

The Dalles Dam Fishway Status Report

Date: 9/22/2014
 Inspection Period: 9/14/2014 to 9/20/2014

THE DALLES DAM



**US Army Corps
 of Engineers**
 Portland District

The Dalles Project-Fisheries
 P.O. Box 564
 The Dalles, OR 97058-9998
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Fishways are inspected twice daily plus one SCADA inspection

The Dalles Dam	Inspections Out of Criteria	Criteria Limit	Total Number of Inspections: 21		Temperature: 68.1 F
			Comments		Secchi: > 5.1 feet
NORTH FISHWAY					
Exit differential	0	≤ 0.5'			
Count station differential	0	≤ 0.3'			
Weir crest depth	0	1.0' ± 0.1'			
Entrance differential	0	1.0' - 2.0'	Average	1.4	
Entrance weir N1	0	depth (≥ 8')	Average	9.4	
Entrance weir N2	0	Closed			
PUD Intake differential	0	≤ 0.5'			
EAST FISHWAY					
Exit differential	0	≤ 0.5'			
Removable weirs 154-157	0	Per forebay	Auto adjusts 1' increments.		
Weir 158-159 differential	0	1.0' ± 0.1'			
Count station differential	0	≤ 0.3'	Window cleaned as needed.		
Weir crest depth	0	1.0' ± 0.1'			
Junction pool weir JP6	0	depth (≥ 7')	Average	11.4	Manually adjusted as needed.
East entrance differential	0	1.0' - 2.0'	Average	1.5	
Entrance weir E1	0	No criteria	Average	9.7	Manually adjusted as needed.
Entrance weir E2	0	depth (≥ 8')	Average	12.9	
Entrance weir E3	0	depth (≥ 8')	Average	13.6	
Collection channel velocity	0	1.5 - 4 fps	Average	2.3	
Transportation channel velocity	0	1.5 - 4 fps	Average	2.2	
North channel velocity	0	1.5 - 4 fps	Average	2.4	
South channel velocity	0	1.5 - 4 fps	Average	3.1	
West entrance differential	0	1.0' - 2.0'	Average	1.5	
Entrance weir W1	0	depth (≥ 8')	Average	11.4	
Entrance weir W2	0	depth (≥ 8')	Average	8.6	
Entrance weir W3	0	No criteria	Closed		
South entrance differential	0	1.0' - 2.0'	Average	1.5	
Entrance weir S1	0	depth (≥ 8')	Average	8.8	
Entrance weir S2	0	depth (≥ 8')	Average	8.9	
JUVENILE PASSAGE					
Sluicgate operation	0	1, 8, 18			
Turbine trashrack drawdown	0	<1.5', wkly	Range	0.0 - 0.3	
Spill volume	0	40% ± 1%	Average	14.9 KCFS	Spilling for increased north ladder attraction.
Spill Pattern	0	per FPP	Spillbay	1, 7 & 8	Spill 12hrs./day 0400-1600 for 7 days start 9/9 end 9/15.
Turbine Unit Priority	1	per FPP	Operations notified and corrected.		
Turbine 1% Efficiency	0	per FPP			

OTHER ISSUES:**Birds/Sea lions:**

Bird observation data collected once daily. Refer to Avian Zone Map.

Operations:

Entrance weir E3 in manual due to sticking. E1 and E2 set in auto. All maintaining criteria depth.

Entrance weir W1 in manual also due to sticking. Maintaining depth criteria.

Calibration completed 9/15. All in criteria. Gatewell drawdown check 9/15; differences between forebay and gatewells <1.5' and in criteria.

The Dalles north ladder, east ladder, and ice/trash sluiceway in service in accordance with the Fish Passage Plan.

Current Outages:

T8 (MU15 & MU16) de-rated to single unit full load ops through 9/14/2017.

MU10 OOS 0001 9/8/2014 to 1700 10/9/2014 for Annual.

MU9 OOS 0001 9/8/2014 to 1700 10/9/2014 for Annual.

Maintenance:

North fishway pump motor replacement underway. Will be operational for Jan 2015 dewatering.

Parts on order for install of equalizing valve on PUD intake bulkhead. Modification November 2014.

Entrance weirs E3 and W1 sticking in guide. To be repaired December 2014 during fishway outage. Does not affect criteria operation.

Permanent boom purchase underway for protecting east fishway from upstream oil spills. In contracting. FPOM approved. Install date to be determined.

Charter approved for repair of north fishway rock walls. PM to be assigned. Date to be determined.

Long term repair plans funding dependent; Upgrade east exit weirs 154-157, awaiting PM assignment to stabilize north ladder rock walls, remove collection channel diffusers, replace all entrance weir wheels with plastic composite wheels and repair/modify all east fishway dewatering pumps.

Fish related but non-fish funded items; spillway evaluation, spillway crane rehab, spillgate 9 wire rope replacement, HDC update fish unit reliability assessment, planning upgrade fish unit breakers and fish unit transformer replacement.

All spillway items on Critical Infrastructure list and Unfunded Requirement list.

New weir 158 fabrication near complete.

Studies:

EFL Backup. Plans/Specs underway for 10' hole through dam, under roadway and into AWS conduit at junction pool. Construction winter '15/'16.

With recent fish unit failure there was ~9 hour period of 1 fish turbine operation, which resulted in substantial decrease in east passage. This raises concerns for the east fishway backup water supply 1400cfs design. A test for passage viability is being proposed to FPOM for this fall.

PUD 'freedom' second turbine proposal. No new developments.

Spill Attraction - Record fall Chinook runs expected in 2014. Concern for overcrowding in east fish ladder. ERDC model trip completed. Adult attraction spill test started Sept. 9 through Sept. 15. Field observations started Sept. 1 to monitor possible passage changes. The purpose of this test to determine if attraction spill can provide more passage to the north fish ladder. Cost vs. benefit analysis afterwards.

Spillgate Repair - ERDC model confirmed spill gate 9 repair as most beneficial over spill gates 10 and 11. FPOM approved new priority.

Research/Contractors:

PSMFC PIT tag monitoring continues at count stations.

Dam Angling: Total 2,102 pikeminnow removed.

Normandeau fish counters at north and east count stations 16 hours/day 4/1-10/30. Investigating visibility improvements for video at north count station.

Zebra mussel monitoring with plankton samples ongoing. Samples provided to PSU for analysis.

University of Idaho maintaining antennas and continuing downloads. Plan to install two additional antennas upstream and down stream of navlock for winter steelhead monitoring.

Approved by: Ron Twiner

Operation Project Manager The Dalles Dam

DART The Dalles Adult Ladders Daily Usage with Spill Percent and Outflow

Date	Chinook				Jack Chinook				Steelhead				Steelhead Wild				Sockeye				Coho				Jack Coho				Lamprey				Spill Pct [Right]	Outflow (kcfs)	
	Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder								
	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#					
9/14	91.9	20209	8.1	1780	89.0	2312	11.0	286	80.8	5902	19.2	1398	81.6	1973	18.4	445	100	1	0	0	85.7	9846	14.3	1639	89.4	542	10.6	64	94.6	35	5.4	2	9.7	81.5	
9/15	92.4	18166	7.6	1502	93.2	3641	6.8	264	82.8	4685	17.2	976	83.1	1457	16.9	296		0		0	80.2	6536	19.8	1612	85.7	586	14.3	98	73.1	38	26.9	14	8.8	86.7	
9/16	96.3	17941	3.7	682	95.3	2888	4.7	144	95.3	3831	4.7	190	95.5	1279	4.5	60		0		0	91.1	7522	8.9	739	92.3	215	7.7	18	80.8	42	19.2	10	0.0	84.6	
9/17	98.0	18893	2.0	392	93.7	1806	6.3	122	93.4	4011	6.6	282	94.6	1267	5.4	73		0		0	88.1	9116	11.9	1228	77.8	186	22.2	53	69.8	30	30.2	13	0.0	93.7	
9/18	97.1	12227	2.9	364	97.0	2717	3.0	85	96.3	4647	3.7	178	96.5	1447	3.5	53		0		0	94.3	8370	5.7	502	97.7	216	2.3	5	72.2	26	27.8	10	0.0	85.0	
9/19	94.3	11045	5.7	670	89.1	1939	10.9	238	94.2	4052	5.8	249	92.8	1136	7.2	88		0		0	92.3	6682	7.7	557	94.8	361	5.2	20	82.1	32	17.9	7	0.0	85.0	
9/20	94.1	14833	5.9	937	96.2	4337	3.8	170	91.5	4696	8.5	435	90.4	1406	9.6	149		0		0	84.1	4759	15.9	899	82.9	360	17.1	74	84.8	28	15.2	5	0.0	74.1	
Date	Chinook				Jack Chinook				Steelhead				Steelhead Wild				Sockeye				Coho				Jack Coho				Lamprey				Spill Pct	Outflow	
YTD	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct	Left Ladder Pct	Right Ladder Pct			
	94.7	5.3	93.8	6.2	89.6	10.4	89.5	10.5	100.0	0.0	88.0	12.0	88.1	11.9	79.1	20.9																			

1. The species passage percent is not calculated for either ladder on a day, if either the Right Ladder or Left Ladder species count is: negative or null for the day.
2. Ladder orientations reference the side of the river when facing downstream.
3. Data Provided Courtesy of U.S. Army Corps of Engineers



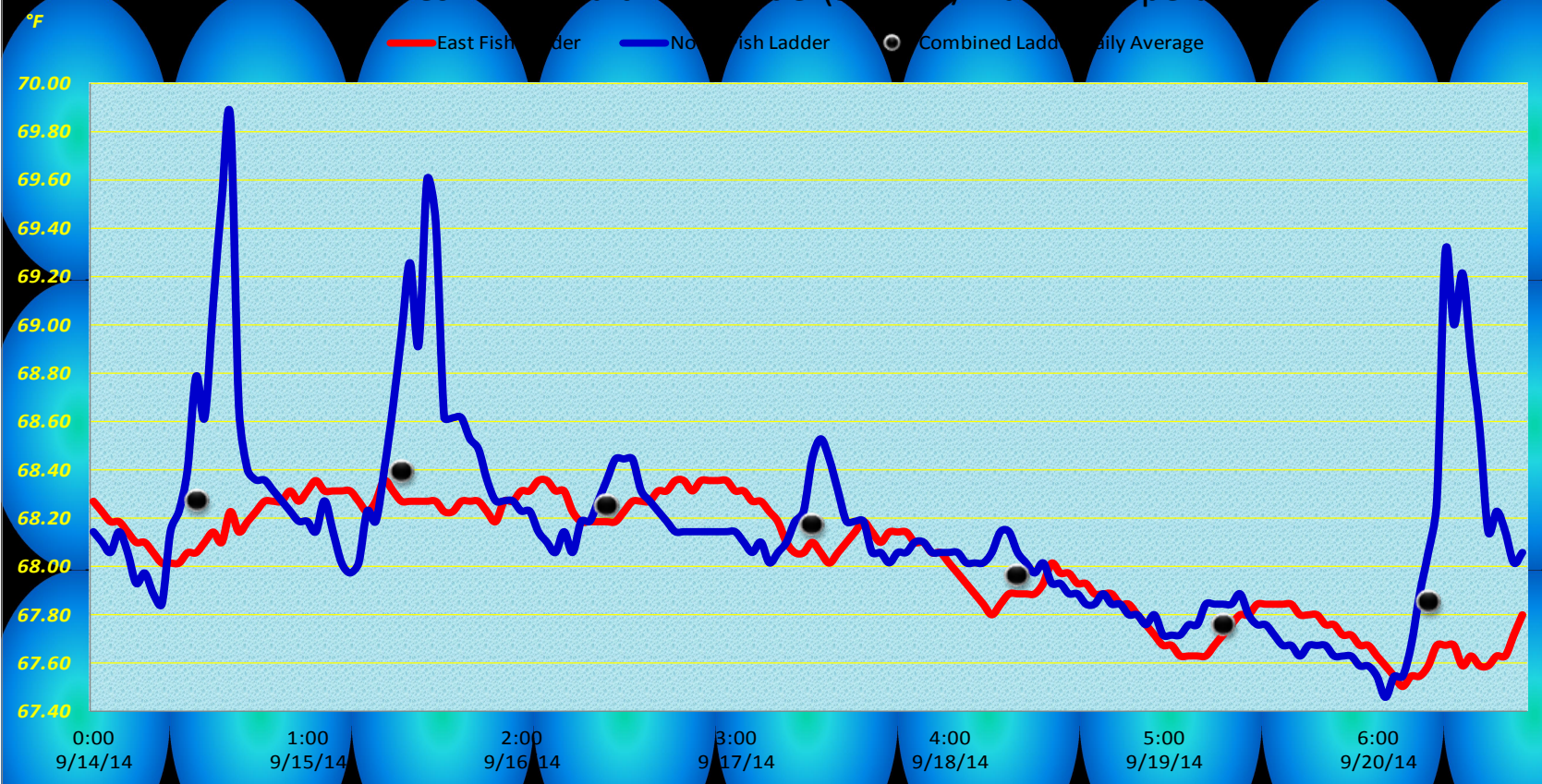
Avian lines in yellow, zones in red.

2014 Piscivorous Bird Counts

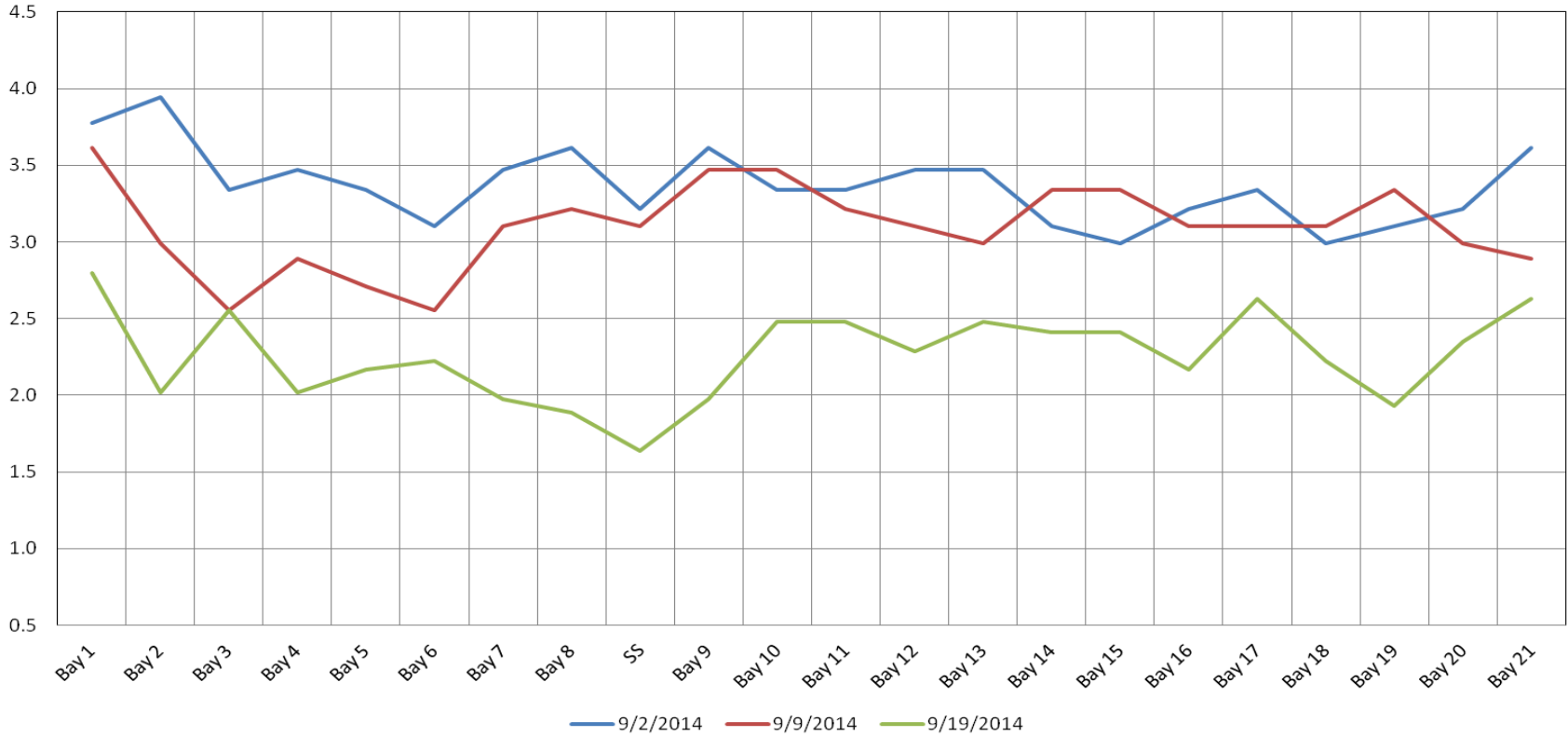
F=foraging, NF=non-foraging

Date	Session	Time (24 hr)	Zone	Gull		Cormorant		Caspian tern		Other		Total birds in	Observer	Notes
				F	NF	F	NF	F	NF	F	NF			
9/14/14	1	15:44	FB	0	0	0	12	0	0	0	0	12	EK	
		13:40	PH1	0	1	1	32	0	0	0	0	34		
		13:54	PH2	0	0	0	0	0	0	0	0	0		
		15:51	SW1	0	0	0	0	0	0	0	0	0		
		13:58	SW2	0	0	0	1	0	0	0	0	1		
		14:02	SW3	0	0	0	11	0	0	0	0	11		
		14:03	SW4	7	21	0	8	0	0	0	0	36		
9/15/14	1	10:14	FB	0	2	2	105	0	0	0	1	110	jwr	osprey
		10:35	PH1	0	0	1	1	0	0	0	0	2		
		10:41	PH2	0	0	0	0	0	0	0	0	0		
		10:16	SW1	0	0	0	0	0	0	0	0	0		
		10:21	SW2	0	0	0	0	0	0	0	0	0		
		10:22	SW3	0	5	1	6	0	0	0	0	12		
		10:24	SW4	0	6	0	5	0	0	0	0	11		
9/16/14	1	13:18	FB	0	0	0	18	0	0	0	0	18	jwr	osprey
		12:28	PH1	0	0	0	12	0	0	0	1	13		
		12:35	PH2	0	0	0	0	0	0	0	0	0		
		13:17	SW1	0	0	0	0	0	0	0	0	0		
		12:40	SW2	0	0	0	0	0	0	0	0	0		
		13:10	SW3	0	6	1	17	0	0	0	0	24		
		13:14	SW4	0	10	0	27	0	0	0	0	37		
9/17/14	1	10:06	FB	0	0	0	93	0	0	0	0	93	jwr	osprey
		9:28	PH1	0	0	0	2	0	0	0	1	3		
		9:34	PH2	0	0	0	0	0	0	0	0	0		
		10:04	SW1	0	0	0	0	0	0	0	0	0		
		9:37	SW2	0	0	1	0	0	0	0	0	1		
		9:56	SW3	0	0	0	18	0	0	0	0	18		
		9:58	SW4	0	15	0	1	0	0	0	0	16		
9/18/14	1	15:10	FB	0	0	0	2	0	0	0	0	2	PSK	
		15:40	PH1	0	0	0	15	0	0	0	0	15		
		15:49	PH2	0	0	0	0	0	0	0	0	0		
		15:06	SW1	0	0	0	0	0	0	0	0	0		
		15:51	SW2	0	0	1	0	0	0	0	0	1		
		14:53	SW3	0	0	1	0	0	0	0	0	1		
		14:52	SW4	0	0	0	88	0	0	0	0	88		
9/19/14	1	10:36	FB	0	1	2	54	0	0	0	0	57	jwr	
		10:12	PH1	0	0	0	0	0	0	0	0	0		
		10:19	PH2	0	0	0	0	0	0	0	0	0		
		10:32	SW1	0	0	0	0	0	0	0	0	0		
		10:25	SW2	0	0	0	0	0	0	0	0	0		
		10:26	SW3	0	3	0	28	0	0	0	0	31		
		10:30	SW4	0	22	0	3	0	0	0	0	25		
9/20/14	1	9:52	FB	0	0	0	77	0	0	0	0	77	PSK	roosting on north side electrical towers other = great blue heron
		8:35	PH1	0	0	0	3	0	0	1	0	4		
		8:49	PH2	0	0	0	0	0	0	0	0	0		
		10:07	SW1	0	0	0	0	0	0	0	0	0		
		8:54	SW2	0	0	0	0	0	0	0	0	0		
		10:17	SW3	0	0	0	13	0	0	0	0	13		
		10:21	SW4	0	16	0	3	0	0	0	0	19		
													resting on rocks resting on rocks	

Temperature of Fish Ladders



The Dalles Dam Collection Channel Velocities (In Criteria 1.5 - 4.0 fps)



Tailwater		Secchi:	
	68.3		5.0
	68.4		5.0
	68.3		5.0
	68.2		5.0
	68.0		6.0
	67.8		5.0
	67.8		5.0
AVG:	68.1	AVG:	5.1

**The Dalles Dam Daily Readings and Averages for
Temperatures, Secchi, Entrances, and Spill**

= out of criteria

North Ladder			East Ladder												Spill KCFS
North Entrance		East Entrance						West Entrance			South Entrance				
Date:	Differential	N1 Depth	Differential	E1 Depth	E2 Depth	E3 Depth	JP 6	Differential	W1 Depth	W2 Depth	W3 Depth	Differential	S1 Depth	S2 Depth	
9/14/14			1.4	8.2	12.6	13.9		1.4	11.5	8.5	Closed	1.5	9.0	9.0	14.9
	1.3	9.4	1.4	8.1	12.6	14.0	11.0	1.4	11.5	8.6		1.4	9.0	9.0	
	1.4	9.4	1.4	8.2	12.5	14.1	11.1	1.5	11.6	8.4		1.4	9.1	9.1	
9/15/14			1.5	8.2	12.6	14.1		1.4	11.8	8.6		1.4	9.1	9.0	14.8
	1.3	9.5	1.4	8.2	12.5	14.1	11.1	1.5	11.6	8.4		1.5	9.1	9.0	
	1.5	9.2	1.5	8.1	12.4	14.0	11.0	1.5	11.6	8.4		1.5	8.9	8.9	
9/16/14			1.7	8.1	12.9	13.0		1.5	11.5	8.4		1.5	8.9	9.0	On seal
	1.3	9.3	1.6	8.9	13.0	13.3	11.3	1.4	11.6	8.6		1.6	8.4	8.4	
	1.3	9.3	1.6	10.0	13.0	13.7	11.7	1.5	12.1	8.5		1.6	8.5	8.5	
9/17/14			1.6	10.0	13.0	13.3		1.5	11.7	8.5		1.6	8.5	8.5	
	1.4	9.3	1.5	10.0	13.0	13.5	11.5	1.5	11.8	8.6		1.5	9.0	9.0	
	1.5	9.4	1.5	10.0	13.0	13.9	11.9	1.4	12.2	8.5		1.5	9.0	9.0	
9/18/14			1.5	10.1	13.0	13.5		1.4	11.8	8.5		1.4	8.9	9.1	
	1.4	9.3	1.5	10.2	13.1	14.0	12.0	1.6	11.4	8.5		1.5	9.1	9.1	
	1.3	9.4	1.5	10.1	13.0	13.9	11.9	1.6	11.2	8.4		1.4	9.0	9.0	
9/19/14			1.6	10.0	13.0	13.0		1.5	10.5	8.5	1.4	9.0	9.0		
	1.4	9.3	1.5	11.5	12.9	13.4	11.4	1.5	11.0	9.1	1.6	8.7	8.7		
	1.4	9.3	1.6	11.6	13.0	13.9	11.9	1.5	11.5	9.0	1.5	8.7	8.7		
9/20/14			1.5	11.5	12.9	13.0		1.5	10.5	9.0	1.6	8.6	8.6		
	1.2	9.5	1.5	11.6	13.0	12.8	10.8	1.6	10.3	8.9	1.6	8.6	8.6		
	1.4	9.4	1.6	11.5	13.0	12.4	10.4	1.5	10.1	9.0	1.5	8.7	8.7		
AVG:	1.4	9.4	1.5	9.7	12.9	13.6	11.4	1.5	11.4	8.6	Closed	1.5	8.8	8.9	14.9