

SECONDARY SYSTEM AND WATER TREATMENT PLANT SAMPLE POINTS

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1.0 <u>PURPOSE</u>

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This procedure provides a list of approved sample points, their location, minimum purge volumes for secondary sample collection, and additional sampling guidance as appropriate for secondary water chemistry and water treatment.

2.0 PREREQUISITES

Appropriate collection bottles

3.0 PRECAUTIONS AND LIMITATIONS

- NOTE: Sample points not included in this procedure require Chemistry lab supervisor approval prior to use.
- 3.1 In certain instances, alternate sample points may be required to determine the effects, if any, of sample tubing runs.
- 3.2 Care should be taken when sampling at points other than the sample panels. These points will not have gone through a heat exchanger and may be hot. They may also be under pressure.
- 3.3 Sampling in the primary sample room requires the technician to work under a standing RWP. All steps shall be taken to comply with the standing RWP procedure (NP 4.2.21).
- 3.4 When samples have activity greater than 1.00 E-3 μ ci/cc Beta/Gamma or, 1.00 E-3 μ ci/cc $_1$ H³, the handling precautions of CAMP 602 shall be followed.
- 3.5 Secondary samples collected in the primary sample room are to be considered contaminated until verified not to be contaminated.
- 3.6 The discharge of sink sample hoses shall always be directed away from the sampler when first opening any sink sample valve.
- 3.7 Wear heavy gloves to protect hands from possible burns when obtaining steam generator blowdown filter outlet samples.
- 3.8 Samples for anion analysis may be grabbed on the discharge of a thoroughly flushed cation column if the cations present in the sample cause matrix problems.
- 3.9 Sampling and handling shall be done in accordance with NP 3.2.1.

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	NOTE:	Steps 5.2.3 and 5.2.4 can be completed concurrently if sampling both steam generators. <u>IF sampling the A S/G in the Primary Sample Sink, THEN perform the following:</u>		
	5.2.3			
		NOTE: RE-219 might alarm in th	e control room due to low flow.	
		a. Inform the control room that RE-2	19 might alarm due to low flow.	
		b. Open SS-148 and SS-151.		
			"A " Steam Generator Controlled	

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- c. Purge the line per Attachment A for "A" Steam Generator Controlled Side Sample Room.
 - d. Shut SS-148 and SS-151.
 - e. Open SS-146 and SS-152.
 - f. Collect appropriate sample volume.
 - g. Shut SS-146 and SS-152.
 - h. <u>IF RE-219 alarmed</u>, <u>THEN</u> contact the control room to see if you should reset the alarm.

5.2.4 <u>IF sampling the B S/G in the Primary Sample Sink,</u> <u>THEN perform the following:</u>

NOTE: RE-219 might alarm in the control room due to low flow.

- a. Inform the control room that RE-219 might alarm due to low flow.
- b. Open SS-149 and SS-151.
- c. Purge the line per Attachment A for "A" Steam Generator Controlled Side Sample Room.
- d. Shut SS-149 and SS-151.
- e. Open SS-147 and SS-153.
- f. Collect appropriate sample volume.
- g. Shut SS-147 and SS-153.

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ATTACHMENT A TABLE OF PURGE VOLUMES FOR SECONDARY SYSTEM

NOTE: Hotwell conductivity verification to be sampled at outlet of installed conductivity cell.

Unit 1 Grab Samples			
Sample	Valve Number	Location	Min. Purge Volume (ml)
Condensate Pump Discharge	1SS-68	Sample Panel Turbine Hall 8'	6600'
Steam Generator Feed Pump	1SS-69	Sample Panel Turbine Hall 8'	11100'
Suction	1SS-70	Sample Panel Turbine Hall 8'	13700 ¹
DD FECUWAICI FICAICI UUUCI	1SS-71	Sample Panel Turbine Hall 8'	8800'
Auxiliary Feed	1SS-72	Sample Panel Turbine Hall 8'	4000'
Main Steam	1SS-73	Sample Panel Turbine Hall 8'	36300'
Hotwell 1, 2, 3, 4	1CS84F 1CS84G	8' Level Ul Turbine Hall	3200' N/A
"A" Steam Generator	1FI-4251A	SGBD Panel Turbine Hall 8'	145000
"B" Steam Generator	1FI-4253A	SGBD Panel Turbine Hall 8'	137000'
"A" Steam Generator	1SS-152	U1 Controlled Side Sample Room	3004
"B" Steam Generator	1SS-153	U1 Controlled Side Sample Room	300'
Steam Generator Blowdown Filter	1-MS-310	Aux. Bldg. 8' Level South	200
Steam Generator Blowdown Filter	1-MS-302	Aux. Bldg. 8' Level South	1700
Steam Generator Blowdown Filter	1-MS-306	Aux. Bldg. 8' Level South	1600
Radwaste Steam Condensate	RW-7	8' Ul Turbine Hall	2300

¹ Samples that have continuous flow.

- ² Minimum purge volume when there is continuous flow through FI-04251A (minimum purge volume when <u>NOT</u> continuous is 72900ml).
- ³ Minimum purge volume when there is continuous flow through FI-04253A (minimum purge volume when <u>NOT</u> continuous is 65900 ml).
- ⁴ Integrated samples for condensate pump discharge, 5B feedwater heater outlet, and heater drain tank are taken from 1SS-38, 1SS-40, and 1SS-41, respectively.
- ⁵ Anion samples for SG1A and SG1B are taken from 1FI-4251C and 1FI-4253C, respectively.

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ATTACHMENT B TABLE OF COMMON GRAB SAMPLES FOR SECONDARY SYSTEM

Sample	Valve Number	Location	Min. Purge Volume (ml)
"A" Condensate Storage Tank	AF-13B	26' Turbine Hall	100
"B" Condensate Storage Tank	AF-14B	26' Turbine Hall	100
Heating Boiler Feed/Condensate	AF-68B	8' U2 Turbine Hall (SW corner)	300
"A" House Heating Boiler	HV-757	26' U2 Turbine Hall	600
"B" House Heating Boiler	HV-771	26' U2 Turbine Hall	1000
1P29 Auxiliary Feed Pump Suction	1AF25	8' Level Turbine Hall	100
1P29 Auxiliary Feed Pump Leakoff	Local	8' Level Turbine Hall	900 ¹
P38A Auxiliary Feed Pump Suction	AF38	8' Level Turbine Hall	100
P38A Auxiliary Feed Pump Leakoff	Local	8' Level Turbine Hall	900 ¹
P38B Auxiliary Feed Pump Suction	AF51	8' Level Turbine Hall -	100 .
P38B Auxiliary Feed Pump Leakoff	Local	8' Level Turbine Hall	1500 ¹
2P29 Auxiliary Feed Pump Suction	2AF63	8' Level Turbine Hall	100
2P29 Auxiliary Feed Pump Leakoff	Local	8' Level Turbine Hall	900'
Unit 1 Service Water Overboard	SW-146H .	8' Level U1 Control Side	500 ²
Unit 2 Service Water Overboard	SW-104H	8' Level Turbine Hall	5003

¹ Samples that have a continuous drip or flow.

- ² Minimum purge volume when service water return header pump is running (minimum purge volume when <u>NOT</u> running is 3000 ml).
- ³ Minimum purge volume when service water return header pump is running (minimum purge volume when <u>NOT</u> running is 9800 ml).

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ATTACHMENT C WATER TREATMENT GRAB SAMPLES (continued)

CR. Reverse Osmosis Feedwater WT-651C U2 TH 8'/U17C WT-650C 100 "C" Manual Feedwater SDI Sample WT-654C U2 TH 8'/U17C WT-650C 200 "C" Manual Feedwater SDI Sample WT-664C U2 TH 8'/U17C WT-650C 100 "F225C First Stage "A" Membrane Outlet WT-666C U2 TH 8'/U17C WT-650C 100 F-226C First Stage "C" Membrane Outlet WT-667C U2 TH 8'/U17C WT-650C 100 F-227C First Stage "C" Membrane Outlet WT-667C U2 TH 8'/U17C WT-650C 100 Outlet - WT-667C U2 TH 8'/U17C WT-650C 100 F-230C Third Stage "B" Membrane Outlet WT-670C U2 TH 8'/U17C WT-650C 100 F-231C Third Stage "B" Membrane Outlet WT-671C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "B" Membrane Outlet WT-672C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-673C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-303A U10A WT-300A 100 <th>Sample</th> <th>Valve Number</th> <th>Location</th> <th>Root</th> <th>Min. Purge</th>	Sample	Valve Number	Location	Root	Min. Purge
"C" Reverse Osmosis Feedwater WT-651C U2 TH 87/U17C WT-650C 100 "C" Manual Feedwater SDI Sample WT-654C U2 TH 87/U17C WT-650C 100 F-225C First Stage "A" Membrane Outlet WT-665C U2 TH 87/U17C WT-650C 100 F-226C First Stage "B" Membrane Outlet WT-665C U2 TH 87/U17C WT-650C 100 F-227C First Stage "A" Membrane Outlet WT-666C U2 TH 87/U17C WT-650C 100 Guidet WT-668C U2 TH 87/U17C WT-650C 100 F-228C First Membrane Outlet WT-669C U2 TH 87/U17C WT-650C 100 F-230C Third Stage "A" Membrane Outlet WT-670C U2 TH 87/U17C WT-650C 100 F-232C Fourth Stage "A" Membrane Outlet WT-671C U2 TH 87/U17C WT-650C 100 F-232C Fourth Stage "B" Membrane Outlet WT-672C U2 TH 87/U17C WT-650C 100 F-232C Fourth Stage "B" Membrane Outlet WT-673C U2 TH 87/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-602C U2 TH 87/U17C WT-650C 100 <td>Sample</td> <td></td> <td></td> <td>Valve</td> <td>Volume(ml)</td>	Sample			Valve	Volume(ml)
C Construction WT-654C U2 TH 87/U17C WT-650C 200 F-225C First Stage "A" Membrane Outlet WT-665C U2 TH 87/U17C WT-650C 100 F-225C First Stage "B" Membrane Outlet WT-666C U2 TH 87/U17C WT-650C 100 F-226C First Stage "C" Membrane Outlet WT-666C U2 TH 87/U17C WT-650C 100 F-226C First Stage "C" Membrane Outlet WT-666C U2 TH 87/U17C WT-650C 100 F-228C Second Stage "A" Membrane WT-666C U2 TH 87/U17C WT-650C 100 Outlet F-230C Third Stage "A" Membrane Outlet WT-670C U2 TH 87/U17C WT-650C 100 F-232C Fourth Stage "B" Membrane Outlet WT-671C U2 TH 87/U17C WT-650C 100 F-232C Fourth Stage "B" Membrane Outlet WT-673C U2 TH 87/U17C WT-650C 100 "C" Reverse Osmosis Product WT-662C U2 TH 87/U17C WT-650C 100 "C" Cation Inlet WT-303A U10A WT-300A 100 "C" Cation Inlet WT-303A U10A WT-300A <td< td=""><td>"C" Reverse Osmosis Feedwater</td><td>WT-651C</td><td>U2 TH 8'/U17C</td><td>WT-650C</td><td>100</td></td<>	"C" Reverse Osmosis Feedwater	WT-651C	U2 TH 8'/U17C	WT-650C	100
F-223C First Stage "A" Membrane Outlet WT-665C U2 TH 8'/U17C WT-650C 100 F-223C First Stage "C" Membrane Outlet WT-665C U2 TH 8'/U17C WT-650C 100 F-227C First Stage "C" Membrane Outlet WT-667C U2 TH 8'/U17C WT-650C 100 F-228C Second Stage "A" Membrane WT-667C U2 TH 8'/U17C WT-650C 100 Outlet WT-667C U2 TH 8'/U17C WT-650C 100 F-229C Second Stage "A" Membrane Outlet WT-670C U2 TH 8'/U17C WT-650C 100 F-231C Third Stage "A" Membrane Outlet WT-671C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "B" Membrane Outlet WT-671C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "B" Membrane Outlet WT-672C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Product WT-662C U2 TH 8'/U17C WT-650C 100 "C" Cation Inlet WT-6303A U10A WT-300A 100 "C" Cation Inlet WT-303A U10A WT 300A 100 "C" Cation Inlet FI-9354A WT Sample Panel WT 312A 16000 <td>"C" Manual Feedwater SDI Sample</td> <td>WT-654C</td> <td>U2 TH 8'/U17C</td> <td>WT-650C</td> <td>200</td>	"C" Manual Feedwater SDI Sample	WT-654C	U2 TH 8'/U17C	WT-650C	200
172201 1111 111 111 111	E 225C First Stage "A" Membrane Outlet	WT-665C	U2 TH 8'/U17C	WT-650C	100
172200 First Stage "C" Membrane Outlet WT-667C U2 TH 8'/U17C WT-650C 100 F-230C First Stage "C" Membrane WT-668C U2 TH 8'/U17C WT-650C 100 Outlet WT-650C U2 TH 8'/U17C WT-650C 100 P-230C Third Stage "A" Membrane Outlet WT-670C U2 TH 8'/U17C WT-650C 100 F-230C Third Stage "A" Membrane Outlet WT-6770C U2 TH 8'/U17C WT-650C 100 F-231C Third Stage "A" Membrane Outlet WT-6770C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "A" Membrane Outlet WT-673C U2 TH 8'/U17C WT-650C 100 F-233C Fourth Stage "B" Membrane Outlet WT-673C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Product WT-662C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-303A U10A WT-300A 100 "A" Cation Inlet WT-303C U10C WT-300A 100 "A" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "A" Cation Ou	F-226C First Stage "B" Membrane Outlet	WT-666C	U2 TH 8'/U17C	WT-650C	100
112210 This Object WT-668C U2 TH 8'/U17C WT-650C 100 Outlet WT-669C U2 TH 8'/U17C WT-650C 100 F-229C Second Stage "A" Membrane Outlet WT-670C U2 TH 8'/U17C WT-650C 100 F-230C Third Stage "B" Membrane Outlet WT-670C U2 TH 8'/U17C WT-650C 100 F-231C Third Stage "A" Membrane Outlet WT-672C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "A" Membrane Outlet WT-673C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "B" Membrane Outlet WT-673C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Product WT-660C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-630A U10A WT-630C 100 "C" Cation Inlet WT-303B U10B WT-300B 100 "B" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "A" Anion Inlet WT 403A U14A WT 402A 600 "B" Anion Inlet WT 403A U14A WT 402A 600 "B" Anion Inlet WT 40	F-220C First Stage "C" Membrane Outlet	WT-667C	U2 TH 8'/U17C	WT-650C	100
Procession Procession <thprocession< th=""> Procession Processi</thprocession<>	E 229C Second Stage "A" Membrane	WT-668C	U2 TH 8'/U17C	WT-650C	100
District WT-669C U2 TH 8'/U17C WT-650C 100 Outlet WT-670C U2 TH 8'/U17C WT-650C 100 F-230C Third Stage "A" Membrane Outlet WT-670C U2 TH 8'/U17C WT-650C 100 F-231C Third Stage "A" Membrane Outlet WT-671C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "B" Membrane Outlet WT-672C U2 TH 8'/U17C WT-650C 100 F-233C Fourth Stage "B" Membrane Outlet WT-672C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-660C U2 TH 8'/U17C WT-650C 100 "C" Cation Inlet WT-303A U10A WT-300A 100 "A" Cation Inlet WT-303A U10A WT-300B 100 "A" Cation Inlet WT-303C U10C WT-300C 100 "A" Cation Outlet FI-9354B WT Sample Panel WT 312B 14500 "B" Cation Outlet FI-9354C WT 402A 600 3000 100 "C" Cation Outlet FI-9363A WT 402A 60	Outlet				
Outlet WT-670C U2 TH 8'/U17C WT-650C 100 F-231C Third Stage "B" Membrane Outlet WT-671C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "A" Membrane Outlet WT-671C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "A" Membrane Outlet WT-672C U2 TH 8'/U17C WT-650C 100 F-233C Fourth Stage "B" Membrane Outlet WT-673C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-662C U2 TH 8'/U17C WT-650C 100 "C" Cation Inlet WT-303A U10A WT-300A 100 "A" Cation Inlet WT-303B U10B WT-300E 100 "C" Cation Inlet WT-303C U10C WT 300C 100 "A" Cation Outlet F1-9354A WT Sample Panel WT 312A 16000 "B" Cation Outlet F1-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet F1-9354C WT 402A 600 130C 14000 140C WT 402A 600 17 13	F-229C Second Stage "B" Membrane	WT-669C	U2 TH 8'/U17C	WT-650C	100
F-230C Third Stage "A" Membrane Outlet WT-670C U2 TH 87/U17C WT-650C 100 F-231C Third Stage "B" Membrane Outlet WT-671C U2 TH 87/U17C WT-650C 100 F-232C Fourth Stage "A" Membrane Outlet WT-672C U2 TH 87/U17C WT-650C 100 F-233C Fourth Stage "B" Membrane Outlet WT-672C U2 TH 87/U17C WT-650C 100 "C" Reverse Osmosis Product WT-662C U2 TH 87/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-660C U2 TH 87/U17C WT-650C 100 "A" Cation Inlet WT-303A U10A WT-300A 100 "B" Cation Inlet WT-303A U10C WT-300B 100 "C" Cation Inlet WT-303C U10C WT-300C 100 "C" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "B" Cation Outlet FI-9354C WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 402A 600 "B" Anion Inlet	Outlet				
F-231C Third Stage "B" Membrane Outlet WT-671C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "A" Membrane Outlet WT-672C U2 TH 8'/U17C WT-650C 100 F-232C Fourth Stage "B" Membrane Outlet WT-673C U2 TH 8'/U17C WT-650C 100 F-233C Fourth Stage "B" Membrane Outlet WT-6673C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-660C U2 TH 8'/U17C WT-650C 100 "A" Cation Inlet WT-303A U10A WT-300A 100 "B" Cation Inlet WT-303B U10B WT-300B 100 "C" Cation Inlet WT-303C U10C WT-300B 100 "C" Cation Outlet FI-9354A WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354B WT Sample Panel WT 312C 13000 Deaerator Outlet 4 WT 403A U14A WT 402A 600 "C" Anion Inlet WT 403A U14A WT 402A 600 "C" Anion Inlet WT 403A U14C WT 413A 15400 "C" Anion Inlet WT 403C WT Sample Pane	F-230C Third Stage "A" Membrane Outlet	WT-670C	U2 TH 8'/U17C	WT-650C	100
F-232C Fourth Stage "A" Membrane Outlet WT-672C U2 TH 8'/U17C WT-650C 100 F-233C Fourth Stage "B" Membrane Outlet WT-673C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Product WT-662C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-660C U2 TH 8'/U17C WT-650C 100 "A" Cation Inlet WT-303A U10A WT-300A 100 "P" Cation Inlet WT-303C U10C WT-300B 100 "C" Cation Inlet WT-303C U10C WT-300C 100 "A" Cation Outlet FI-9354A WT Sample Panel WT 312B 14500 "A" Cation Outlet FI-9354B WT Sample Panel WT 312B 14500 "A" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 402A 600 "A" Anion Inlet WT 403A U14A WT 402A 600 "A" Anion Inlet WT 403A U14B WT 402C 600 "C" Anion Inlet WT 403C U14C WT 402C	F-231C Third Stage "B" Membrane Outlet	WT-671C	U2 TH 8'/U17C	WT-650C	100
F-233C Fourth Stage "B" Membrane Outlet WT-673C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Product WT-662C U2 TH 8'/U17C WT-650C 100 "C" Reverse Osmosis Reject WT-660C U2 TH 8'/U17C WT-650C 100 "A" Cation Inlet WT-303A U10A WT-300A 100 "B" Cation Inlet WT-303B U10B WT-300B 100 "C" Cation Inlet WT-303A U10C WT-300C 100 "A" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "B" Cation Outlet FI-9354B WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 402A 600 "C" Anion Inlet WT 403A U14A WT 402B 600 "B" Anion Inlet WT 403C U14C WT 402C 600 "C" Anion Inlet WT 403C U14C WT 413A 15400 "B" Anion Inlet WT 403C U14C WT 413A 15400	F-232C Fourth Stage "A" Membrane Outlet	WT-672C	U2 TH 8'/U17C	WT-650C	100
"C" Reverse Osmosis Product WT-662C U2 TH 8/JU17C WT-650C 100 "C" Reverse Osmosis Reject WT-660C U2 TH 8/JU17C WT-650C 100 "A" Cation Inlet WT-303A U10A WT-300A 100 "B" Cation Inlet WT-303B U10B WT-300B 100 "C" Cation Inlet WT-303C U10C WT-300C 100 "C" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "B" Cation Outlet FI-9354B WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 402A 600 "B" Anion Inlet WT 403A U14A WT 402A 600 "B" Anion Inlet WT 403B U14C WT 402C 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "C" Anion Inlet WT 403C U14C WT 413A 15400 "B" Anion 2/3 FI-9363A WT Sample Panel WT 413B 15100 "C" A	F-233C Fourth Stage "B" Membrane Outlet	WT-673C	U2 TH 8'/U17C	WT-650C	100
"C" Reverse Osmosis Reject WT-660C U2 TH 8//U17C WT-650C 100 "A" Cation Inlet WT-303A U10A WT-300A 100 "B" Cation Inlet WT-303B U10B WT-300C 100 "C" Cation Inlet WT-303C U10C WT-300C 100 "C" Cation Inlet WT-303C U10C WT-300C 100 "A" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "B" Cation Outlet FI-9354B WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet WT 403A U14A WT 402A 600 "A" Anion Inlet WT 403B U14B WT 402A 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "C" Anion Inlet WT 403C U14C WT 413A 15400 "B" Anion 2/3 FI-9363A WT Sample Panel WT 413A 15400 "B" Anion 2/3 FI-9363C WT Sample Panel WT 413C 16500 "C" Anion Outlet	"C" Reverse Osmosis Product	WT-662C	U2 TH 8'/U17C	WT-650C	100
"A" Cation Inlet WT-303A U10A WT-300A 100 "B" Cation Inlet WT-303B U10B WT-300B 100 "C" Cation Inlet WT-303C (U10C WT-300C 100 "C" Cation Inlet WT-303C (U10C WT-300C 100 "C" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "B" Cation Outlet FI-9354B WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 402A 600 "C" Cation Outlet WT 403A U14A WT 402A 600 "B" Anion Inlet WT 403B U14B WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402B 600 "C" Anion Inlet WT 403C WT Sample Panel WT 413A 15400 "B" Anion 2/3 FI-9363A <td>"C" Reverse Osmosis Reject</td> <td>WT-660C</td> <td>U2 TH 8'/U17C</td> <td>WT-650C</td> <td>100</td>	"C" Reverse Osmosis Reject	WT-660C	U2 TH 8'/U17C	WT-650C	100
"A" Cation Inlet WT-303A U10A WT-300A 100 "B" Cation Inlet WT-303B U10B WT-300B 100 "C" Cation Inlet WT-303G U10B WT-3030C 100 "A" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "B" Cation Outlet FI-9354B WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet WT 403A U14A WT 402A 600 "A" Anion Inlet WT 403B U14B WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402A 600 "C" Anion Inlet WT 403C U14C WT 413A 15400 "B" Anion 2/3 FI-9363A WT Sample Panel WT 413A 15400 "B" Anion Outlet FI-9369A WT Sample Panel WT 412A 14200 "B" Anion Outlet FI-9369A WT Sample Panel WT 412A 14200 "B" Anion O					
"B" Cation Inlet WT-303B U10B WT-300B 100 "C" Cation Inlet WT-303C 1 U10C WT-300C 100 "A" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "B" Cation Outlet FI-9354B WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet WT 403A U14A WT 402A 6600 "A" Anion Inlet WT 403B U14B WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402E 600 "C" Anion Inlet WT 403C U14C WT 413A 15400 "A" Anion 2/3 FI-9363A WT Sample Panel WT 413B 15100 "C" Anion 2/3 FI-9369A WT Sample Panel WT 413C 16500 "A" Anion Outlet FI-9369A WT Sample Panel WT 412A 14200 "B" Anion Outlet FI-9369B WT Sample Panel WT 412A 14200 "B" Anion Outlet	"A" Cation Inlet	WT-303A	U10A	WT-300A	100
"C" Cation Inlet WT-303C U10C WT-300C 160 "A" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "B" Cation Outlet FI-9354B WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354C WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet WT 402A 600 WT 312C 13000 "C" Anion Inlet WT 403A U14A WT 402A 600 "C" Anion Inlet WT 403C U14C WT 402E 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "C" Anion 2/3 FI-9363A WT Sample Panel WT 413A 15400 "A" Anion Outlet FI-9363A WT Sample Panel WT 413A 15400 "A" Anion Outlet FI-9369A WT Sample Panel WT 413C 16500 "A" Anion Outlet FI-9369A WT Sample Panel WT 412A 14200	"B" Cation Inlet	WT-303B	U10B	WT-300B	100
"A" Cation Outlet FI-9354A WT Sample Panel WT 312A 16000 "B" Cation Outlet FI-9354B WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet WT 403A U14A WT 402A 600 "A" Anion Inlet WT 403B U14B WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "A" Anion 2/3 FI-9363A WT Sample Panel WT 413A 15400 "B" Anion 2/3 FI-9363C WT Sample Panel WT 413C 16500 "C" Anion Outlet FI-9369A WT Sample Panel WT 412A 14200 "B" Anion Outlet FI-9369B WT Sample Panel WT 412A 14200 "B" Anion Outlet FI-9369C WT Sample Panel WT 412A 14200	"C" Cation Inlet	WT-303C	U10C	WT-300C	100
"B" Cation Outlet FI-9354B WT Sample Panel WT 312B 14500 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 "C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 Deaerator Outlet ⁴ WT 403A U14A WT 402A 600 "A" Anion Inlet WT 403B U14B WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "A" Anion 2/3 FI-9363A WT Sample Panel WT 413A 15400 "B" Anion 2/3 FI-9363C WT Sample Panel WT 413C 16500 "C" Anion Outlet FI-9369A WT Sample Panel WT 412A 14200 "A" Anion Outlet FI-9369A WT Sample Panel WT 412A 14200 "B" Anion Outlet FI-9369C WT Sample Panel WT 412A 14200 "B" Anion Outlet FI-9369C WT Sample Panel WT 512A 9200	"A" Cation Outlet	FI-9354A	WT Sample Panel	WT 312A	16000
"C" Cation Outlet FI-9354C WT Sample Panel WT 312C 13000 Deaerator Outlet ²	"B" Cation Outlet	FI-9354B	WT Sample Panel	WT 312B	14500
Deaerator Outlet ² WT 403A U14A WT 402A 600 "A" Anion Inlet WT 403B U14B WT 402B 600 "B" Anion Inlet WT 403B U14B WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "A" Anion 2/3 FI-9363A WT Sample Panel WT 413A 15400 "B" Anion 2/3 FI-9363B WT Sample Panel WT 413B 15100 "C" Anion Outlet FI-9363C WT Sample Panel WT 412A 14200 "A" Anion Outlet FI-9369A WT Sample Panel WT 412A 14200 "B" Anion Outlet FI-9369B WT Sample Panel WT 412A 14200 "B" Anion Outlet FI-9369C WT Sample Panel WT 412C 15300 "C" Anion Outlet FI-9378A WT Sample Panel WT 512A 9200 "A" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Out	"C" Cation Outlet	FI-9354C	WT Sample Panel	W1 312C	13000
Deaerator Outlet ² WT 403A U14A WT 402A 600 "A" Anion Inlet WT 403B U14B WT 402B 600 "B" Anion Inlet WT 403C U14B WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "A" Anion 2/3 FI-9363A WT Sample Panel WT 413A 15400 "B" Anion 2/3 FI-9363B WT Sample Panel WT 413B 15100 "C" Anion Outlet FI-9363C WT Sample Panel WT 413C 16500 "A" Anion Outlet FI-9369A WT Sample Panel WT 412A 14200 "A" Anion Outlet FI-9369B WT Sample Panel WT 412B 13900 "B" Anion Outlet FI-9369C WT Sample Panel WT 412C 15300 "C" Anion Outlet FI-9378A WT Sample Panel WT 412C 15300 "A" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512A 9200 "B" Mixed Bed Out					
"A" Anion Inlet WT 403A U14A WT 402A 600 "B" Anion Inlet WT 403B U14B WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "A" Anion Inlet WT 403C U14C WT 402B 600 "A" Anion Inlet WT 403C U14C WT 402C 600 "A" Anion 2/3 FI-9363A WT Sample Panel WT 413A 15400 "B" Anion 2/3 FI-9363B WT Sample Panel WT 413C 16500 "C" Anion 2/3 FI-9369A WT Sample Panel WT 412A 14200 "A" Anion Outlet FI-9369A WT Sample Panel WT 412A 14200 "A" Anion Outlet FI-9369B WT Sample Panel WT 412A 14200 "A" Anion Outlet FI-9369C WT Sample Panel WT 412C 15300 "C" Anion Outlet FI-9378A WT Sample Panel WT 412C 15300 "A" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512A 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 687 14000	Deaerator Outlet ²			11/02 4	600
"B" Anion Inlet WT 403B U14B WT 402B 600 "C" Anion Inlet WT 403C U14C WT 402C 600 "A" Anion 2/3 FI-9363A WT Sample Panel WT 413A 15400 "B" Anion 2/3 FI-9363B WT Sample Panel WT 413B 15100 "C" Anion 2/3 FI-9363C WT Sample Panel WT 413E 16500 "C" Anion 2/3 FI-9369A WT Sample Panel WT 412A 14200 "A" Anion Outlet FI-9369A WT Sample Panel WT 412B 13900 "A" Anion Outlet FI-9369B WT Sample Panel WT 412C 15300 "C" Anion Outlet FI-9369C WT Sample Panel WT 412C 15300 "C" Anion Outlet FI-9378A WT Sample Panel WT 512A 9200 "A" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 5687 14000 Water Treatment Reverse Osmosis Reject WT-688 U2 TH 8' Sample	"A" Anion Inlet	WT 403A	U14A	W 1 402A	600
"C" Anion Inlet WT 403C U14C WT 402C 000 "A" Anion 2/3 FI-9363A WT Sample Panel WT 413A 15400 "B" Anion 2/3 FI-9363B WT Sample Panel WT 413B 15100 "C" Anion 2/3 FI-9363C WT Sample Panel WT 413C 16500 "C" Anion 0utlet FI-9369A WT Sample Panel WT 412A 14200 "B" Anion Outlet FI-9369B WT Sample Panel WT 412B 13900 "C" Anion Outlet FI-9369C WT Sample Panel WT 412C 15300 "C" Anion Outlet FI-9378A WT Sample Panel WT 512A 9200 "A" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512A 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 687 14000 Water Treatment Reverse Osmosis Reject WT-688 U2 TH 8' Sample WT-687 14000 Neutralizing Tank Sample WT-58 WT Bench Sink WT-57 500	"B" Anion Inlet	WT 403B	U14B	W1402B	600
"A" Anion 2/3FI-9363AWT Sample PanelWT 413A15400"B" Anion 2/3FI-9363BWT Sample PanelWT 413B15100"C" Anion 2/3FI-9363CWT Sample PanelWT 413C16500"A" Anion OutletFI-9369AWT Sample PanelWT 412A14200"B" Anion OutletFI-9369BWT Sample PanelWT 412B13900"B" Anion OutletFI-9369CWT Sample PanelWT 412C15300"C" Anion OutletFI-9369CWT Sample PanelWT 412C15300"A" Mixed Bed OutletFI-9378AWT Sample PanelWT 512A9200"A" Mixed Bed OutletFI-9378BWT Sample PanelWT 512B9200"B" Mixed Bed OutletFI-9378BWT Sample PanelWT 512B9200"A" Mixed Bed OutletFI-9378BWT Sample PanelWT 512B9200"A" Mixed Bed OutletFI-9378BWT Sample PanelWT 512B9200"B" Mixed Bed OutletFI-9378BWT 588WT 577500	"C" Anion Inlet	WT 403C	U14C	W1402C	1000
"A" Anion 2/3PI-9363AWT Sample PanelWT 413B15100"B" Anion 2/3FI-9363BWT Sample PanelWT 413B15100"C" Anion 2/3FI-9363CWT Sample PanelWT 413C16500"A" Anion OutletFI-9369AWT Sample PanelWT 412A14200"B" Anion OutletFI-9369BWT Sample PanelWT 412B13900"C" Anion OutletFI-9369CWT Sample PanelWT 412C15300"C" Anion OutletFI-9369CWT Sample PanelWT 412C15300"C" Anion OutletFI-9378AWT Sample PanelWT 512A9200"A" Mixed Bed OutletFI-9378AWT Sample PanelWT 512B9200"B" Mixed Bed OutletFI-9378BWT 588WT 5768714000Panel"C" 58WT Bench SinkWT-57500		TT 02(2)	WT Sample Papel	WT 413A	15400
"B" Anion 2/3FI-9363DWT Sample PanelWT 413D10100"C" Anion 2/3FI-9363CWT Sample PanelWT 413C16500"A" Anion OutletFI-9369AWT Sample PanelWT 412A14200"B" Anion OutletFI-9369BWT Sample PanelWT 412B13900"C" Anion OutletFI-9369CWT Sample PanelWT 412C15300"C" Anion OutletFI-9378AWT Sample PanelWT 412C15300"A" Mixed Bed OutletFI-9378AWT Sample PanelWT 512A9200"B" Mixed Bed OutletFI-9378BWT Sample PanelWT 512B9200"B" Mixed Bed OutletFI-9378BWT Sample PanelWT 512B9200Water Treatment Reverse Osmosis RejectWT-688U2 TH 8' Sample PanelWT-68714000Neutralizing Tank SampleWT-58WT Bench SinkWT-57500	"A" Anion 2/3	FI-9303A	WT Sample Panel	WT 413B	15100
"C" Anion 273 FI-9369C WT Sample Panel WT 412A 14200 "A" Anion Outlet FI-9369B WT Sample Panel WT 412B 13900 "B" Anion Outlet FI-9369B WT Sample Panel WT 412B 13900 "C" Anion Outlet FI-9369C WT Sample Panel WT 412C 15300 "C" Anion Outlet FI-9378A WT Sample Panel WT 512A 9200 "A" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "Butter Treatment Reverse Osmosis Reject WT-688 U2 TH 8' Sample WT-687 14000 Panel WT-58 WT Bench Sink WT-57 500	"B" Anion 2/3	FI-9303D	WT Sample Panel	WT 413C	16500
"A" Anion OutletFI-9369AWT Sample PanelWT 412A14200"B" Anion OutletFI-9369BWT Sample PanelWT 412B13900"C" Anion OutletFI-9369CWT Sample PanelWT 412C15300"A" Mixed Bed OutletFI-9378AWT Sample PanelWT 512A9200"B" Mixed Bed OutletFI-9378BWT Sample PanelWT 512B9200"B" Mixed Bed OutletFI-9378BWT Sample PanelWT 512B9200"B" Mixed Bed OutletWT-688U2 TH 8' SampleWT-68714000Water Treatment Reverse Osmosis RejectWT-688U2 TH 8' SampleWT-68714000Neutralizing Tank SampleWT-58WT Bench SinkWT-57500	"C" Anion 2/3	F1-9505C	WI Dampie I and		
Anion Outlet FI-9369B WT Sample Panel WT 412B 13900 "B" Anion Outlet FI-9369B WT Sample Panel WT 412B 13900 "C" Anion Outlet FI-9369C WT Sample Panel WT 412C 15300 "A" Mixed Bed Outlet FI-9378A WT Sample Panel WT 512A 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "Buter Treatment Reverse Osmosis Reject WT-688 U2 TH 8' Sample WT-687 14000 Panel WT-58 WT Bench Sink WT-57 500		FI-0360A	WT Sample Panel	WT 412A	14200
B Anion Outlet T1-5552 T1 Semple Famel WT 412C 15300 "C" Anion Outlet FI-9369C WT Sample Panel WT 412C 15300 "A" Mixed Bed Outlet FI-9378A WT Sample Panel WT 512A 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 Water Treatment Reverse Osmosis Reject WT-688 U2 TH 8' Sample WT-687 14000 Neutralizing Tank Sample WT-58 WT Bench Sink WT-57 500	"A" Anion Outlet	FI-0360R	WT Sample Panel	WT 412B	13900
C Anion Outer Trade File WT Sample Panel WT 512A 9200 "A" Mixed Bed Outlet FI-9378A WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 Water Treatment Reverse Osmosis Reject WT-688 U2 TH 8' Sample WT-687 14000 Neutralizing Tank Sample WT-58 WT Bench Sink WT-57 500		FI-9369C	WT Sample Panel	WT 412C	15300
"A" Mixed Bed OutletFI-9378AWT Sample PanelWT 512A9200"B" Mixed Bed OutletFI-9378BWT Sample PanelWT 512B9200Water Treatment Reverse Osmosis RejectWT-688U2 TH 8' SampleWT-68714000Neutralizing Tank SampleWT-58WT Bench SinkWT-57500					
Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 "B" Mixed Bed Outlet FI-9378B WT Sample Panel WT 512B 9200 Water Treatment Reverse Osmosis Reject WT-688 U2 TH 8' Sample WT-687 14000 Neutralizing Tank Sample WT-58 WT Bench Sink WT-57 500	"A" Mixed Bed Outlet	FI-9378A	WT Sample Panel	WT 512A	9200
Water Treatment Reverse Osmosis Reject WT-688 U2 TH 8' Sample WT-687 14000 Neutralizing Tank Sample WT-58 WT Bench Sink WT-57 500	"R" Mixed Bed Outlet	FI-9378B	WT Sample Panel	WT 512B	9200
Water Treatment Reverse Osmosis RejectWT-688U2 TH 8' SampleWT-68714000PanelWT-58WT Bench SinkWT-57500	B Mixed Ded Oullet		* * *_ * *_ * *_		
Panel Neutralizing Tank Sample WT-58 WT Bench Sink WT-57 500	Water Treatment Reverse Osmosis Reject	WT-688	U2 TH 8' Sample	WT-687	14000
Neutralizing Tank Sample WT-58 WT Bench Sink WT-57 500	That is a second a second seco		Panel		
	Neutralizing Tank Sample	WT-58	WT Bench Sink	WT-57	500



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