

Oconee County Storm Water Management Program

IMPAIRED WATERS MONITORING & IMPLEMENTATION PLAN:

2019 Annual Evaluation

Impaired Waters

The following waters have been identified as impaired by the latest 305(b)/303(d) List of Waters & are the subject of this plan. In each case, the pollutant of concern is fecal coliform.

- Barber Creek
- Calls Creek
- McNutt Creek
- Middle Oconee River

Monitoring

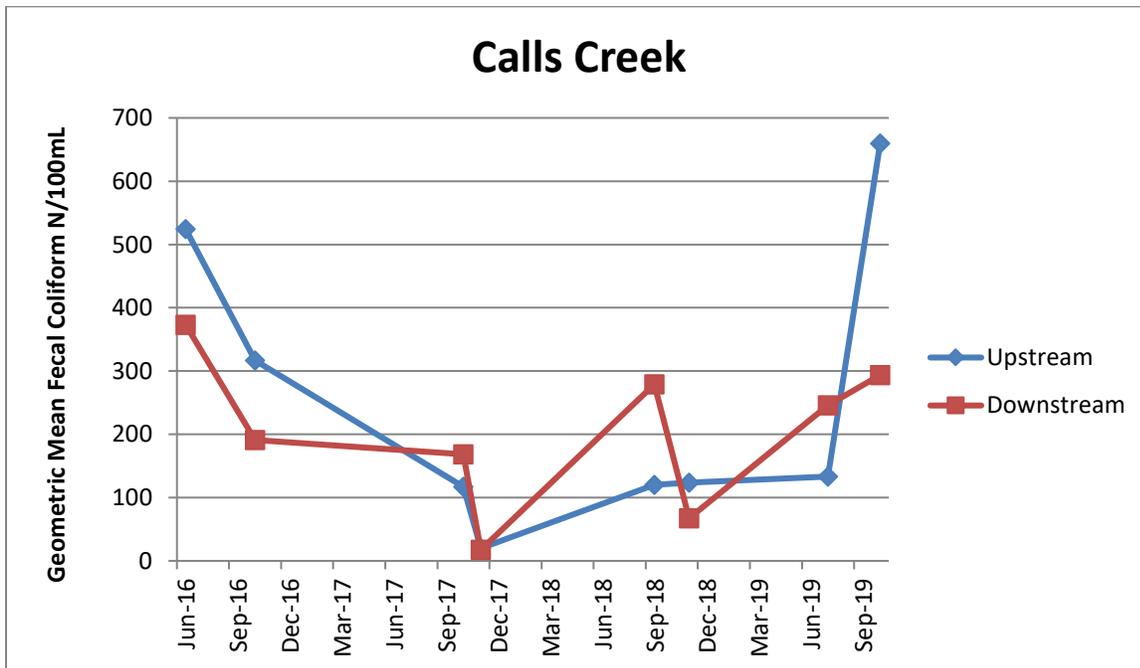
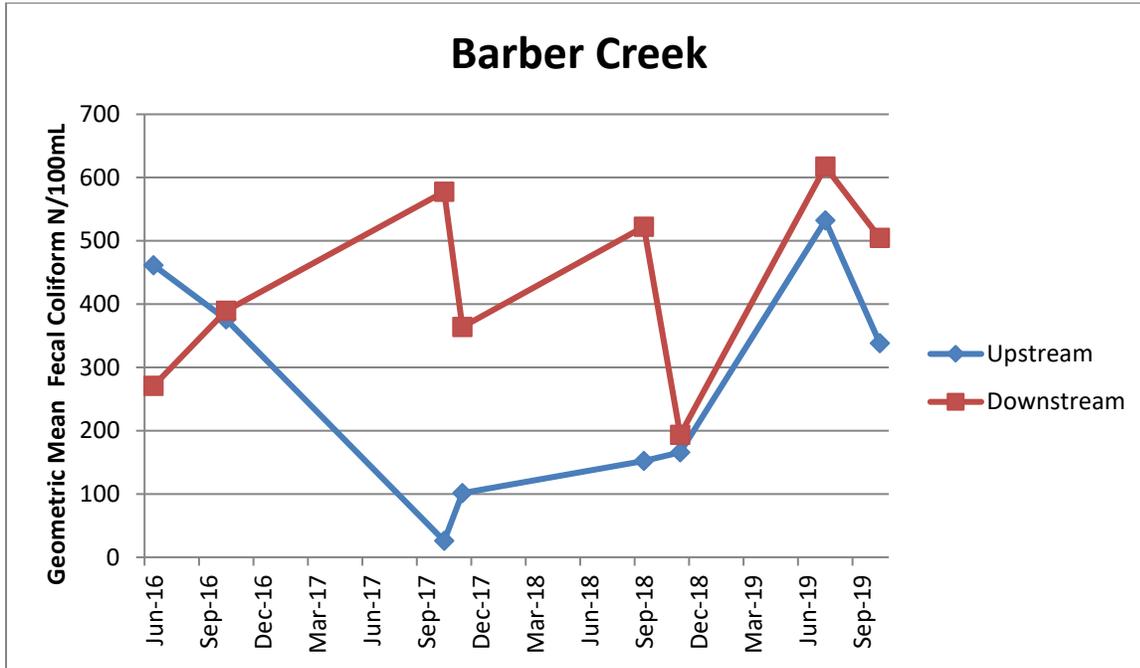
Oconee County Water Resources staff performed monitoring according to the approved plan:

- Upstream & downstream samples were collected from each of the impaired waters in order to calculate two geographic means for the year.
 - A minimum of four samples were collected (one week apart) from each sampling site during the months of July/August & October.
 - Laboratory analysis for fecal coliform was conducted & the geometric mean for each site was calculated. The results are shown in the table below:

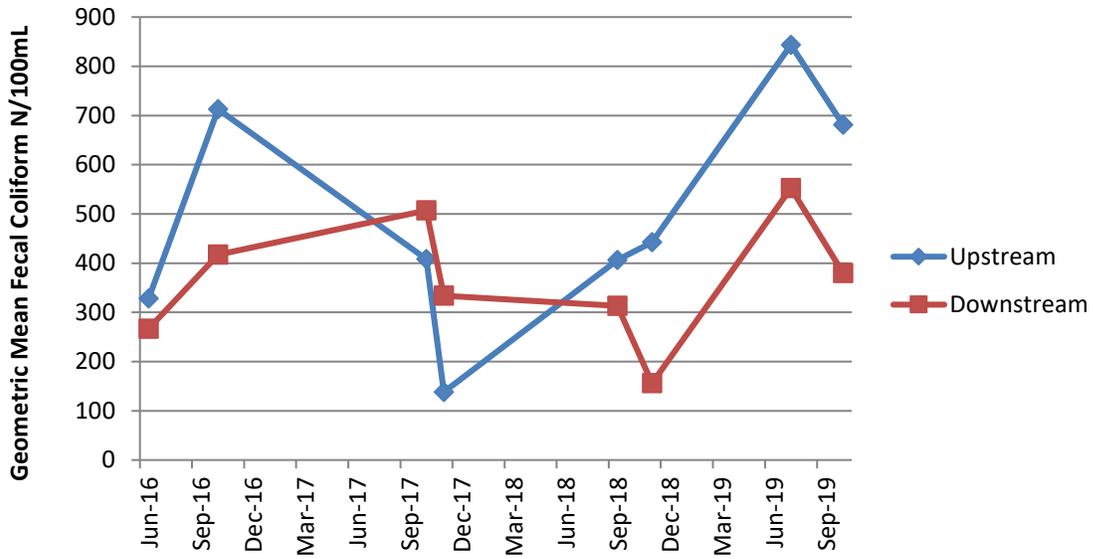
	July/August – upstream	July/August – downstream	October – upstream	October - downstream
Barber Creek	532.18	617.17	338.05	504.86
Calls Creek	133.32	245.71	659.67	293.50
McNutt Creek	843.42	552.36	680.69	380.02
Middle Oconee River	366.46	402.74	249.42	325.12

Trend in Water Quality

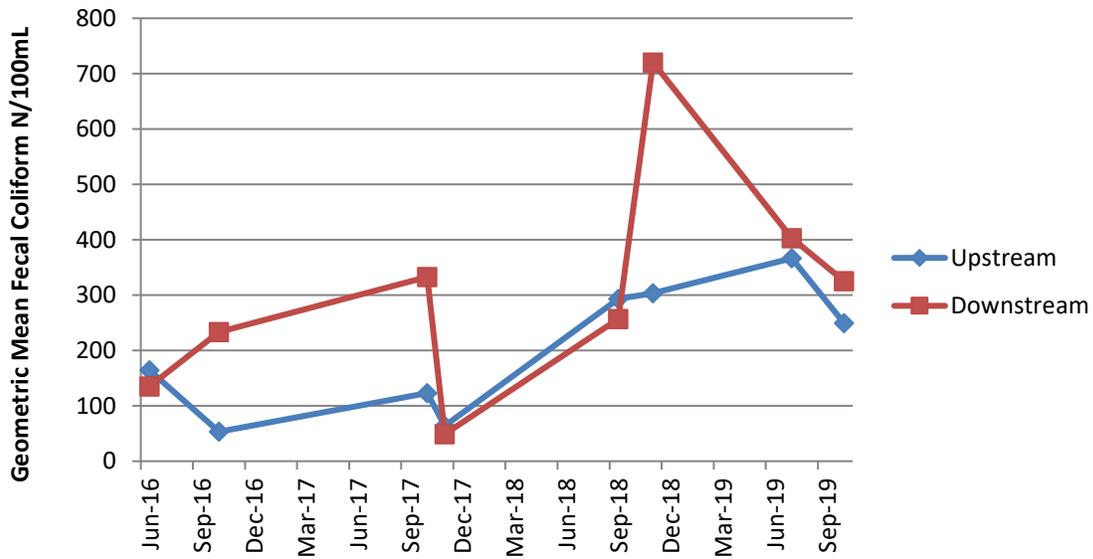
Following are line graphs comparing data results over time for each of the four impaired waters:



McNutt Creek



Middle Oconee River



Evaluation

BMPs included from the County's SWMP:

1. Public Education & Outreach BMP #2: website
2. Public Education & Outreach BMP #3: social media program
3. Public Education & Outreach BMP #4: distribution of educational material at events attended by Keep Oconee Beautiful
4. Public Involvement/Participation BMP #2: River cleanup event by Keep Oconee Beautiful
5. Illicit Discharge Detection & Elimination BMP #1: ordinance to prohibit illicit discharges to the storm drain system
6. Illicit Discharge Detection & Elimination BMP #3: dry weather screenings

Additional BMPs:

7. Pet waste stations at public parks
8. Inspection priority of areas upstream of impaired waters

Some of the waters addressed in this plan enter into Oconee County already impaired, but the downstream sampling does indicate a higher level of the pollutant in some cases. It is difficult to perform a trend analysis without several years of data; however, the BMPs for public education can be targeted more specifically to address the source of impairment (fecal coliform) in order to try to further reduce the pollutant. It is possible that failing septic tanks could be a contributor. In the future, proper care and maintenance of septic systems will be included in our public educational outreach. In addition, a local environmental group has expressed interest in working with the county to implement educational outreach programs to address stream pollutants, especially the issue of septic systems.

Tracking

The data collected by Water Resources during sampling is attached to this evaluation report.

Fecal Coliform-Membrane Filter
 Stormwater Testing
 Standard Methods
 19th Edition Method 9222D, P.9-60

Sample Date	Collected By	Sample Location/Time	Sample Identity	Sample Dilution %	Time Placed in Bath	Analysis Date & Time	Incubation Time	Colony Count	Fecal Coliform N/100 mL	Temp of Incubator °C	Analyst Initials
7/11/19		Lab/Blank	Blank 100 mL	100%	1 pm	7/12/19 2:24	25 1/2 hrs	0	MFC	444	RSB
	JJ JH	Barber/ 9:51	SW-1Up 1 mL	100%	↓	↓	↓	2	200		↓
		Barber/ ..	SW-1Up 5 mL	100%	↓	↓	↓	17	340	→ 270	
		Barber/ 8:40	SW-1Dn 1 mL	100%	↓	↓		1	100		
		Barber/ ..	SW-1Dn 5 mL	100%				26	520	→ 310	
		Calls/ 10:07	SW-2Up 1 mL	100%				1	100		
		Calls/ ..	SW-2Up 5 mL	100%				10	200	→ 150	
		Calls/ 8:06	SW-2Dn 1 mL	100%				6	600		
		Calls/ ..	SW-2Dn 5 mL	100%				24	480	→ 540	
		McNutt/ 9:40	SW-3Up 1 mL	100%				5	500		
		McNutt/ ..	SW-3Up 5 mL	100%				14	280	→ 320	
		McNutt/ 8:34	SW-3Dn 1 mL	100%				5	500		
		McNutt/ ..	SW-3Dn 5 mL	100%				21	420	→ 460	
		Middle/ 8:19	SW-4Up 1 mL	100%				2	200		
		Middle/ ..	SW-4Up 5 mL	100%				13	260	→ 230	
		Middle/ 8:01	SW-4Dn 1 mL	100%				4	400		
		Middle/ ..	SW-4Dn 5 mL	100%				20	400	→ 400	
		Lab/POS	INF 0.1 mL	100%				TNTC	Pos		

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7/18/19	SS	Lab/Blank	Blank 100 mL	100%	3:15	7/19/19	22 hrs	0	NEG	44.4	SS
						1:15	↓			↓	↓
		Barber/ 11:35	SW-1Up 1 mL	100%	↓	↓		20	2000		
		Barber/ ..	SW-1Up 5 mL	100%				97	1940	1970	
		Barber/ 10:54	SW-1Dn 1 mL	100%				26	2600		
		Barber/ ..	SW-1Dn 5 mL	100%				130	2600	2600	
		Calls/ 10:35	SW-2Up 1 mL	100%				1	100		
		Calls/ ..	SW-2Up 5 mL	100%				8	160	130	
		Calls/ 10:08	SW-2Dn 1 mL	100%				0	0		
		Calls/ ..	SW-2Dn 5 mL	100%				6	120	60	
		McNutt/ 11:21	SW-3Up 1 mL	100%				15	1500		
		McNutt/ ..	SW-3Up 5 mL	100%				49	980	1248	
		McNutt/ 10:50	SW-3Dn 1 mL	100%				11	1100		
		McNutt/ ..	SW-3Dn 5 mL	100%				184	3280	2190	
		Middle/ 10:16	SW-4Up 1 mL	100%				14	1400		
		Middle/ ..	SW-4Up 5 mL	100%				62	1240	1320	
		Middle/ 9:55	SW-4Dn 1 mL	100%				11	1100		
		Middle/ ..	SW-4Dn 5 mL	100%				71	1420	2260	
		Lab/POS	INF 0.1 mL	100%				NTC	POS		

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7/25/19	SH/JS	Lab/Blank	Blank 100 mL	100%	12:30	7/26/19	24hrs	0	NEG	44.5	(JS)
						12:50					
		Barber/ 9:04	SW-1Up 1 mL	100%				6	600		
		Barber/ ..	SW-1Up 5 mL	100%				28	560	580	
		Barber/ 8:17	SW-1Dn 1 mL	100%				3	300		
		Barber/ ..	SW-1Dn 5 mL	100%				25	500	400	
		Calls/ 9:18	SW-2Up 1 mL	100%				0	0		
		Calls/ ..	SW-2Up 5 mL	100%				6	120	60	
		Calls/ 7:48	SW-2Dn 1 mL	100%				5	500		
		Calls/ ..	SW-2Dn 5 mL	100%				20	400	450	
		McNutt/ 8:41	SW-3Up 1 mL	100%				8	800		
		McNutt/ ..	SW-3Up 5 mL	100%				56	1120	960	
		McNutt/ 7:56	SW-3Dn 1 mL	100%				5	500		
		McNutt/ ..	SW-3Dn 5 mL	100%				19	380	440	
		Middle/ 8:13	SW-4Up 1 mL	100%				4	400		
		Middle/ ..	SW-4Up 5 mL	100%				13	260	330	
		Middle/ 7:35	SW-4Dn 1 mL	100%				3	300		
		Middle/ ..	SW-4Dn 5 mL	100%				14	280	290	
		Lab/POS	INFO.1 mL	100%				N/A	Pos		

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8/1/19	JW/SJ	Lab/Blank	Blank 100 mL	100%	12:50p	8/2/19	24hs	0	NEG	44.5	(KAB)
↓	↓					1:12	↓			↓	↓
		Barber/ 9:41	SW-1Up 1 mL	100%		↓		3	300	260	
		Barber/	SW-1Up 5 mL	100%				11	220		
		Barber/ 8:40	SW-1Dn 1 mL	100%				5	500	450	
		Barber/	SW-1Dn 5 mL	100%				20	400		
		Calls/ 9:54	SW-2Up 1mL	100%				3	300	270	
		Calls/	SW-2Up 5mL	100%				12	240		
		Calls/ 8:06	SW-2Dn 1mL	100%				2	200	250	
		Calls/	SW-2Dn 5mL	100%				15	300		
		McNutt/ 9:25	SW-3Up 1mL	100%				12	1200	1090	
		McNutt/	SW-3Up 5mL	100%				49	980		
		McNutt/ 8:36	SW-3Dn 1mL	100%				2	200	210	
		McNutt/	SW-3Dn 5mL	100%				11	220		
		Middle/ 8:13	SW-4Up 1mL	100%				1	100	180	
		Middle/	SW-4Up 5mL	100%				13	260		
		Middle/ 7:49	SW-4Dn 1mL	100%				1	100	180	
		Middle/	SW-4Dn 5mL	100%				13	260		
		Lab/POS	INF 0.1mL	100%				TRAC	POS		

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10/3/19	RS/S	Lab/Blank	Blank 100 mL	100%	1:10p	10/4/19	24hs	0	NEG	44.5°C	RS/S
		Barber/ 9:57	SW-1Up 1 mL	100%		10/4/19		2	200		
		Barber/ ..	SW-1Up 5 mL	100%				8	160	180	
		Barber/ 10:33	SW-1Dn 1 mL	100%				2	200		
		Barber/ ..	SW-1Dn 5 mL	100%				12	240	220	
		Calls/ 9:41	SW-2Up 1 mL	100%				9	900		
		Calls/ ..	SW-2Up 5 mL	100%				36	720	810	
		Calls/ 9:14	SW-2Dn 1 mL	100%				3	300		
		Calls/ ..	SW-2Dn 5 mL	100%				10	200	250	
		McNutt/ 10:10	SW-3Up 1 mL	100%				2	200		
		McNutt/ ..	SW-3Up 5 mL	100%				25	500	350	
		McNutt/ 10:33	SW-3Dn 1 mL	100%				4	400		
		McNutt/ ..	SW-3Dn 5 mL	100%				19	380	390	
		Middle/ 9:23	SW-4Up 1 mL	100%				0	0		
		Middle/ ..	SW-4Up 5 mL	100%				13	260	130	
		Middle/ 8:59	SW-4Dn 1 mL	100%				1	100		
		Middle/ ..	SW-4Dn 5 mL	100%				5	100	100	
		Lab/POS	INF 0.1 mL	100%				TRIC	POS		

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10-10-19	EC/SJ	Lab/Blank	Blank 100 mL	100%	11:44	10-11-19	24 hrs	0	NEG	44.5	RSB
↓	↓	Barber/ 10:14	SW-1Up 1 mL	100%	↓	11:30	↓	1	100	↓	↓
		Barber/ "	SW-1Up 5 mL	100%		↓		12	240	170	
		Barber/ 9:29	SW-1Dn 1 mL	100%				5	500		
		Barber/ "	SW-1Dn 5 mL	100%				26	520	510	
		Calls/ 10:34	SW-2Up 1 mL	100%				6	600		
		Calls/ "	SW-2Up 5 mL	100%				31	620	610	
		Calls/ 9:05	SW-2Dn 1 mL	100%				1	100		
		Calls/ "	SW-2Dn 5 mL	100%				4	60	80	
		McNutt/ 9:51	SW-3Up 1 mL	100%				6	600		
		McNutt/ "	SW-3Up 5 mL	100%				34	680	640	
		McNutt/ 9:29	SW-3Dn 1 mL	100%				2	200		
		McNutt/ "	SW-3Dn 5 mL	100%				17	340	270	
		Middle/ 9:13	SW-4Up 1 mL	100%				1	100	170	
		Middle/ "	SW-4Up 5 mL	100%				12	240		
		Middle/ 8:46	SW-4Dn 1 mL	100%				0	0	170	
		Middle/ "	SW-4Dn 5 mL	100%				17	340		
		Lab/POS	INF 0.1 mL	100%				TRFC	POS		

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10/7/19		Lab/Blank	Blank 100 mL	100%	1:15	12:40	23 1/2 hrs	0	NEG		RSP
↓	EC/JS	Barber/ 10:32	SW-1Up 1 mL	100%	↓	10/18/19	↓	3	300		↓
		Barber/ "	SW-1Up 5 mL	100%		↓		28	560	→ 430	
		Barber/ 10:02	SW-1Dn 1 mL	100%				5	500		
		Barber/ "	SW-1Dn 5 mL	100%				33	660	→ 580	
		Calls/ 11:22	SW-2Up 1 mL	100%				4	400		
		Calls/ "	SW-2Up 5 mL	100%				24	480	→ 440	
		Calls/ 9:34	SW-2Dn 1 mL	100%				3	300		
		Calls/ "	SW-2Dn 5 mL	100%				10	200	→ 250	
		McNutt/ 10:23	SW-3Up 1 mL	100%				5	500		
		McNutt/ "	SW-3Up 5 mL	100%				26	520	→ 510	
		McNutt/ 10:00	SW-3Dn 1 mL	100%				5	500		
		McNutt/ "	SW-3Dn 5 mL	100%				31	620	→ 560	
		Middle/ 9:42	SW-4Up 1 mL	100%				3	300		
		Middle/ "	SW-4Up 5 mL	100%				11	220	→ 260	
		Middle/ 9:16	SW-4Dn 1 mL	100%				6	600		
		Middle/ "	SW-4Dn 5 mL	100%				34	680	→ 640	
		Lab/POS	INFO.1 mL	100%				TRC	POS		

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10/24/19	EC/MWK	Lab/Blank	Blank 100 mL	100%	12:45	10/25/19	24hs	0	NEG	44.5	RSB
↓	↓				↓	12:45	↓				↓
		Barber/ 9:58	SW-1Up 1 mL	100%	9:58			9	900		
		Barber/ ..	SW-1Up 5 mL	100%				16	320	→ 610	
		Barber/ 9:23	SW-1Dn 1 mL	100%				8	800		
		Barber/ ..	SW-1Dn 5 mL	100%				20	700	→ 600	
		Calls/ 10:15	SW-2Up 1 mL	100%				2	200		
		Calls/ ..	SW-2Up 5 mL	100%				24	480	→ 340	
		Calls/ 8:55	SW-2Dn 1 mL	100%				1	100		
		Calls/ ..	SW-2Dn 5 mL	100%				13	260	→ 180	
		McNutt/ 9:45	SW-3Up 1 mL	100%				10	1000		
		McNutt/ ..	SW-3Up 5 mL	100%				32	640	→ 820	
		McNutt/ 9:21	SW-3Dn 1 mL	100%				6	0		
		McNutt/ ..	SW-3Dn 5 mL	100%				14	280	→ 140	
		Middle/ 9:05	SW-4Up 1 mL	100%				2	200		
		Middle/ ..	SW-4Up 5 mL	100%				5	100	→ 150	
		Middle/ 8:35	SW-4Dn 1 mL	100%				1	100		
		Middle/ ..	SW-4Dn 5 mL	100%				16	320	→ 210	
		Lab/POS	INF 0.1 mL	100%				TNTC	POS		

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Sample Date	Collected By	Sample Location/Time	Sample Identity	Sample Dilution %	Time Placed in Bath	Analysis Date & Time	Incubation Time	Colony Count	Fecal Coliform N/100 mL	Temp of Incubator °C	Analyst Initials
10/31/19	EC/JJ	Lab/Blank	Blank 100 mL	100%	3pm	11/01/19	24hrs	0	NEG	44.5	ESB
		Barber/ 10:13	SW-1Up 1 mL	100%	↓	3pm	↓	5	500	↓	↓
		Barber/ ..	SW-1Up 5 mL	100%		↓		30	600 → 550		
		Barber/ 9:20	SW-1Dn 1 mL	100%				7	700		
		Barber/ ..	SW-1Dn 5 mL	100%				49	980 → 840		
		Calls/ 10:30	SW-2Up 1 mL	100%				18	1800		
		Calls/ ..	SW-2Up 5 mL	100%				29	1580 → 1690		
		Calls/ 8:55	SW-2Dn 1 mL	100%				25	2500		
		Calls/ ..	SW-2Dn 5 mL	100%				117	2340 → 2420		
		McNutt/ 9:59	SW-3Up 1 mL	100%				17	1700		
		McNutt/ ..	SW-3Up 5 mL	100%				71	1420 → 1560		
		McNutt/ 9:18	SW-3Dn 1 mL	100%				10	1000		
		McNutt/ ..	SW-3Dn 5 mL	100%				46	920 → 960		
		Middle/ 9:04	SW-4Up 1 mL	100%				13	1300		
		Middle/ ..	SW-4Up 5 mL	100%				47	940 → 1120		
		Middle/ 8:36	SW-4Dn 1 mL	100%				17	1700		
		Middle/ ..	SW-4Dn 5 mL	100%				74	1480 → 1590		
		Lab/POS	INF 0.1 mL	100%				TNTC	POS		