



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SURFACE WATER FIELD SHEET
Watershed Monitoring Section

January 2016

STATION INFORMATION

Station Name (Random ID for Status): 25-LR-11023 Date: 6/8/17 (MM/DD/YYYY)
Waterbody Name: Imperial River (if known) All Times Are: (circle one) ETZ or CTZ
Daylight Savings Time Observed (mid Mar. - early Nov.)? Yes / No
Waterbody Type: Small Lake (≥ 4 and < 10 hectares) Large Lake (≥ 10 hectares)
(Circle One) (collect samples in middle of open water) (collect samples at selected location point)
Stream Canal
(collect samples in representative area) (collect samples in representative area)
Field Sheet Completed by: CC WQ Sample Collected by: RM

WATER CHARACTERISTICS

Total Water Depth: 1.0 (meters) Secchi Depth: 0.6 (meters) Stage: N/A (feet)
(Average of 2 measurements) (from SHADED side) (if applicable)
Stream/River/Canal Flow: N/A No Flow Flow within Banks
(Circle One) (waterbody not stream / river / canal) (please comment if avg. velocity is < 0.05 m/s)
Flow Above Banks
(For Status sites, DO NOT sample if flooded above banks.)
Water Level: (Circle One) Low Normal High
Water Sample Collection Device: Direct Grab with Sample Bottle Van Dorn # of grabs Dipper Other
(Circle One) Equipment ID (if applicable):

FIELD MEASUREMENTS

FIELD MEASUREMENTS		Meter ID# 5			Read by: CC	
Time (24 hr.)	Surface Depth Collected (meters)	Temperature (°C)	Specific Conductance (µmhos/cm)	D.O. (%)	D.O. (mg/L)	pH (SU)
1130	0.3	25.6	1242	58	4.8	7.2
Time (24 hr.)	Bottom Depth Collected (meters)	Temperature (°C)	Specific Conductance (µmhos/cm)	D.O. (%)	D.O. (mg/L)	pH (SU)
N/A						

PRESERVATION INFORMATION

☐ N/A (No samples collected; please state why in comments.)
Were all samples (including QA/QC blanks) properly preserved within 15 minutes of collection? (Yes) / No
1 vial sulfuric acid added to nutrients sample(s)? Yes / No Sulfuric acid info: (circle one) Chem ID / Lot # 7093010 / 04/03/18
1 vial nitric acid added to metals sample(s)? Yes / No Nitric acid info: (circle one) Chem ID / Lot # 6291010 / 10/17/17
pH of all acidified samples verified to be < 2 ? Yes / No SCI samples preserved with buffered formalin? Yes / No / NA
All water & sediment samples placed in wet ice ($\leq 6^{\circ}$ C)? Yes / No
(Please describe any variations to this preservation protocol in the comments section below.) Preserved By: RM

QA/QC SAMPLE INFORMATION

QA/QC Sample: N/A Field Blank Equipment Blank
(Circle One) (Field-cleaned) (Lab-cleaned)
Time: (24 hr.)
Equipment Used: Collected by:

Photos Taken? (Yes) / No / Not Due
(Required for all Status sites. Required annually for Trend sites.)

Fuel Powered Equipment Used? (e.g. boat motor) Yes No

Weather Conditions:

Personnel/Visitors On Site: CC, RM



25-LR-11023

25LR1705 25-LR-11023 IMPERIAL RIVER

Place QA/QC Label Here
(if applicable)



Z5-LR-11023

Z5LR1705 Z5-LR-11023 IMPERIAL RIVER

Date: 7/18/2017

Sampler: Ben Paswater

100 m: Latitude 26.34315
Longitude -81.77576

0 m: Latitude 26.34305
Longitude -81.77668

Substrates: Code key, draw proportionate habitat abundance. %

☐ Snags

☒ Roots/undercut banks few

☐ Leaf Packs (or mats)

☒ Aquatic Macrophytes 1.6

☒ ROCK 1.5

☐ Pools total # observed = 1
range expected = 1

Average width 10 m

Average depth 1 m

Velocity measured at 0 meter mark.

WQ & chemistry taken at 0 meter mark.

Habitat Smothering:
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

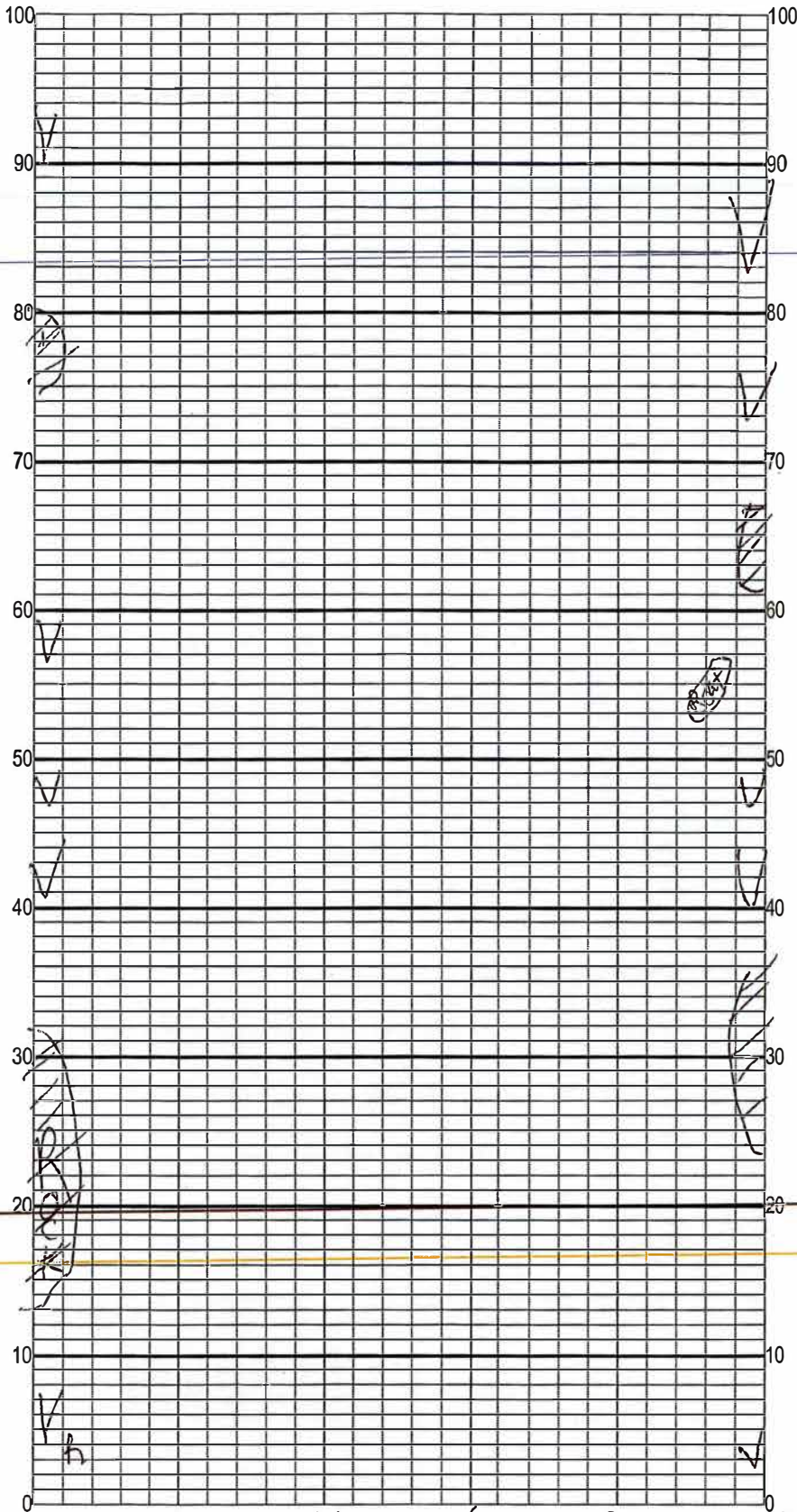
Plants observed / other notes:

R = 2

Rock = 38 1.6%

V = 40 1.5%

Left Bank



Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

SAMPLE ID Lee → ORG ID Z5-LR-11023
 COUNTY Lee STORE Z5LR1705 Z5-LR-11023 IMPERIAL RIVER
 DATE 7/18/17 TIME 10:00
 SITE NAME FTM
 FIELD ID/NAME FTM RECEIVING BODY OF WATER Gulf of Mexico

LATITUDE 26.34305 0 meter
 LONGITUDE -81.77668
 SAMPLING AGENCY DEP SROC

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>5</u> Silviculture <u>10</u> Field/Pasture <u>85</u> Agricultural <u>0</u> Residential <u>0</u> Commercial <u>0</u> Industry <u>0</u> Other (Specify) <u>0</u>								Landscape Development Intensity Index (LDI) <u>0</u>	
Local Watershed Erosion (select one): ☐ None ☒ Slight ☐ Moderate ☐ Heavy Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy						Typical Width (m) <u>10</u> Depth (m)/Velocity (m/sec) Transect <u>10</u> m wide			
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>3</u> Right Bank: <u>3</u>						Hydrologic Modification Score (per FT 3101) <u>0</u>			
High Water Mark: <u>1.2</u> + <u>1.0</u> = <u>1.2</u> (m) (above present water level) (present depth) (above bed)						Artificially Impounded: ☐ Yes ☒ No			
Artificially ☒ No ☐ Mostly recovered, more sinuous Channelized: ☐ Some recovery ☐ Recent, severe						Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%) ☐ Heavily Shaded ☒ Moderate Shaded (46-80%)			

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse			Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify):			Smothering of Substrates Sand Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Silt Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Algae Smothering: None ☒ Slight ☐ Moderate ☐ Severe ☐					
SUBSTRATE TYPE Assessment Tool: ☐ SCI ☒ RPS ☐ LVS ☐ LCI ☒ BioRecon <u>HA</u> INVERT PERI % # Times # Times Coverage Sampled Sampled			WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.3</u> <u>27.9</u> <u>7.1</u> <u>3.4</u> <u>43</u> <u>255</u> <u>1</u> <u>1.0</u> Mid: <u>0.5</u> <u>27.9</u> <u>7.1</u> <u>3.4</u> <u>43</u> <u>255</u> <u>1</u> <u>1.0</u> Bottom: <u>1.0</u> <u>27.9</u> <u>7.1</u> <u>3.4</u> <u>43</u> <u>255</u> <u>1</u> <u>1.0</u> Meter ID: <u>5</u>								
Woody Debris (Snags) <u>0</u> Undercut Banks / Roots <u>0</u> Leaf Packs or Mat <u>0</u> Aquatic Vegetation <u>1.5</u> Rock or Shell Rubble <u>1.6</u> Sand <u>0</u> Mud / Muck / Silt <u>0</u> Other <u>0</u> Other <u>0</u>			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐					
Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☐ Yes ☐ No Lot Number: Exp:			Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐								
Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: Exp:			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☒ Opaque ☐								
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☒ ☐ ☐ ☐ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☐ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐			System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☐								
AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.											
SAMPLING TEAM <u>Ben Phawater, Rosemary Murphy</u>			SIGNATURE: <u>Ben Phawater</u>			DATE: <u>7/18/2017</u>					

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: DEP SROC		ST		RECEIVING BODY OF WATER: Gulf of Mexico
REMARKS: EVAGW0121FTM	COUNTY: Lee	LC		FIELD ID/NAME:
		25-LR-11023		
		25LR1785 25-LR-11023 IMPERIAL RIVER		

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity 8	20 19 18 17 16	15 14 13 12 11	10 9 (8) 7 6	5 4 3 2 1
Substrate Availability 3	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 (3) 2 1
Water Velocity 17	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 (17) 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 16 ----- Primary Score 44	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 (16)	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
Artificial Channelization 15	20 19 18 17 16	(15) 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank 9 Left Bank 9	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 (9) LR	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 3 Left Bank 3	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities LR (3) 2 1
Riparian Zone Vegetation Quality Right Bank 5 Left Bank 5 ----- Secondary Score 49	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. LR (5) 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

TOTAL SCORE

93

Date: 7/18/2017	Analyst: Ben Jaswater Rosemary Murphy	Signature: 
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DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

County: <u>Lee</u>		Investigators: <u>Ben Prater, Rosemary Murphy</u>								
Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	
0	1	N			60	1	N		88	
	2					2				
	3					3				
	4					4				
	5			80		5				
	6					6				
	7					7				
	8					8				
	9					9				
10	1	N		93	70	1			0	
	2					2				
	3					3				
	4					4				
	5					5				
	6					6				
	7					7				
	8					8				
	9					9				
20	1				80	1			92	
	2					2				
	3					3				
	4			95		4				
	5					5				
	6					6				
	7					7				
	8					8				
	9					9				
30	1				90	1			58	
	2					2				
	3					3				
	4			78		4				
	5					5				
	6					6				
	7					7				
	8					8				
	9					9				
40	1				100	1			0	
	2					2				
	3					3				
	4			2		4				
	5					5				
	6					6				
	7					7				
	8					8				
	9					9				
50	1			84	Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.					
	2				Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.					
	3				Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.					
	4				Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.					
	5									
	6									
	7									
	8									
	9									

Secchi depth	1.0
Estimated?	no
# points ranked 4-6	0
total points assessed	96
% points ranked 4-6	0

Check accompanying data collected at same site/date.	
Algal mat sample	
Linear Veg Survey	✓
Habitat Assessment	
SCI/Biorecon	
Water sample	
RQ- 2017-05-08-11	

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD

Storet Number: ^ put sticker here

Date: 7/19/17

County: Lee

Waterbody: Imperial

Analyst: Ben Paswater

Signature: [Signature]

River

Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names. **bold is exotic invasive**

HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)	HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100			0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	
Alternanthera philoxeroides					✓	✓						Micranthemum glomeratum											
Bacopa caroliniana												Micranthemum umbrosum											
Bacopa monnieri												Myriophyllum aquaticum											
Bidens mitis												Najas guadelupensis											
Boehmeria cylindrica												Nuphar luteum											
Centella asiatica												Orontium aquaticum											
Ceratophyllum demersum												Panicum hemitomon											
Chara sp.												Panicum repens											
Cicuta maculata												Panicum rigidulum											
Cladium jamaicense												Pistia stratioides											
Colocasia esculenta						✓		✓				Polygonum glabra											
Commelina diffusa												Polygonum hydropiperoides											
Commelina virginica												Polygonum punctatum											
Crinum americanum												Pontedaria cordata											
Cyperus <i>obovatus</i>					✓	✓						Potamogeton illinoensis											
Diodia virginiana												Ruellia simplex											
Eichhornia crassipes												Sacciolepis striata											
Eleocharis (wispy viviparous)												Sagittaria kurziana											
Hydrilla verticillata												Sagittaria lancifolia											
Hydrocotyle sp.												Sagittaria latifolia											
Hygrophila polysperma												Salvinia minima											
Hymenachne amplexicaulis												Samolus parviflora											
Hymenocallis												Saururus cernuus											
Lachnanthes caroliniana												Sparganium americanum											
Landoltia punctata												Sphagneticola trilobata (Wedelia)		✓									
Lemna sp.												Typha sp.											
Limnophila sessiflora												Urochloa mutica (Brachiaria)											
Ludwigia leptocarpa												Vallisneria americana											
Ludwigia palustris												Zizania aquatica											
Ludwigia peruviana												Acrostichum aureum											
Ludwigia repens												Acrostichum lanceolatum		✓	✓	✓	✓	✓	✓	✓	✓	✓	
Luziola fluitans												Ammonia glabra										✓	
												Canna										✓	
												Rhizophora mangle		✓									
												Schoenoplectus californicus								✓	✓		
If no Dominant or Co-Dominant were selected, indicate with "X"																							
Indicate % cover macrophytes per section																							
0-5% Macrophyte Coverage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓													
>5 and ≤10% Macrophyte Coverage																							
>10 and ≤25% Macrophyte Coverage																							
>25 and ≤50% Macrophyte Coverage																							
> 50% Macrophyte Coverage																							

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

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		Z5-LR-11023		
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TOTAL SCORE

Date: 7/18/2017	Analyst: Ben Laswater Rosemary Murphy	Signature: 
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