- Sodium Nitrite Tank (SNR-TK-00002)
- Sodium Hydroxide Tank (SHR-TK-00013)
- Anti-Foam Tank (AFR-TK-00003)
- Transfer Lines into EMF

1) Toxic fluids are those that may cause harmful health effects to vital organs, persons breathing, and bodily contact (Ref. 1, pg. 9). This definition of toxic is for instruments and does not correspond to the toxic definition for category M piping. Per discussion with C&I, the determination of whether or not an instrument is considered as containing toxic fluids does not impact the purchase of the instrument.

   Based on radioactive/chemical composition, all the EMF process vessels, evaporator system, DVP Vent System, and sodium hydroxide tank are considered to be toxic. The lower activity streams were conservatively assumed to be toxic since there was no discrete cutoff. Although the DVP Vent system is primarily made up of air, it was conservatively considered toxic due to the potential for radionuclides to be entrained in the vent system. Anti-foam and sodium nitrite were not considered toxic due to having a health hazard less than 2.

2) Fluids containing greater than 1 g/l of chlorides and/or fluorides and fluids outside the pH range of 2 to 12.5 are considered to be corrosive (Ref. 1, pg. 9). Based on the fluid pH range and chloride/fluoride concentration described in the definition of corrosive (Ref. 1, pg. 9), the fluids in DEP-VSL-00001, DEP-VSL-00002, DEP-VSL-00003A/B/C, SHR-TK-00013, evaporator bottoms (contains AFR solids), and the LAW RLD transfer line would be conservatively considered a corrosive fluid. The pH level for each fluid in the process equipment/streams which was considered corrosive is shown on Table 2 (Ref. 3). For conservatism if the pH level was equal to or greater than 12, it was considered to be corrosive. Therefore, if the pH level was between the range 2 to 12, it was determined to be non-corrosive.

Table 2: pH Level for Corrosive Fluids

Primary Equipment	pH
DEP-VSL-00001	12.27
DEP-FILT-00003	0.23
DEP-VSL-00002	12
DEP-VSL-00003A/B/C	12.43
SHR-TK-00013	14.7
Evaporator Bottoms	12.43
LAW RLD Transfer Line	0.65

3) Erosive fluids contain suspended abrasive particles, high solid content or cause cavitation (Ref. 1, pg. 9). In the EMF, fluids which contain solids, glass formers, or silica were considered erosive. This results in DEP-VSL-00001, DEP-VSL-00003A/B/C, AFR-TK-00003, the LAW RLD transfer line, and evaporator bottoms (contains AFR solids) to be erosive. Process stream, DEP05e is the off-normal transfer line from the Evaporator Bottoms into DEP-VSL-00002. DEP05e is considered erosive and is unlikely to transfer into DEP-VSL-00002. Therefore, with the unlikelihood of erosive fluid coming in contact with DEP-VSL-00002, the vessel fluid is considered non-erosive.

4) Fluids with build-up tendency are those with undissolved/dissolved solids that could potentially create a film or layer of material that is likely to interfere with measuring or manipulating portions of an instrument (Ref. 1, pg. 9). This results in DEP-VSL-00001, DEP-VSL-00002, DEP-VSL-00003A/B/C, DEP-VSL-00004A/B, DEP-VSL-00005A/B, AFR-TK-00003, SHR-TK-00013, SNR-TK-00002, the LVP transfer line, the LAW RLD transfer line, and the evaporator bottoms (contains AFR solids) to have build-up tendency due to the pressure of dissolved/undissolved solids. There is not enough anticipated aerosol drop out for this to be an issue in the DVP vent system.

5) Foaming is not expected to occur in any of the EMF process vessel since mixing is not disturbing the surface. The Evaporator Separator Vessel (DEP-EVAP-00001) is expected to foam due to flashing and is controlled with addition of anti-foam. It was determined this property was only applicable to the radar level detection in the process vessels.

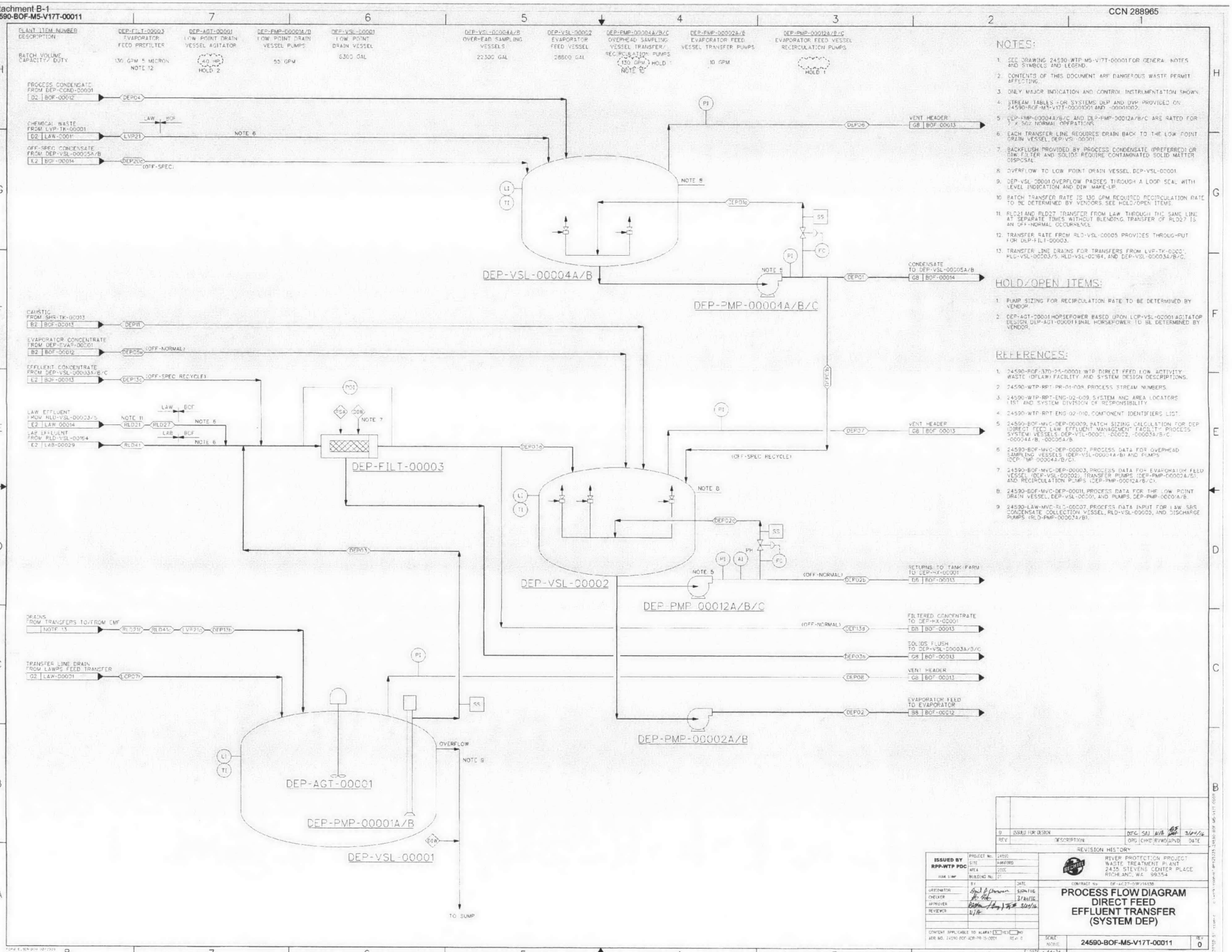
6) Solidifying is considered the process of becoming solid or hard by cooling, drying, or crystallization (Ref. 2, pg. 6). It was determined that solidifying does not occur in any of the EMF process vessels, chemical tanks, or vent system.

7) Turbulence/Vibration refers to the potential conditions that an instrument may see such as those located on lines near large rotating/oscillating equipment (Ref. 1, pg. 9). This occurs for radar type level transmitters which are attached directly to the top head of the vessels. DEP-VSL-00004A/B and DEP-VSL-00005A/B have radar type level transmitters attached

to the top head of the vessel and are considered to see turbulence on the surface of the fluid during transfers into the vessels.

8) The following transfer and utility stream lines property fields were determined by the following sampling upstream issued datasheets:

   a. RLD21, RLD21f and RLD27 property fields were determined from the upstream vessel pressure transmitter datasheet (Ref. 4)
   b. DEP17 and DEP18 are air lines which do not apply to the examined property fields due to the upstream HEPA filters.
   c. DEP22 and DEP23 are high pressure steam (HPS) lines which do not apply to the examined property fields.



NOTES:

1. SEE DRAWING 24590-WTP-M5-V17T-00001 FOR GENERAL NOTES AND SYMBOLS AND LEGEND.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. ONLY MAJOR INDICATION AND CONTROL INSTRUMENTATION SHOWN.
4. STREAM TABLES FOR SYSTEMS DEP AND DVP PROVIDED ON 24590-BOF-M3-V17T-00001001 AND -00001002.
5. DEP-PMP-00004A/B/C AND DEP-PMP-00012A/B/C ARE RATED FOR 2 X 50% NORMAL OPERATIONS.
6. EACH TRANSFER LINE REQUIRES DRAIN BACK TO THE LOW POINT DRAIN VESSEL, DEP-VSL-00001.
7. BACKFLUSH PROVIDED BY PROCESS CONDENSATE (PREFERRED) OR DIW. FILTER AND SOLIDS REQUIRE CONTAMINATED SOLID MATTER DISPOSAL.
8. OVERFLOW TO LOW POINT DRAIN VESSEL DEP-VSL-00001.
9. DEP-VSL-00001 OVERFLOW PASSES THROUGH A LOOP SEAL WITH LEVEL INDICATION AND DIW MAKE-UP.
10. BATCH TRANSFER RATE IS 130 GPM REQUIRED RECIRCULATION RATE TO BE DETERMINED BY VENDORS SEE HOLD/OPEN ITEMS.
11. RLD21 AND RLD27 TRANSFER FROM LAW THROUGH THE SAME LINE AT SEPARATE TIMES WITHOUT BLENDING. TRANSFER OF RLD27 IS AN OFF-NORMAL OCCURRENCE.
12. TRANSFER RATE FROM RLD-VSL-00005 PROVIDES THROUG-PUT FOR DEP-FILT-00003.
13. TRANSFER LINE DRAINS FOR TRANSFERS FROM LVP-TK-00001, RLD-VSL-00003A/B, RLD-VSL-00164, AND DEP-VSL-00003A/B/C.

HOLD/OPEN ITEMS:

1. PUMP SIZING FOR RECIRCULATION RATE TO BE DETERMINED BY VENDOR.
2. DEP-AGT-00001 HORSEPOWER BASED UPON LCP-VSL-02001 AGITATOR DESIGN. DEP-AGT-00001 FINAL HORSEPOWER TO BE DETERMINED BY VENDOR.

REFERENCES:

1. 24590-BOF-3YD-PS-00001 WTP DIRECT FEED LOW ACTIVITY WASTE (DFLAW) FACILITY AND SYSTEM DESIGN DESCRIPTIONS.
2. 24590-WTP-RPT-PR-01-008, PROCESS STREAM NUMBERS.
3. 24590-WTP-RPT-ENG-02-009, SYSTEM AND AREA LOCATORS LIST AND SYSTEM DIVISION OF RESPONSIBILITY.
4. 24590-WTP-RPT-ENG-02-010, COMPONENT IDENTIFIERS LIST.
5. 24590-BOF-MVC-DEP-00009, BATCH SIZING CALCULATION FOR DEP (DIRECT FEED LAW EFFLUENT MANAGEMENT FACILITY) PROCESS SYSTEM) VESSELS DEP-VSL-00001, -00002, -00003A/B/C, -00004A/B, -00005A/B.
6. 24590-BOF-MVC-DEP-00007, PROCESS DATA FOR OVERHEAD SAMPLING VESSELS (DEP-VSL-00004A/B) AND PUMPS (DEP-PMP-00004A/B/C).
7. 24590-BOF-MVC-DEP-00003, PROCESS DATA FOR EVAPORATOR FEED VESSEL (DEP-VSL-00002), TRANSFER PUMPS (DEP-PMP-00002A/B), AND RECIRCULATION PUMPS (DEP-PMP-00012A/B/C).
8. 24590-BOF-MVC-DEP-00011, PROCESS DATA FOR THE LOW POINT DRAIN VESSEL, DEP-VSL-00001, AND PUMPS, DEP-PMP-00001A/B.
9. 24590-LAW-MVC-RLD-00007, PROCESS DATA INPUT FOR LAW SBS CONDENSATE COLLECTION VESSEL, RLD-VSL-00005, AND DISCHARGE PUMPS (RLD-PMP-00003A/B).

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR DESIGN	DFG	SAJ	WLB	[illegible]	3/24/16

REVISION HISTORY

ISSUED BY RPP-WTP PDC

		DATE
ORIGINATOR	[signature]	3/24/16
CHECKER	[signature]	3/24/16
APPROVER	[signature]	3/24/16
REVIEWER	[signature]	3/24/16

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADE NO. 24590-BOF-ADE-M5-00001 REV. 0

BECHTEL

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

CONTRACT NO. DE-AC27-01RV14136

PROCESS FLOW DIAGRAM DIRECT FEED EFFLUENT TRANSFER (SYSTEM DEP)

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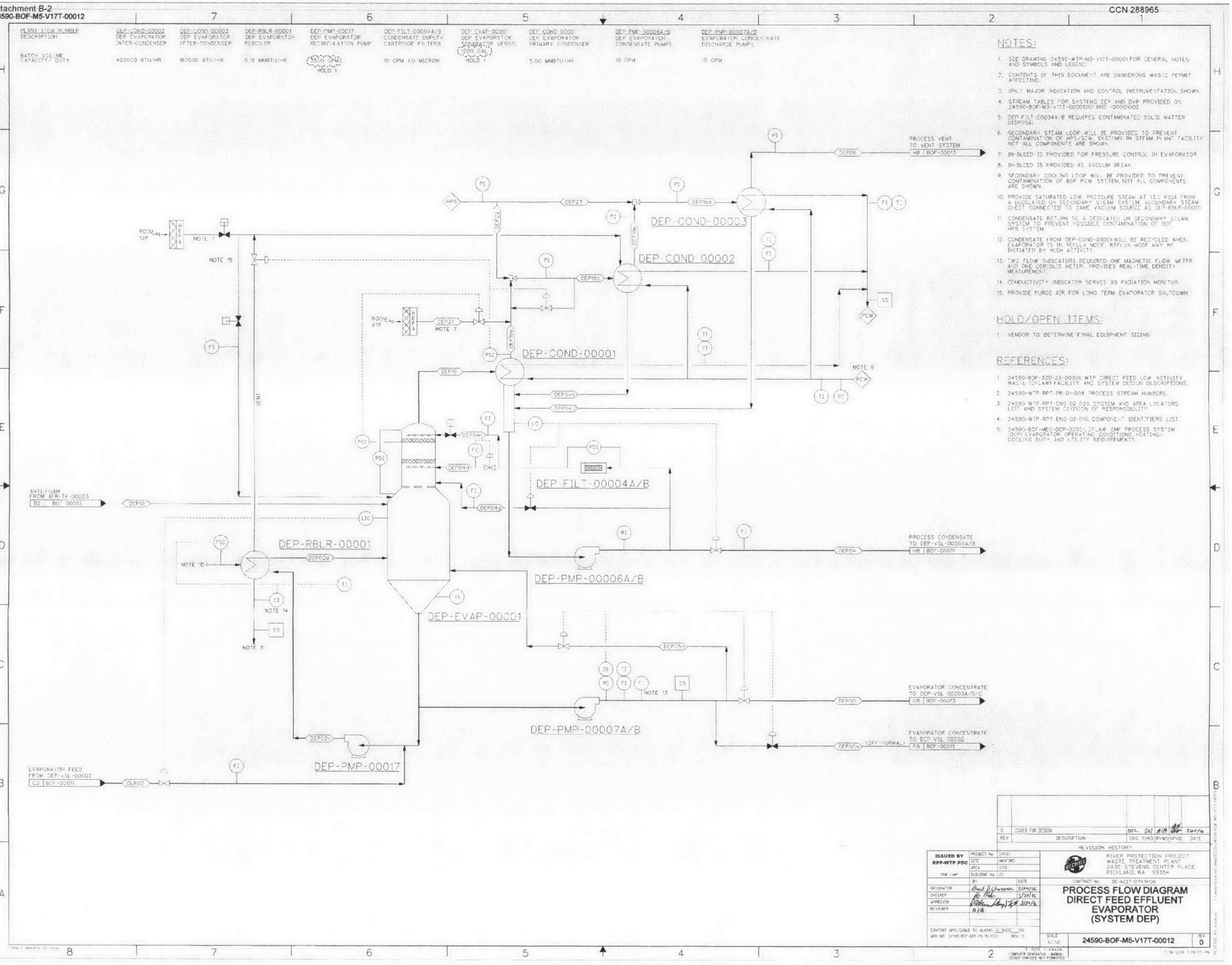

NOTES:

1. SEE DRAWING 24590-WTP-M3-V17T-00001 FOR GENERAL NOTES AND SYMBOLS AND LEGEND.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. ONLY MAJOR INDICATION AND CONTROL INSTRUMENTATION SHOWN.
4. STREAM TABLES FOR SYSTEMS DEP AND DVP PROVIDED ON 24590-BOF-M3-V17T-00001001 AND -00001002.
5. DEP-FILT-00004A/B REQUIRES CONTAMINATED SOLID MATTER DISPOSAL.
6. SECONDARY STEAM LOOP WILL BE PROVIDED TO PREVENT CONTAMINATION OF HPS/SCW SYSTEMS IN STEAM PLANT FACILITY. NOT ALL COMPONENTS ARE SHOWN.
7. IN-BLEED IS PROVIDED FOR PRESSURE CONTROL IN EVAPORATOR.
8. IN-BLEED IS PROVIDED AS VACUUM BREAK.
9. SECONDARY COOLING LOOP WILL BE PROVIDED TO PREVENT CONTAMINATION OF BOF PCW SYSTEM. NOT ALL COMPONENTS ARE SHOWN.
10. PROVIDE SATURATED LOW PRESSURE STEAM AT 13.0 PSIA FROM A DEDICATED OR SECONDARY STEAM SYSTEM. SECONDARY STEAM CHEST CONNECTED TO SAME VACUUM SOURCE AS DEP-RBLR-00001.
11. CONDENSATE RETURN TO A DEDICATED OR SECONDARY STEAM SYSTEM TO PREVENT POSSIBLE CONTAMINATION OF BOF HPS SYSTEM.
12. CONDENSATE FROM DEP-COND-00001 WILL BE RECYCLED WHEN EVAPORATOR IS IN REFLUX MODE. REFLUX MODE MAY BE INITIATED BY HIGH ACTIVITY.
13. TWO FLOW INDICATORS REQUIRED: ONE MAGNETIC FLOW METER AND ONE CORIOLIS METER. PROVIDES REAL-TIME DENSITY MEASUREMENT.
14. CONDUCTIVITY INDICATOR SERVES AS RADIATION MONITOR.
15. PROVIDE PURGE AIR FOR LONG TERM EVAPORATOR SHUTDOWN.

HOLD/OPEN ITEMS:

1. VENDOR TO DETERMINE FINAL EQUIPMENT SIZING.

REFERENCES:

1. 24590-BOF-3ZD-25-00001, WTP DIRECT FEED LOW ACTIVITY WASTE (DFLAW) FACILITY AND SYSTEM DESIGN DESCRIPTIONS.
2. 24590-WTP-RPT-PR-01-008, PROCESS STREAM NUMBERS.
3. 24590-WTP-RPT-ENG-02-009, SYSTEM AND AREA LOCATORS LIST AND SYSTEM DIVISION OF RESPONSIBILITY.
4. 24590-WTP-RPT-ENG-02-010, COMPONENT IDENTIFIERS LIST.
5. 24590-BOF-MEC-DEP-00001, DFLAW EMF PROCESS SYSTEM (DEP) EVAPORATOR OPERATING CONDITIONS, HEATING/COOLING DUTY, AND UTILITY REQUIREMENTS.

REV.	DESCRIPTION	DRG. CHK'D	RVW'D	APV'D	DATE
0	ISSUED FOR DESIGN	DTC SAJ	NIA		3/24/16

REVISION HISTORY

ISSUED BY RPP-WTP PDC	PROJECT No. 24590
	SITE 200 WEST
	AREA 200E
	BUILDING No. 25

	BY	DATE
ORIGINATOR	David Johnson	3/24/16
CHECKER		3/24/16
APPROVER		3/24/16
REVIEWER	N/A	

CONTENT APPLICABLE TO ALARMS: ☐ YES ☒ NO
ADR NO. 24590-BOF-ADR-PR-15-0001 REV. 0

BECHTEL

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

CONTRACT No. DE-AC27-01RV14136

PROCESS FLOW DIAGRAM DIRECT FEED EFFLUENT EVAPORATOR (SYSTEM DEP)

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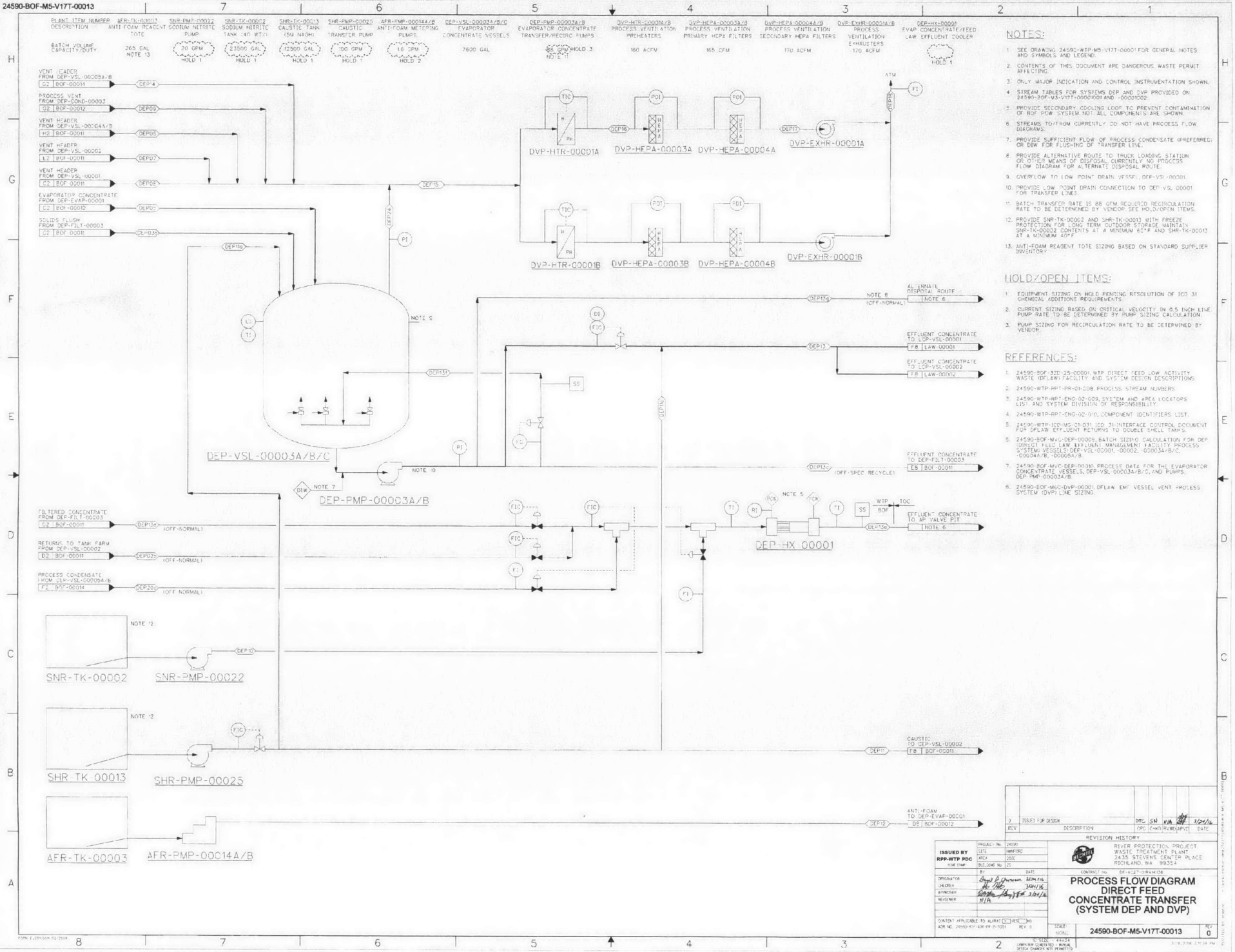

NOTES:

1. SEE DRAWING 24590-WTP-M5-V17T-00001 FOR GENERAL NOTES AND SYMBOLS AND LEGEND.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. ONLY MAJOR INDICATION AND CONTROL INSTRUMENTATION SHOWN.
4. STREAM TABLES FOR SYSTEMS DEP AND DVP PROVIDED ON 24590-BOF-M3-V17T-00001001 AND -00001002.
5. PROVIDE SECONDARY COOLING LOOP TO PREVENT CONTAMINATION OF BOF PDW SYSTEM. NOT ALL COMPONENTS ARE SHOWN.
6. STREAMS TO/FROM CURRENTLY DO NOT HAVE PROCESS FLOW DIAGRAMS.
7. PROVIDE SUFFICIENT FLOW OF PROCESS CONDENSATE (PREFERRED) OR DIW FOR FLUSHING OF TRANSFER LINE.
8. PROVIDE ALTERNATIVE ROUTE TO TRUCK LOADING STATION OR OTHER MEANS OF DISPOSAL. CURRENTLY NO PROCESS FLOW DIAGRAM FOR ALTERNATE DISPOSAL ROUTE.
9. OVERFLOW TO LOW POINT DRAIN VESSEL DEP-VSL-00001.
10. PROVIDE LOW POINT DRAIN CONNECTION TO DEP VSL 00001 FOR TRANSFER LINES.
11. BATCH TRANSFER RATE IS 88 GPM. REQUIRED RECIRCULATION RATE TO BE DETERMINED BY VENDOR. SEE HOLD/OPEN ITEMS.
12. PROVIDE SNR-TK-00002 AND SHR-TK-00013 WITH FREEZE PROTECTION FOR LONG TERM OUTDOOR STORAGE. MAINTAIN SNR-TK-00002 CONTENTS AT A MINIMUM 62°F AND SHR-TK-00013 AT A MINIMUM 40°F.
13. ANTI-FOAM REAGENT TOTE SIZING BASED ON STANDARD SUPPLIER INVENTORY.

HOLD/OPEN ITEMS:

1. EQUIPMENT SIZING ON HOLD PENDING RESOLUTION OF ICD 31 CHEMICAL ADDITIONS REQUIREMENTS.
2. CURRENT SIZING BASED ON CRITICAL VELOCITY IN 0.5 INCH LINE. PUMP RATE TO BE DETERMINED BY PUMP SIZING CALCULATION.
3. PUMP SIZING FOR RECIRCULATION RATE TO BE DETERMINED BY VENDOR.

REFERENCES:

1. 24590-BOF-3ZD-25-00001 WTP DIRECT FEED LOW ACTIVITY WASTE (DFLAW) FACILITY AND SYSTEM DESIGN DESCRIPTIONS.
2. 24590-WTP-RPT-PR-01-008, PROCESS STREAM NUMBERS.
3. 24590-WTP-RPT-ENG-02-003, SYSTEM AND AREA LOCATORS LIST AND SYSTEM DIVISION OF RESPONSIBILITY.
4. 24590-WTP-RPT-ENG-02-010, COMPONENT IDENTIFIERS LIST.
5. 24590-WTP-ICD-MG-01-031, ICD 31-INTERFACE CONTROL DOCUMENT FOR DFLAW EFFLUENT RETURNS TO DOUBLE SHELL TANKS.
6. 24590-BOF-MVC-DEP-00005, BATCH SIZING CALCULATION FOR DEP (DIRECT FEED LAW EFFLUENT MANAGEMENT FACILITY PROCESS SYSTEM) VESSELS: DEP-VSL-00001, -00002, -00003A/B/C, -00004A/B, -00005A/B.
7. 24590-BOF-MVC-DEP-00030, PROCESS DATA FOR THE EVAPORATOR CONCENTRATE VESSELS, DEP-VSL-00003A/B/C, AND PUMPS, DEP-PMP-00003A/B.
8. 24590-BOF-M6C-DVP-00001, DFLAW EMF VESSEL VENT PROCESS SYSTEM (DVP) LINE SIZING.

REV	DESCRIPTION	ORG	CHKD	RVWD	APVD	DATE
0	ISSUED FOR DESIGN	DTC	SN	N/A	[illegible]	3/24/16

REVISION HISTORY

ISSUED BY RPP-WTP PDC

	BY	DATE
ORIGINATOR	[illegible]	3/24/16
CHECKER	[illegible]	3/24/16
APPROVER	[illegible]	3/24/16
REVIEWER	N/A	

CONTENT APPLICABLE TO ALARA? [X] YES [ ] NO
ADR NO. 24590-BOF-ADR-PR-15-0001 REV. 0

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

CONTRACT NO. DE-AC27-01RV14136

PROCESS FLOW DIAGRAM DIRECT FEED CONCENTRATE TRANSFER (SYSTEM DEP AND DVP)

SCALE: NONE
24590-BOF-M5-V17T-00013
REV 0

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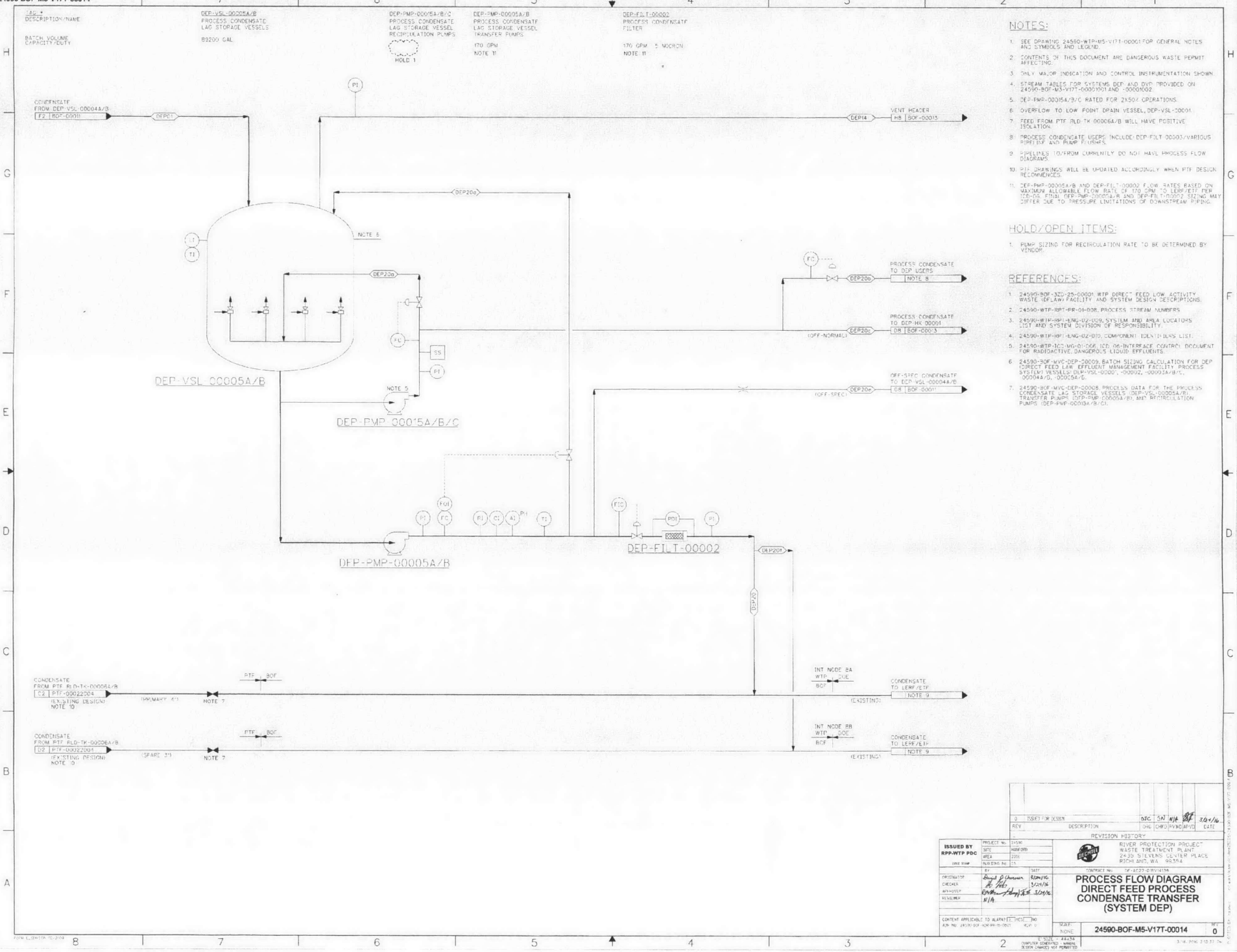

NOTES:

1. SEE DRAWING 24590-WTP-M5-V17T-00001 FOR GENERAL NOTES AND SYMBOLS AND LEGEND.
2. CONTENTS OF THIS DOCUMENT ARE DANGEROUS WASTE PERMIT AFFECTING.
3. ONLY MAJOR INDICATION AND CONTROL INSTRUMENTATION SHOWN.
4. STREAM TABLES FOR SYSTEMS DEP AND DVP PROVIDED ON 24590-BOF-M3-V17T-00005/00001 AND -00000002.
5. DEP-PMP-00015A/B/C RATED FOR 2X50% OPERATIONS.
6. OVERFLOW TO LOW POINT DRAIN VESSEL, DEP-VSL-00001.
7. FEED FROM PTF RLD TK 00006A/B WILL HAVE POSITIVE ISOLATION.
8. PROCESS CONDENSATE USERS INCLUDE DEP-FILT-00003/VARIOUS PIPELINE AND PUMP FLUSHES.
9. PIPELINES TO/FROM CURRENTLY DO NOT HAVE PROCESS FLOW DIAGRAMS.
10. PTF DRAWINGS WILL BE UPDATED ACCORDINGLY WHEN PTF DESIGN RECOMMENCES.
11. DEP-PMP-00005A/B AND DEP-FILT-00002 FLOW RATES BASED ON MAXIMUM ALLOWABLE FLOW RATE OF 170 GPM TO LERF/ETF PER ICD-06. FINAL DEP-PMP-00005A/B AND DEP-FILT-00002 SIZING MAY DIFFER DUE TO PRESSURE LIMITATIONS OF DOWNSTREAM PIPING.

HOLD/OPEN ITEMS:

1. PUMP SIZING FOR RECIRCULATION RATE TO BE DETERMINED BY VENDOR.

REFERENCES:

1. 24590-BOF-3ZC-25-00001 WTP DIRECT FEED LOW ACTIVITY WASTE (DFLAW) FACILITY AND SYSTEM DESIGN DESCRIPTIONS.
2. 24590-WTP-RPT-PR-01-008, PROCESS STREAM NUMBERS.
3. 24590-WTP-MPL-ENG-02-009, SYSTEM AND AREA LOCATORS LIST AND SYSTEM DIVISION OF RESPONSIBILITY.
4. 24590-WTP-MPL-ENG-02-010, COMPONENT IDENTIFIERS LIST.
5. 24590-WTP-ICD-MG-01-006, ICD 06-INTERFACE CONTROL DOCUMENT FOR RADIOACTIVE, DANGEROUS LIQUID EFFLUENTS.
6. 24590-BOF-MVC-DEP-00009, BATCH SIZING CALCULATION FOR DEP DIRECT FEED LAW EFFLUENT MANAGEMENT FACILITY PROCESS SYSTEM VESSELS: DEP-VSL-00001, -00002, -00003A/B/C, -00004A/B, -00005A/B.
7. 24590-BOF-MVC-DEP-00008, PROCESS DATA FOR THE PROCESS CONDENSATE LAG STORAGE VESSELS (DEP-VSL-00005A/B), TRANSFER PUMPS (DEP-PMP-00005A/B), AND RECIRCULATION PUMPS (DEP-PMP-00015A/B/C).

REV	DESCRIPTION	DRC	CHKD	PE/MGR	APVD	DATE
0	ISSUED FOR DESIGN	SAT	N/A	SAT		3/24/16

REVISION HISTORY

ISSUED BY RPP-WTP PDC

	BY	DATE
ORIGINATOR	Bruce J. Chapman	3/24/16
CHECKER	R. Tate	3/24/16
MGR/DISCIP	[illegible]	3/24/16
RESPONSIBLE	N/A	

CONTENT APPLICABLE TO ALARA? (X) YES ( ) NO
RPP-WTP-DEP-M5-V17T-00014 REV 0

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

CONTRACT NO. DE-AC27-01RV14136

PROCESS FLOW DIAGRAM DIRECT FEED PROCESS CONDENSATE TRANSFER (SYSTEM DEP)

SCALE: NONE

24590-BOF-M5-V17T-00014 REV 0

D SIZE - 44x34
COMPUTER GENERATED - MANUAL DESIGN CHANGES NOT PERMITTED