September 2015

Second Bimonthly Report

Groundwater Monitoring Wells at the Luis Muñoz Marín International Airport (LMMIA)

CARIBBEAN AIRPORT FACILITIES, INC.

Ref.: 354-2015.09.01 2nd Bimonthly Report CAF Monitoring Wells Sampling Report FOIA

Prepared by: CHES Services Corp. d/b/a Fernando L. Rodríguez, P.E. & Associates 2015

EXECUTIVE SUMMARY

As part of the *Subsurface Investigation Plan ("SIP"),* developed on March 2012 to delineate the vertical and horizontal extent of subsurface contamination with jet fuel products in the soils and groundwater in the vicinity of the Caribbean Airport Facilities, Inc. (CAF) at the Luis Muñoz Marin International Airport (LMMIA), progressive reports are to be presented on a bimonthly basis to the U.S. EPA.

This report summarizes activities performed after the installation of monitoring wells at the Luis Muñoz Marin International Airport (LMMIA) mainly in areas operated by Caribbean Airport Facilities, Inc. (CAF). Second bimonthly report herein summarizes events documented until the week ending Sunday, August 30th, 2015.

SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

A **Subsurface Investigation** effort was performed to identify any evident, current and/or potential, environmental contamination at the Luis Muñoz Marin International Airport (LMMIA) property lot, operated by Caribbean Airport Facilities, Inc. (CAF). This study was performed as per the request of **Mrs. Jean Tirri,** representing CAF.

Environmental Professional's Signature

Date 9/1/15

Name: Fernando L. Rodríguez, P. E., SC

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Second Bimonthly Report

Groundwater Monitoring Wells at the Luis Muñoz Marin International Airport (LMMIA)

1.0 Daily Activities Reports

The following reports include relevant daily notes documented by the "CHES Services Corp. Team". Historical weather data has been included for up to two (2) days prior to the groundwater level readings event, as provided by Weather Underground [1].

Weather Station ID: ISANJUAN16

In addition, observed water levels reported by NOAA's Center for Operational Oceanographic Products and Services (CO-OPS) [2].

NOAA/NOS/CO-OPS Station - San Juan, PR - Station ID: 9755371

Established:	Mar 04, 1962
Time Meridian:	60° W
Present Installation:	Mar 25, 1989
Date Removed:	N/A
Water Level Max (ref MHHW):	2.77 Sep 18, 1989
Water Level Min (ref MLLW):	-1.09 Dec 20, 1968
Mean Range:	1.1 ft.
Diurnal Range:	1.58 ft.

1.0 DAILY ACTIVITIES REPORTS (CONT.)

The period encompassed within these passed two (2) months includes:

> The first week of July (week ending July 2, 2015) through the last week of August (week ending August 30, 2015).

Within this period, the **First Bimonthly Sampling** event was scheduled and performed, Daily Activities for both sampling days are herein included (July 21-22, 2015). Although, analyses from these samples were not performed due to a breach in QA/QC procedures brought on by a late arrival of a cooler carrying important Blank samples.

No weather nor airport operational delays arose during those two (2) days; all sampling and QA/QC procedures were strictly followed by all teams involved. But, the unfortunate event of the late arrival of one (1) cooler was notified by the Laboratory representative, backed up with temperature data at unacceptable levels, document included after sampling days' daily activities reports.

Furthermore, CAF's e-mail notifying the U.S. EPA on July 28, 2015 of this event is also attached after sampling days' daily activities reports. If considered necessary, the sampling event could be replaced by one to be performed at the end of the scheduled sampling events.

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater Levels Reading Event (Weekly for the first three months)		
Address:	LMMIA	**Date:**	July 2, 2015

Phone:	787-751-7810	**CHES Representative:**	NDM

Time	Location	Activity / Observations
7:45	CAF1	CHES Representative arrived
8:15	CAF1	Nedilys called Manuel (J&S Rep) for status
8:30	CAF1	J&S and FLRA/CHES Personnel arrived
8:41	MW4	Arrived for GW level readings.
8:45	MW4	Done
8:47	MW2	Arrived for GW level readings.
8:49	MW2	Done
8:50	MW1	Arrived for GW level readings.
8:53	MW1	Done
9:02	Gate	Registry
9:05	MW5	Arrived for GW level readings.
9:09	MW5	Both well caps were found under water; water was evacuated prior to opening the well cap.
9:12	MW5	Done
9:20	MW5	Done
9:21	MW9	Arrived for GW level readings.
9:24	MW9	Done
9:27	MW10	Arrived for GW level readings.
9:30	MW10	Done
9:33	MW11	Arrived for GW level readings.
9:38	MW11	Done
9:40	MW6	Arrived for GW level readings.
9:45	MW6	Done
9:47	MW3	Arrived for GW level readings. Wells were blocked by trucks with suitcases; GMD employee offered to move the carriage.
9:51	MW3	Done
10:02	MW8	Arrived for GW level readings.
10:06	MW8	Done
10:15	CAF1	CHES/J&S teams signed off

Moving Forward (Next Steps)

Action Item	Deadline	%Completion	Responsible Party
Coordinate following week's work.	July 2, 2015	25%	FLRA/J&S

Weather History

Two (2) days prior to GW Level Monitoring event

Tuesday, June 30, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	27 °C	29 °C	
Max Temperature	29 °C	32 °C	35 °C (1988)
Min Temperature	25 °C	26 °C	21 °C (1929)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	16	18	
Month to date cooling degree days	574	549	
Year to date cooling degree days	2915	2714	
Since 1 June cooling degree days	574	549	
Growing Degree Days	30 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	86		
Maximum Humidity	97		
Minimum Humidity	74		
Precipitation			
Precipitation	10.41 mm	3.56 mm	3.78 mm (1925)
Month to date precipitation	2.11	4.41	
Year to date precipitation	15.50	23.09	

Special Comments

N/A

Ref: Weather Underground

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater Levels Reading Event (Weekly for the first three months)		
Address:	LMMIA	**Date:**	July 2, 2015

Weather History

One (1) day prior to GW Level Monitoring event	Special Comments
Wednesday, July 1, 2015	N/A

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	28 °C	
Max Temperature	31 °C	32 °C	34 °C (1995)
Min Temperature	25 °C	26 °C	21 °C (1959)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	18	18	
Month to date cooling degree days	18	18	
Year to date cooling degree days	2933	2732	
Since 1 June cooling degree days	592	567	
Growing Degree Days	32 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	79		
Maximum Humidity	97		
Minimum Humidity	61		
Precipitation			
Precipitation	3.81 mm	3.81 mm	39.12 mm (1983)
Month to date precipitation	0.15	0.15	
Year to date precipitation	15.65	23.24	

Ref: Weather Underground

Weather History

Day of GW Level Monitoring event	Special Comments
Thursday, July 2, 2015	N/A

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	28 °C	
Max Temperature	29 °C	32 °C	33 °C (1995)
Min Temperature	26 °C	26 °C	21 °C (1913)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days		0	
Since 1 June heating degree days		0	
Since 1 July heating degree days		0	
Cooling Degree Days	16	18	
Month to date cooling degree days		36	
Year to date cooling degree days		2750	
Since 1 June cooling degree days		585	
Growing Degree Days	32 (Base 50)		
Moisture			
Dew Point	23 °C		
Average Humidity	78		
Maximum Humidity	84		
Minimum Humidity	72		
Precipitation			
Precipitation	0.0 mm	3.81 mm	3.89 mm (1928)
Month to date precipitation		0.30	
Year to date precipitation		23.39	

Ref: Weather Underground

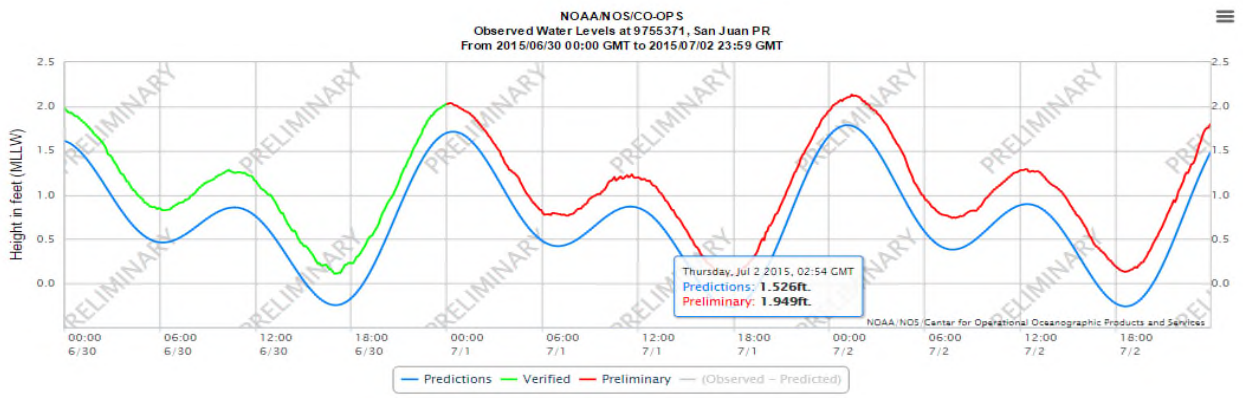
Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

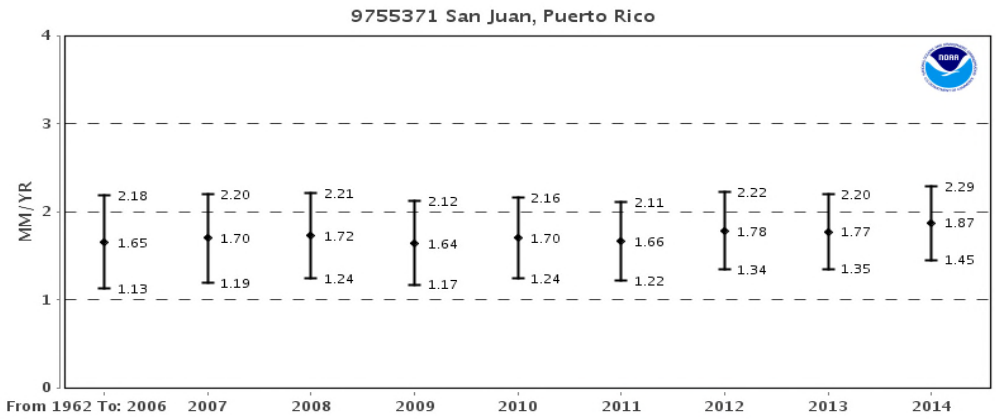
Project:	CAF MW Weekly Groundwater Levels Reading Event (Weekly for the first three months)		
Address:	LMMIA	**Date:**	July 2, 2015

Water Levels

Two (2) days prior to GW Level Monitoring event until day of event



Previous Mean Water Level Trends



Ref: National Oceanic and Atmospheric Administration

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater Levels Reading Event (Weekly for the first three months)		
Address:	LMMIA	**Date:**	July 9, 2015

Phone:	787-751-7810	**CHES Representative:**	Nedilys Díaz Montañez

Time	Location	Activity / Observations
8:45	CAF1	CHES Representative arrived
9:05	CAF1	J&S and CHES Personnel met; receipt of Visitor's passes.
9:20	MW5	Arrived for GW level readings.
9:30	MW5	Done
9:32	MW7	Arrived for GW level readings.
9:40	MW7	Done
9:41	MW9	Arrived for GW level readings.
9:42	MW9D	Well blocked by cart. Asked to UPS supervisor if they could move the cart.
9:48	MW9D	Employee of UPS moved the carriage.
9:50	MW9	Done
9:52	MW10	Arrived for GW level readings.
9:58	MW10	Done
10:03	MW11	Arrived for GW level readings.
10:08	MW11	Done
10:13	MW6	Arrived for GW level readings.
10:20	MW6	Done
10:21	MW3	Arrived for GW level readings.
10:26	MW3	Done
10:35	MW1	Arrived for GW level readings.
10:40	MW1	Done
10:42	MW4	Arrived for GW level readings.
10:46	MW4	Done
10:48	MW2	Arrived for GW level readings.
10:53	MW2	Done
11:01	MW8	Arrived for GW level readings.
11:07	MW8	Done
11:10	CAF1	Personal of J&S left.
11:30	CAF1	CHES representative left.

Moving Forward (Next Steps)

Action Item	Deadline	%Completion	Responsible Party
Coordinate following week's work.	July 2, 2015	100%	FLRA/J&S

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater Levels Reading Event (Weekly for the first three months)		
Address:	LMMIA	**Date:**	July 9, 2015

Weather History

Two (2) days prior to GW Level Monitoring event

Tuesday, July 7, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	29 °C	28 °C	
Max Temperature	32 °C	32 °C	33 °C (2010)
Min Temperature	26 °C	26 °C	22 °C (1957)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	19	18	
Month to date cooling degree days	135	126	
Year to date cooling degree days	3050	2840	
Since 1 June cooling degree days	709	675	
Growing Degree Days	34 (Base 50)		
Moisture			
Dew Point	23 °C		
Average Humidity	72		
Maximum Humidity	85		
Minimum Humidity	59		
Precipitation			
Precipitation	0.00 mm	4.06 mm	10.26 mm (1901)
Month to date precipitation	0.15	1.08	
Year to date precipitation	15.65	24.17	

Special Comments: N/A

Ref: Weather Underground

Weather History

One (1) day prior to GW Level Monitoring event

Wednesday, July 8, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	29 °C	28 °C	
Max Temperature	32 °C	32 °C	34 °C (1995)
Min Temperature	27 °C	26 °C	21 °C (1961)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	20	18	
Month to date cooling degree days	155	144	
Year to date cooling degree days	3070	2858	
Since 1 June cooling degree days	729	693	
Growing Degree Days	34 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	77		
Maximum Humidity	85		
Minimum Humidity	68		
Precipitation			
Precipitation	T mm	4.06 mm	3.96 mm (1996)
Month to date precipitation	0.15	1.24	
Year to date precipitation	15.65	24.33	

Special Comments: N/A

Ref: Weather Underground

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater Levels Reading Event (Weekly for the first three months)		
Address:	LMMIA	**Date:**	July 9, 2015

Weather History

Day of GW Level Monitoring event	Special Comments
	N/A

Thursday, July 9, 2015

« Previous Day Next Day

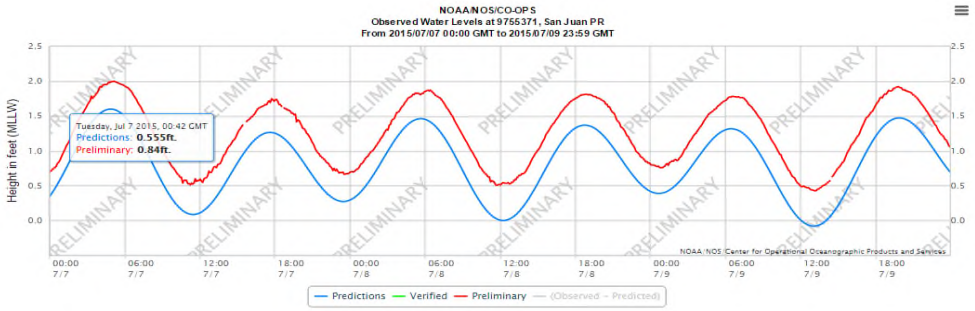
Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	28 °C	
Max Temperature	31 °C	32 °C	33 °C (1995)
Min Temperature	25 °C	26 °C	21 °C (1928)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days		0	
Since 1 June heating degree days		0	
Since 1 July heating degree days		0	
Cooling Degree Days	18	18	
Month to date cooling degree days		162	
Year to date cooling degree days		2876	
Since 1 June cooling degree days		711	
Growing Degree Days	33 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	80		
Maximum Humidity	93		
Minimum Humidity	59		
Precipitation			
Precipitation	0.5 mm	4.32 mm	3.56 mm (1928)
Month to date precipitation		1.41	
Year to date precipitation		24.50	

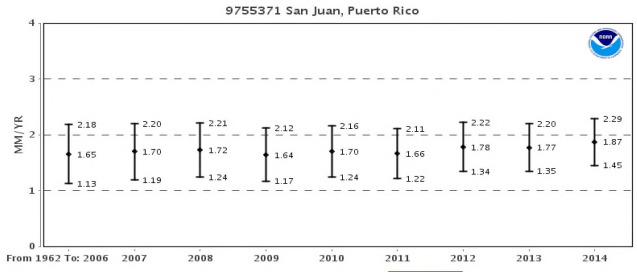
Ref: Weather Underground

Water Levels

Two (2) days prior to GW Level Monitoring event until day of event



Previous Mean Water Level Trends



Ref: National Oceanic and Atmospheric Administration

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater Levels Reading Event (Weekly for the first three months)		
Address:	LMMIA	**Date:**	July 16, 2015

Phone:	787-751-7810	**CHES Representative:**	Nedilys Díaz Montañez
Attendance:	Eddie Joel Sevilla (J&S)		

Time	Location	Activity / Observations
8:49	CAF1	CHES Representative arrived
9:05	CAF1	Work began.
9:15	MW5	Arrived for GW level readings. (MW5D with water)
9:25	MW5	Done
9:26	MW7	Arrived for GW level readings. (Both wells with water)
9:33	MW7	Done
9:35	MW9	Arrived for GW level readings. (MW9D It's blocked by cart. UPS supervisor was helpful in extracting cart)
9:43	MW9	Done
9:45	MW10	Arrived for GW level readings.
9:50	MW10	Done
9:53	MW11	Arrived for GW level readings.
10:00	MW11	Done
10:06	MW6	Arrived for GW level readings.
10:14	MW6	Done
10:15	MW3	With the help of GMD Supervisor; team was able to perform the GW level readings.
10:27	MW3	Done
10:33	MW1	Arrived for GW level readings.
10:40	MW1	Done
10:41	MW4	Arrived for GW level readings.
10:46	MW4	Done
10:48	MW2	Arrived for GW level readings.
10:55	MW2	Done
11:02	MW8	Arrived for GW level readings.
11:09	MW8	Done
11:16	CAF1	CHES representative signed off.

Moving Forward (Next Steps)

Action Item	Deadline	%Completion	Responsible Party
N/A	N/A	N/A	N/A

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater Levels Reading Event (Weekly for the first three months)		
Address:	LMMIA	**Date:**	July 16, 2015

Weather History

Two (2) days prior to GW Level Monitoring event

Tuesday, July 14, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	28 °C	
Max Temperature	31 °C	32 °C	34 °C (1980)
Min Temperature	26 °C	26 °C	21 °C (1999)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	18	18	
Month to date cooling degree days	264	252	
Year to date cooling degree days	3179	2966	
Since 1 June cooling degree days	838	801	
Growing Degree Days	33 (Base 50)		
Moisture			
Dew Point	25 °C		
Average Humidity	85		
Maximum Humidity	94		
Minimum Humidity	75		
Precipitation			
Precipitation	13.46 mm	4.57 mm	5.64 mm (2002)
Month to date precipitation	1.31	2.28	
Year to date precipitation	16.81	25.37	

Special Comments

N/A

Ref: Weather Underground

Weather History

One (1) day prior to GW Level Monitoring event

Wednesday, July 15, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	29 °C	28 °C	
Max Temperature	32 °C	32 °C	33 °C (1981)
Min Temperature	25 °C	26 °C	21 °C (1909)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	19	18	
Month to date cooling degree days	283	270	
Year to date cooling degree days	3198	2984	
Since 1 June cooling degree days	857	819	
Growing Degree Days	34 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	78		
Maximum Humidity	97		
Minimum Humidity	59		
Precipitation			
Precipitation	0.00 mm	4.32 mm	3.63 mm (1909)
Month to date precipitation	1.31	2.45	
Year to date precipitation	16.81	25.54	

Special Comments

N/A

Ref: Weather Underground

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater Levels Reading Event (Weekly for the first three months)		
Address:	LMMIA	**Date:**	July 16, 2015

Weather History

Day of GW Level Monitoring event	Special Comments
	N/A

Thursday, July 16, 2015

« Previous Day Next Day »

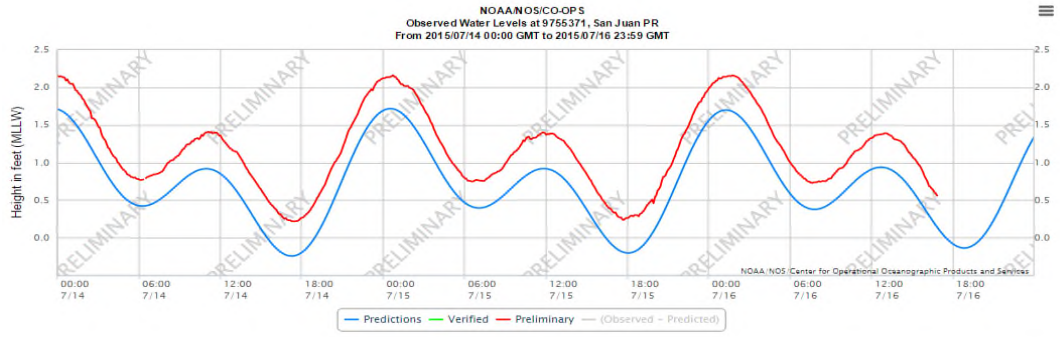
Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	28 °C	
Max Temperature	30 °C	32 °C	33 °C (1995)
Min Temperature	26 °C	26 °C	21 °C (1952)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days		0	
Since 1 June heating degree days		0	
Since 1 July heating degree days		0	
Cooling Degree Days	18	18	
Month to date cooling degree days		288	
Year to date cooling degree days		3002	
Since 1 June cooling degree days		837	
Growing Degree Days	33 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	80		
Maximum Humidity	85		
Minimum Humidity	72		
Precipitation			
Precipitation	0.0 mm	4.32 mm	4.39 mm (2010)
Month to date precipitation		2.62	
Year to date precipitation		25.71	

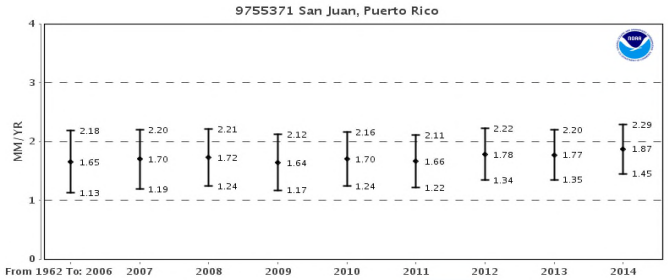
Ref: Weather Underground

Water Levels

Two (2) days prior to GW Level Monitoring event until day of event



Previous Mean Water Level Trends



Ref: National Oceanic and Atmospheric Administration

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Bimonthly Sampling Event		
Address:	LMMIA	**Date:**	July 21, 2015

Phone:	787-751-7810	**CHES Representative:**	HRM/NDM/DP

Time	Location	Activity / Observations
7:17	CAF 1	Work on Field Blank (FB) filling
7:40	MW11	Arrival & work on FB
8:18	MW11	Decided to stop purge due to low flow
8:45	MW11	Very low flow @ 11S
8:50	CAF 1	Joel (J&S) fetching conductivity meter.
9:05	MW10	Arrival @ MW10 setting up
9:20	MW10D	Very low yield stopped purge after 2 gallons.
9:32	MW10S	Moving pump
9:39	MW10S	Low yield pretty clear after purging 1 galon. Sampling after 1.5 gallon purge due to low yield.
9:45	MW10S	Done sampling
10:00	MW6	Arrival & setup
10:10	MW6D	Low yield. Decided to sample after 2 gallons.
10:33	MW6S	Purged 2 galons but paused due to very low yield; continued shortly after at lower flow rate.
11:05	MW3D	Barely filled 1 galon. Will sample after purging 3 galons
11:25	MWW3S	Flow running low. Sampling @ 1.5 galons
11:45		LUNCH
12:45	MW9	Arrival & prep
13:29	MW9	Both well done purged
13:49	MW5	Arrival
14:30	MW5	Done both well
14:38	MW7	Arrival and prep
15:15	MW7	Done both wells' sampling
17:45	CAF 1	Done packing up samples.

Moving Forward (Next Steps)

Action Item	Deadline	%Completion	Responsible Party
N/A	N/A	N/A	N/A

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Bimonthly Sampling Event		
Address:	LMMIA	**Date:**	July 21, 2015

Weather History

Two (2) days prior to sampling event | **Special Comments**

Sunday, July 19, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	28 °C	
Max Temperature	31 °C	32 °C	33 °C (2006)
Min Temperature	24 °C	26 °C	21 °C (1960)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	17	18	
Month to date cooling degree days	354	342	
Year to date cooling degree days	3269	3056	
Since 1 June cooling degree days	928	891	
Growing Degree Days	32 (Base 50)		
Moisture			
Dew Point	23 °C		
Average Humidity	77		
Maximum Humidity	94		
Minimum Humidity	59		
Precipitation			
Precipitation	2.29 mm	4.32 mm	4.17 mm (1975)
Month to date precipitation	1.46	3.14	
Year to date precipitation	16.96	26.23	

Ref: Weather Underground

Weather History

One (1) day prior to sampling event | **Special Comments**

Monday, July 20, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	28 °C	
Max Temperature	31 °C	32 °C	33 °C (1995)
Min Temperature	24 °C	26 °C	22 °C (1939)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	17	18	
Month to date cooling degree days	371	360	
Year to date cooling degree days	3286	3074	
Since 1 June cooling degree days	945	909	
Growing Degree Days	32 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	80		
Maximum Humidity	94		
Minimum Humidity	65		
Precipitation			
Precipitation	2.79 mm	4.32 mm	61.21 mm (1915)
Month to date precipitation	1.57	3.31	
Year to date precipitation	17.07	26.40	

Ref: Weather Underground

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Bimonthly Sampling Event		
Address:	LMMIA	**Date:**	July 21, 2015

Weather History

Day of sampling event	Special Comments

Tuesday, July 21, 2015

« Previous Day Next Day »

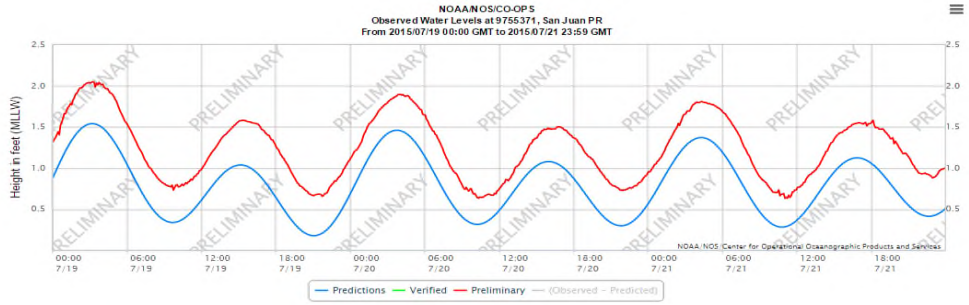
Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	28 °C	
Max Temperature	32 °C	32 °C	33 °C (1981)
Min Temperature	25 °C	26 °C	21 °C (1957)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	18	18	
Month to date cooling degree days	389	378	
Year to date cooling degree days	3304	3092	
Since 1 June cooling degree days	963	927	
Growing Degree Days	33 (Base 50)		
Moisture			
Dew Point	25 °C		
Average Humidity	82		
Maximum Humidity	100		
Minimum Humidity	64		
Precipitation			
Precipitation	0.51 mm	4.32 mm	5.87 mm (2009)
Month to date precipitation	1.59	3.48	
Year to date precipitation	17.09	26.57	

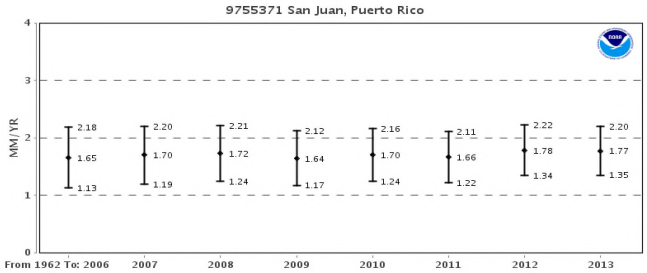
Ref: Weather Underground

Water Levels

Two (2) days prior to sampling event until day of sampling event



Previous Mean Water Level Trends



Ref: National Oceanic and Atmospheric Administration

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Bimonthly Sampling Event		
Address:	LMMIA	**Date:**	July 22, 2015

Phone:	787-751-7810	**CHES Representative:**	HRM/NDM/DP

Time	Location	Activity / Observations
6:50	CAF 1	Arrival CHES Team
7:15	MW4	Arrival, prepping, work on blanks
8:22	MW4	Done sampling of both wells
8:31	MW2	Arrival & prep
9:10	MW2	Its cloudy
9:20	MW2	Done sampling of both wells
9:23	MW1	Arrival and prepping
10:11	MW1	Done sampling of both wells
10:13	MW8	Arrival and prepping
11:06	MW8	Done sampling of both wells
11:30		LUNCH
12:30	CAF 1	Prepping samples
1:15	CAF 1	Shipping

Moving Forward (Next Steps)

Action Item	Deadline	%Completion	Responsible Party
N/A	N/A	N/A	N/A

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Bimonthly Sampling Event		
Address:	LMMIA	**Date:**	July 22, 2015

Weather History

Two (2) days prior to sampling event

Monday, July 20, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	28 °C	
Max Temperature	31 °C	32 °C	33 °C (1995)
Min Temperature	24 °C	26 °C	22 °C (1939)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	17	18	
Month to date cooling degree days	371	360	
Year to date cooling degree days	3286	3074	
Since 1 June cooling degree days	945	909	
Growing Degree Days	32 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	80		
Maximum Humidity	94		
Minimum Humidity	65		
Precipitation			
Precipitation	2.79 mm	4.32 mm	61.21 mm (1915)
Month to date precipitation	1.57	3.31	
Year to date precipitation	17.07	26.40	

Special Comments

Some cloudy moments mid-morning.

Ref: Weather Underground

Weather History

One (1) day prior to sampling event

Tuesday, July 21, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	28 °C	
Max Temperature	32 °C	32 °C	33 °C (1981)
Min Temperature	25 °C	26 °C	21 °C (1957)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	18	18	
Month to date cooling degree days	389	378	
Year to date cooling degree days	3304	3092	
Since 1 June cooling degree days	963	927	
Growing Degree Days	33 (Base 50)		
Moisture			
Dew Point	25 °C		
Average Humidity	82		
Maximum Humidity	100		
Minimum Humidity	64		
Precipitation			
Precipitation	0.51 mm	4.32 mm	5.87 mm (2009)
Month to date precipitation	1.59	3.48	
Year to date precipitation	17.09	26.57	

Special Comments

Ref: Weather Underground

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Bimonthly Sampling Event		
Address:	LMMIA	**Date:**	July 22, 2015

Weather History	
Day of sampling event	**Special Comments**

Wednesday, July 22, 2015

« Previous Day Next Da

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	30 °C	28 °C	
Max Temperature	34 °C	32 °C	33 °C (1974)
Min Temperature	26 °C	26 °C	21 °C (1936)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	21	18	
Month to date cooling degree days	410	396	
Year to date cooling degree days	3325	3110	
Since 1 June cooling degree days	984	945	
Growing Degree Days	36 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	75		
Maximum Humidity	97		
Minimum Humidity	52		
Precipitation			
Precipitation	T mm	4.06 mm	5.66 mm (2007)
Month to date precipitation	1.59	3.64	
Year to date precipitation	17.09	26.73	

Ref: Weather Underground

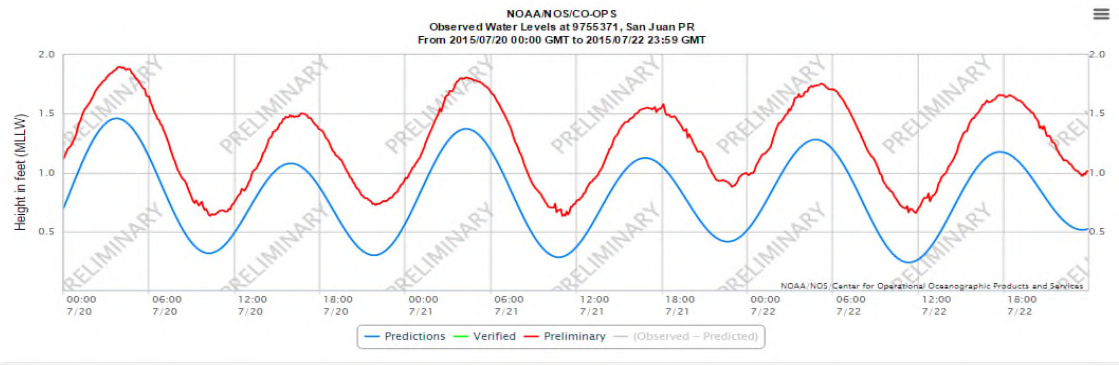
Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

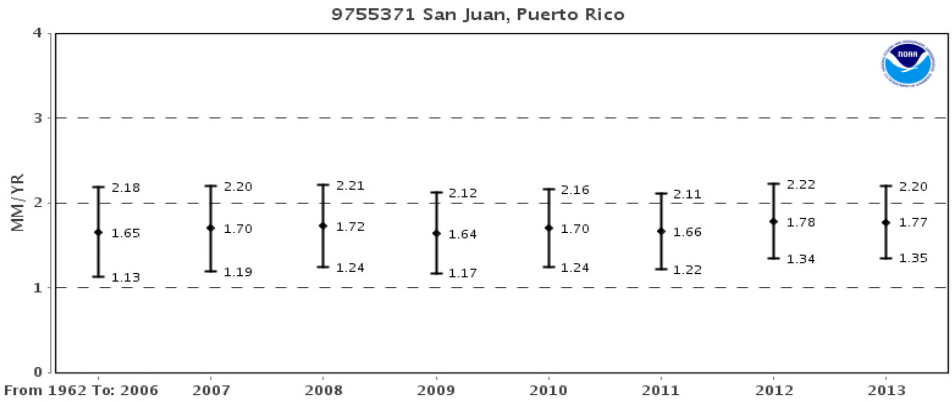
Project:	CAF MW Bimonthly Sampling Event		
Address:	LMMIA	**Date:**	July 22, 2015

Water Levels

Two (2) days prior to sampling event until day of sampling event



Previous Mean Water Level Trends



Ref: National Oceanic and Atmospheric Administration

Fernando Rodriguez <flrodriguez@flraches.com>

[URGENT] First Bimonthly Sampling Event

Jean Tirri <jeantir@msn.com> Tue, Jul 28, 2015 at 10:19 AM
To: "lareau.meghan@epa.gov" <lareau.meghan@epa.gov>
Cc: Fernando Rodriguez <flrodriguez@flraches.com>

Good morning Meghan,

Thank you for your time today. As we discussed, UPS delayed delivery of our July 21 sampling rendering them useless. Attached is the memorandum from our consultant reference the situation. His recommendation is that we request that sampling be eliminated or at worst case, scheduled for the end of the process, so we can review if it is necessary.

The initial sampling report was very positive and actually only one well (#8) showed levels of concern. I have also attached that report for your review.

Additionally, our first ground water sampling was successfully completed and we sent that to you on July 20, 2015.

We sincerely appreciate your understanding, having to mobilize for another sampling, off schedule will be extremely costly. Our next sampling of the wells is scheduled for September and we will keep that schedule.

With regards,
Jean Tirri

MEMO

Fernando L. Rodríguez, P.E. & Associates
Chemical/Environmental Engineering and Industrial Hygiene Consultants
Tel.: (787) 751-7810 | Fax (787) 751-8988 | E-mail: flrodriguez@flraches.com | Web Page: http://www.flraches.com

To: Mrs. Jean Tirri
Caribbean Airport Facilities, Inc.

From: Fernando L. Rodríguez, P.E.
Consultant

Date: July 24, 2015

Subject: **First Groundwater Wells Sampling Event**
Administrative Order
Caribbean Airport Facilities, Inc.
Carolina, PR

This is to inform you that our office coordinated and completed with Jaca & Sierra (J&S) the reference field work during July 21 – 22, 2015 in accordance to established procedures. All collected groundwater samples were properly preserved and packaged with ice to maintain refrigeration temperatures as per set protocols in cooler chests and delivered for shipment at the United Parcel Services (UPS) counter located in CAF 1 lobby at the end of both days by our personnel.

Ms. Natalie Luciano, Senior Specialist from Eurofins Lancaster Laboratories Environmental, LLC (ELLE) sent us an email just before noon yesterday indicating that one of the cooler chests shipped on the evening of Tuesday, July 21, 2015, was delayed by a full day. Further, the temperatures in the first day samples field blank sample was at 17.7 °C and its surrounding internals ranged from 16.3-17.6 °C. Copy of her email is attached for your reference.

These conditions are unacceptable as per requirements established in the quality assurance protocols approved by the federal Environmental Protection Agency (EPA) for this project. Therefore, the groundwater samples collected, shipped and received at the lab cannot be analyzed translating that the 2-days field work effort is lost.

Fernando L. Rodríguez, P.E. & Associates
Chemical/Environmental Engineering and Industrial Hygiene Consultants
Tel.: (787) 751-7810 | Fax (787) 751-8988 | E-mail: flrodriguez@flraches.com | Web Page: http://www.flraches.com

We have to schedule new dates to conduct the groundwater sampling efforts as soon as possible but associated costs for our group, the geotechnical team and the required lab materials for this effort must be covered properly by CAF. We are attaching a cost estimate on a tabulated sheet that shows specific cost items per past and new sampling efforts to be covered.

Our recommendation is that CAF present a claim to fully cover both activities to UPS promptly. Copy of shipping papers and Chain of Custody (COC) forms are attached to be included in your claim document.

Furthermore, we do recommend to use Federal Express (FedEx) courier services during the re-sampling event and the next scheduled events aiming to continue the required field activities in accordance to the agreed program under the legal order with EPA. At least until CAF resolves its claim to UPS and then you decide which courier company to be used in the future.

We look forward to your prompt decision on this matter. Feel free to contact our office if you have any questions on the heretofore mentioned as soon as possible.

FLR/hrm

C: N. Luciano, ELLE

Attachments Ref: 354-78

Hanna Rodriguez <hkrodriguez@flraches.com>

RE: CAF Shipment (July 21, 2015) - 4 coolers

Natalie Luciano <NatalieLuciano@eurofinsus.com> Thu, Jul 23, 2015 at 11:21 AM
To: Hanna Rodriguez <hkrodriguez@flraches.com>
Cc: Technical Intern <tech.intern@flraches.com>, Carmen Figueroa <cfigueroa@flraches.com>

Hanna,

We didn't get one of the coolers yesterday, but it arrived today. I attached a copy of the COC and receipt documentation for the delayed cooler.

The temperature blank was at 17.7C. We also checked the surface temperatures at the 4 corners and center of the cooler, which ranged from 16.3-17.6C.

May we proceed with the analyses and comment on the temperature?

Thank you,

Natalie Luciano

Senior Specialist, Environmental Client Services

Phone: +1 717-556-7258

Look for Eurofins Lancaster Laboratories Environmental at these upcoming conferences and industry events.

From: hkrodriguez@gmail.com [mailto:hkrodriguez@gmail.com] **On Behalf Of** Hanna Rodriguez
Sent: Wednesday, July 22, 2015 7:04 AM
To: SAEnvEntry@eurofins.com
Cc: Natalie Luciano; Technical Intern; Carmen Figueroa
Subject: CAF Shipment (July 21, 2015) - 4 coolers

Please find Chains of Custody pertaining to yesterday's shipment of 4 coolers.

Please confirm receipt of this email and its contents.

Warm regards,
Hanna Rodriguez

Notify us here to report this email as spam.

20150723111015032.pdf
126K

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # _____ Group # _____ Sample # _____

Client:	Fernando L. Rodríguez, PE & Associates
Project Name/#:	CAF GW Monitoring Well Construction Project (Initial Sampling)
Site ID #:	Caribbean Airport Facilities (L.M.M. Int'l Airport-SJU)
Project Manager:	Fernando L. Rodríguez
P.O. #:	
Sampler:	David Perez
PWSID #:	
Phone #:	787-751-7810
Quote #:	
State where sample(s) were collected:	Puerto Rico

Matrix: Soil ☐ Sediment ☐ Potable ☐ Ground ☑ Water NPDES ☐ Surface ☐ Other: DI Water

Analyses Requested — Preservation Codes: H, N/A

For Lab Use Only: SF #: _____ SCR #: _____

Preservation Codes: H = HCl; T = Thiosulfate; N = HNO_3; B = NaOH; S = H_2SO_4; P = H_3PO_4; O = Other

Sample Identification	Collection Date	Collection Time	Grab	Composite	Total # of Containers	TPH GRO	TPH DRO	Remarks
MW6D-W01	07-21-15	10:15	✓		5	3	2	
MW6D-W01 MS	07-21-15	10:19	✓		5	3	2	
MW6D-W01 MSD	07-21-15	10:23	✓		5	3	2	
MW6S-W01	07-21-15	10:42	✓		5	3	2	
Field Blank	07-21-15	7:48 1516		✓	5	3	2	
Trip Blank	06-18-15			✓	2			

Turnaround Time Requested (TAT) (please check): Standard ☑ Rush ☐
(Rush TAT is subject to laboratory approval and surcharges.)

Date results are needed:

Rush results requested by (please check): E-Mail ☑ Phone ☐

E-mail Address: hkrodriguez@flraches.com; CC: flrachespr@gmail.com

Phone: 787-751-7810

Data Package Options (please check if required)

Type I (Validation/non-CLP) ☐ MA MCP ☐

Type III (Reduced non-CLP) ☐ CT RCP ☐

Type VI (Raw Data Only) ☐ TX TRRP-13 ☐

NYSDEC Category ☐ A or ☐ B

EDD Required? Yes ☐ No ☐ If yes, format: _____

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	7/21/2015	16:42			
			[signature]	7.23.15	8:15

Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____

Temperature upon receipt 17.7 °C

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 89587

Group Number(s):

Client: Fernando

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	07/23/2015 8:15
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	PR		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Timothy Cubberley (6520) at 10:29 on 07/23/2015

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?	Samples Collected Same Day as Receipt?
1	DT131	17.7	DT	Wet	N	Bagged	Y	N

Elevated Temperature Details

All Temperatures in °C

Cooler #	Thermometer ID	Top Left Temp	Top Right Temp	Bottom Left Temp	Bottom Right Temp	Center Temp	Factors Contributing to Elevated Temp	Comments
1	8013596-IR	17.6	16.3	17.3	16.5	17.0	Missing cooler from the other day.	

Samples In Elevated-Temperature Coolers

Cooler #	Sample ID
1	All Samples

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Shipping Document

See instructions on back. Visit UPS.com® or call 1-800-PICK-UPS® (800-742-5877) for additional information and Tariff/Terms and Conditions.

TRACKING NUMBER J458 111 3902

SHIPMENT FROM

SHIPPER'S UPS ACCOUNT NO. 5W9Y97

REFERENCE NUMBER

NAME: Jan Tirri — TELEPHONE: 787 791 4545

COMPANY: 7150 State Rd Carolina Sector LMTA

STREET ADDRESS: P Caribbean Airport Facilities

CITY AND STATE: Carolina, PR — ZIP CODE: 00979

2 EXTREMELY URGENT DELIVERY TO

NAME: Natalie Lucion — TELEPHONE: 717 556-7258

COMPANY: Eurofins Lancaster Labs

STREET ADDRESS: 2425 New Holland Pike — DEPT./FLR. — Residential Delivery ☐

CITY AND STATE (INCLUDE COUNTRY IF INTERNATIONAL): Lancaster PA — ZIP CODE: 17601

3 WEIGHT

LTR	PAK	WEIGHT	DIMENSIONAL WEIGHT (If Applicable)	LARGE PACKAGE
☐	☐	63		☐

4 SHIPPER RELEASE ☐

5 TYPE OF SERVICE

☒ NEXT DAY AIR ☐ EXPRESS (INT'L)

FOR INTERNATIONAL SHIPMENTS $ CUSTOMS VALUE ☐ DOCUMENTS ONLY

6 OPTIONAL SERVICES

☐ SATURDAY PICKUP (See Instructions.) ☐ SATURDAY DELIVERY (See Instructions.)

☐ DECLARED VALUE FOR CARRIAGE (For declared value over $100, see instructions.) $ AMOUNT

☐ C.O.D. (If C.O.D., enter amount to be collected and attach completed UPS C.O.D. tag to package.) $ AMOUNT

7 ADDITIONAL HANDLING CHARGE ☐ An Additional Handling Charge applies for certain items. See Instructions.

TOTAL CHARGES

8 METHOD OF PAYMENT

☒ BILL SHIPPER'S ACCOUNT (Enter in Section 1) — BILL RECEIVER (Enter in Section 9) — BILL THIRD PARTY (Enter in Section 9) — CREDIT CARD (American Express, Diner's Club, MasterCard, Visa) — CHECK ☐

9 RECEIVER'S/THIRD PARTY'S UPS ACCT. NO. OR MAJOR CREDIT CARD NO. — EXPIRATION DATE

THIRD PARTY'S COMPANY NAME

STREET ADDRESS

CITY AND STATE — ZIP CODE

Shipper authorizes UPS to act as forwarding agent for export control and customs purposes. Shipper certifies that the commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to law is prohibited.

10 SHIPPER'S SIGNATURE X Marvel Rosa

All shipments are subject to the terms contained in the UPS Tariff/Terms and Conditions of Service, which are available at UPS.com and local UPS offices.

DATE OF SHIPMENT 2/21/2015

010191120GS 6/14 RRD

SHIPPER'S COPY

United States

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Tracking Detail | Like 1.4m | Share | Print | Help | A A A

J4581113902

Updated 07/23/2015 3:42 P.M. Eastern Time

Delivered

Delivered On:
Thursday, 07/23/2015 at 8:03 A.M.

Left At:
Dock

Signed By:
MARTIN

Proof of Delivery

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I am already a UPS My Choice® Member

Need more information?

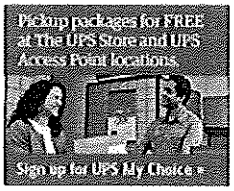
Get Help

Shipping Information

To:
LANCASTER, PA, US

Shipped By

UPS NEXT DAY AIR



Shipment Progress | What's Next?

Location	Date	Local Time	Activity
LANCASTER, PA, US	07/23/2015	8:03 A.M.	Delivered

Additional Information

Type: Package

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	July 30, 2015

Phone:	787-751-7810	**CHES Representative:**	NDM

Time	Location	Activity / Observations
8:00	CAF1	CHES Personnel arrived
8:30	CAF1	J&S and FLRA personal arrival
8:51	MW5	Arrived for GW level readings.
8:55	MW5	Done
8:56	MW7	Arrived for GW level readings.
8:59	MW7	Done
9:00	MW9	Arrived for GW level readings.
9:03	MW9	Done
9:05	MW10	Arrived for GW level readings.
9:07	MW10	Done
9:12	MW11	Arrived for GW level readings.
9:14	MW11	Done
9:16	MW6	Arrived for GW level readings.
9:22	MW6	Done
9:24	MW3	Arrived for GW level readings.
9:28	MW3	Done
9:32	MW1	Arrived for GW level readings.
9:35	MW1	Done
9:37	MW4	Arrived for GW level readings.
9:40	MW4	Done
9:41	MW2	Arrived for GW level readings.
9:44	MW2	Done
9:46	MW8	Arrived for GW level readings.
9:51	MW8	Done
9:57	CAF1	CHES/J&S left

Moving Forward (Next Steps)

Action Item	Deadline	%Completion	Responsible Party
N/A	N/A	N/A	N/A

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	July 30, 2015

Weather History

Two (2) days prior to GW Level Monitoring event | **Special Comments**

Tuesday, July 28, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	29 °C	28 °C	
Max Temperature	32 °C	32 °C	33 °C (1981)
Min Temperature	27 °C	26 °C	21 °C (1899)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	20	18	
Month to date cooling degree days	528	504	
Year to date cooling degree days	3443	3218	
Since 1 June cooling degree days	1102	1053	
Growing Degree Days	35 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	75		
Maximum Humidity	91		
Minimum Humidity	59		
Precipitation			
Precipitation	0.00 mm	4.06 mm	5.26 mm (1942)
Month to date precipitation	1.59	4.61	
Year to date precipitation	17.09	27.70	

Ref: Weather Underground

Weather History

One (1) day prior to GW Level Monitoring event | **Special Comments**

Wednesday, July 29, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	29 °C	29 °C	
Max Temperature	32 °C	32 °C	33 °C (1984)
Min Temperature	27 °C	26 °C	21 °C (1919)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	20	18	
Month to date cooling degree days	548	522	
Year to date cooling degree days	3463	3236	
Since 1 June cooling degree days	1122	1071	
Growing Degree Days	35 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	74		
Maximum Humidity	85		
Minimum Humidity	63		
Precipitation			
Precipitation	0.00 mm	3.81 mm	7.42 mm (1931)
Month to date precipitation	1.59	4.76	
Year to date precipitation	17.09	27.85	

Ref: Weather Underground

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	July 30, 2015

Weather History

Day of GW Level Monitoring event	Special Comments

Thursday, July 30, 2015

« Previous Day Next Day »

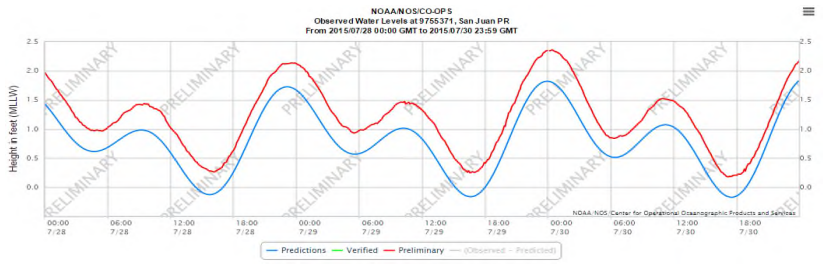
Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	27 °C	29 °C	
Max Temperature	30 °C	32 °C	34 °C (1990)
Min Temperature	26 °C	26 °C	21 °C (1955)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days		0	
Since 1 June heating degree days		0	
Since 1 July heating degree days		0	
Cooling Degree Days	16	18	
Month to date cooling degree days		540	
Year to date cooling degree days		3254	
Since 1 June cooling degree days		1089	
Growing Degree Days	31 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	79		
Maximum Humidity	82		
Minimum Humidity	72		
Precipitation			
Precipitation	0.0 mm	3.81 mm	5.28 mm (2006)
Month to date precipitation		4.91	
Year to date precipitation		28.00	

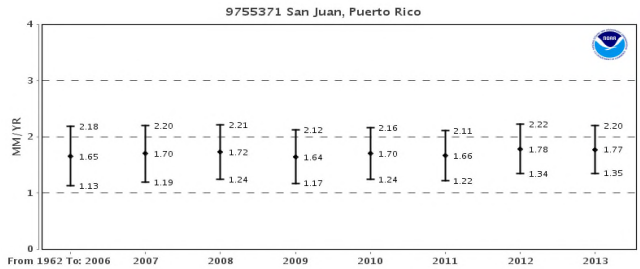
Ref: Weather Underground

Water Levels

Two (2) days prior to GW Level Monitoring event until day of event



Previous Mean Water Level Trends



Ref: National Oceanic and Atmospheric Administration

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associate:
Chemical/Environmental Engineering & Industrial Hygiene Consultant:
www.flraches.com

Project:	CAF Groundwater Monitoring Wells		
Address:	LMMIA	**Date:**	July-15

Weather History

Climatological Data for SAN JUAN L M MARIN AP, PR - July 2015

Click column heading to sort ascending, click again to sort descending.

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2015-07-01	88	77	82.5	-0.9	0	18	0.15	0.0	0
2015-07-02	91	78	84.5	1.1	0	20	T	0.0	0
2015-07-03	89	80	84.5	1.1	0	20	T	0.0	0
2015-07-04	88	80	84.0	0.6	0	19	T	0.0	0
2015-07-05	89	80	84.5	1.1	0	20	0.00	0.0	0
2015-07-06	89	78	83.5	0.1	0	19	T	0.0	0
2015-07-07	89	78	83.5	0.1	0	19	0.00	0.0	0
2015-07-08	89	80	84.5	1.1	0	20	T	0.0	0
2015-07-09	89	78	83.5	0.1	0	19	0.02	0.0	0
2015-07-10	88	78	83.0	-0.4	0	18	0.02	0.0	0
2015-07-11	91	78	84.5	1.1	0	20	0.00	0.0	0
2015-07-12	84	75	79.5	-3.9	0	15	0.59	0.0	0
2015-07-13	90	77	83.5	0.1	0	19	0.00	0.0	0
2015-07-14	88	78	83.0	-0.4	0	18	0.53	0.0	0
2015-07-15	90	77	83.5	0.1	0	19	0.00	0.0	0
2015-07-16	87	79	83.0	-0.4	0	18	0.06	0.0	0
2015-07-17	89	77	83.0	-0.4	0	18	0.00	0.0	0
2015-07-18	87	79	83.0	-0.4	0	18	0.00	0.0	0
2015-07-19	88	76	82.0	-1.4	0	17	0.09	0.0	0
2015-07-20	88	75	81.5	-1.9	0	17	0.11	0.0	0
2015-07-21	89	77	83.0	-0.4	0	18	0.02	0.0	0
2015-07-22	93	78	85.5	2.1	0	21	T	0.0	0
2015-07-23	90	79	84.5	1.1	0	20	0.00	0.0	0
2015-07-24	90	78	84.0	0.6	0	19	0.00	0.0	0
2015-07-25	90	78	84.0	0.6	0	19	0.00	0.0	0
2015-07-26	91	78	84.5	1.1	0	20	0.00	0.0	0
2015-07-27	90	79	84.5	1.1	0	20	T	0.0	0
2015-07-28	90	80	85.0	1.6	0	20	0.00	0.0	0
2015-07-29	90	80	85.0	1.5	0	20	0.00	0.0	0
2015-07-30	91	80	85.5	2.0	0	21	T	0.0	0
2015-07-31	91	79	85.0	1.5	0	20	0.02	0.0	0
Sum	2766	2424	-	-	0	589	1.61	0.0	-
Average	89.2	78.2	83.7	0.3	-	-	-	-	0.0
Normal	88.7	78.1	83.4	-	0	570	5.07	0.0	-

Ref: NOAA NWSF; NOWData - NOAA Online Weather Dat; San Juan LMMIA Statio

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 6, 2015

Phone:	787-751-7810	**CHES Representative:**	NDM

Time	Location	Activity / Observations
8:00	CAF1	CHES Personnel arrived
8:10	CAF1	J&S and FLRA personal arrival
8:23	MW5	Arrived for GW level readings.
8:25	MW5D	It's full of water passed the water-tight plug. Drained prior to opening well cap.
8:30	MW5	Done
8:31	MW7	Arrived for GW level readings. Both wells are full of water passed the water-tight plug. Evacuated water.
8:40	MW7	Done
8:41	MW9	Arrived for GW level readings.
8:47	MW9	Done
8:48	MW10	Arrived for GW level readings.
8:52	MW10	Done
8:57	MW11	Arrived for GW level readings.
9:03	MW11	Done
9:06	MW6	Arrived for GW level readings.
9:13	MW6	Done
9:14	MW3	Arrived for GW level readings.
9:17	MW3	Done
9:22	MW1	Arrived for GW level readings.
9:26	MW1	Done
9:27	MW4	Arrived for GW level readings.
9:30	MW4S	A slight sheen was observed on MW4S.
9:32	MW4	Done
9:33	MW2	Arrived for GW level readings.
9:34	MW2S	A slight sheen was observed on MW2S.
9:35	MW2	A slight sheen was observed on both wells.
9:37	MW2	Done
9:40	MW8	Arrived for GW level readings.
9:45	MW8	Done
9:50	CAF1	CHES/J&S signed off

Moving Forward (Next Steps)

Action Item	Deadline	%Completion	Responsible Party
N/A	N/A	N/A	N/A

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 6, 2015

Weather History

Two (2) days prior to GW Level Monitoring event | **Special Comments**

Tuesday, August 4, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	29 °C	29 °C	
Max Temperature	32 °C	32 °C	33 °C (2005)
Min Temperature	26 °C	26 °C	21 °C (1955)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	20	19	
Month to date cooling degree days	77	76	
Year to date cooling degree days	3581	3360	
Since 1 June cooling degree days	1240	1195	
Growing Degree Days	34 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	80		
Maximum Humidity	91		
Minimum Humidity	68		
Precipitation			
Precipitation	T mm	3.81 mm	6.88 mm (1945)
Month to date precipitation	0.43	0.60	
Year to date precipitation	17.54	28.76	

Ref: Weather Underground

Weather History

One (1) day prior to GW Level Monitoring event | **Special Comments**

Wednesday, August 5, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	29 °C	29 °C	
Max Temperature	32 °C	32 °C	34 °C (2010)
Min Temperature	25 °C	26 °C	21 °C (1959)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	19	19	
Month to date cooling degree days	96	95	
Year to date cooling degree days	3600	3379	
Since 1 June cooling degree days	1259	1214	
Growing Degree Days	34 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	77		
Maximum Humidity	94		
Minimum Humidity	59		
Precipitation			
Precipitation	3.05 mm	3.81 mm	3.71 mm (1943)
Month to date precipitation	0.55	0.75	
Year to date precipitation	17.66	28.91	

Ref: Weather Underground

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 6, 2015

Weather History	
Day of GW Level Monitoring event	**Special Comments**

Thursday, August 6, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	29 °C	
Max Temperature	30 °C	32 °C	33 °C (1995)
Min Temperature	26 °C	26 °C	20 °C (1904)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days		0	
Since 1 June heating degree days		0	
Since 1 July heating degree days		0	
Cooling Degree Days	18	19	
Month to date cooling degree days		114	
Year to date cooling degree days		3398	
Since 1 June cooling degree days		1233	
Growing Degree Days	32 (Base 50)		
Moisture			
Dew Point	23 °C		
Average Humidity	79		
Maximum Humidity	85		
Minimum Humidity	67		
Precipitation			
Precipitation	0.0 mm	3.56 mm	10.29 mm (1955)
Month to date precipitation		0.89	
Year to date precipitation		29.05	

Ref: Weather Underground

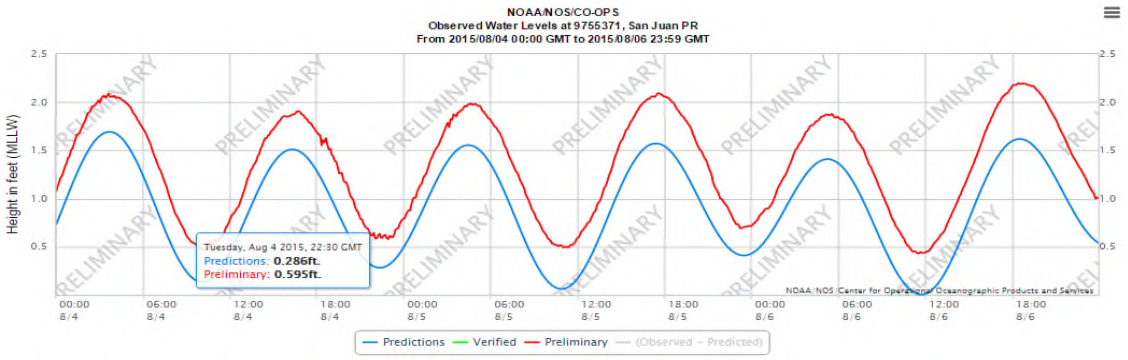
Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

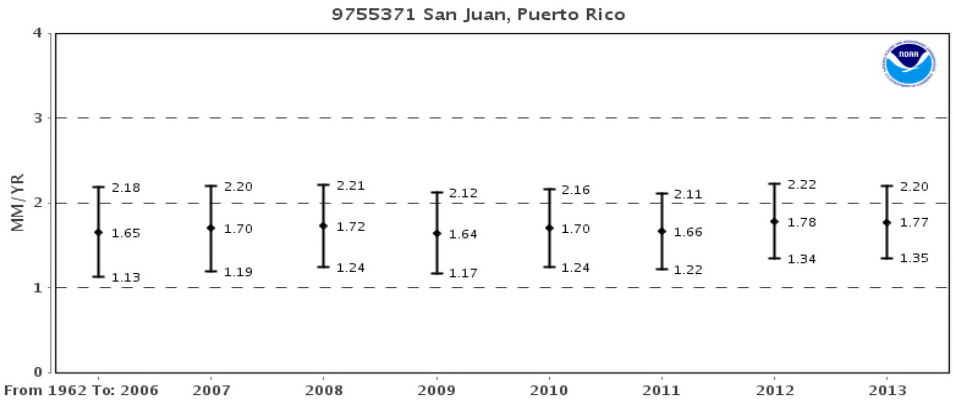
Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 6, 2015

Water Levels

Two (2) days prior to GW Level Monitoring event until day of event



Previous Mean Water Level Trends



Ref: National Oceanic and Atmospheric Administration

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 12, 2015

Phone:	787-751-7810	**CHES Representative:**	VCP

Time	Location	Activity / Observations
7:45	CAF1	CHES and J&S Personnel arrived
8:00	CAF1	Amy from CAF arrived; provided IDs
8:30	MW5	MW5S: 6'7" and MW5D: 6'9"
8:35	MW7	MW7D: 6'2" and MW7S: 6'
8:41	MW9	MW9S: 5'9" and MW9D: 6'2"
8:46	MW10	MW10S: 6'6" and MW10D: 6'6". The concrete around MW10S was broken; J&S instructed to fix.
8:56	MW11	MW11S: 7'6" and MW11D: 7'6"
9:05	MW6	MW6D: 6'1" and MW6S: 6'7"
9:10	MW3	MW3D: 6'7" and MW3S: 6'6"
9:20	MW1	MW1D: 6'1" and MW1S: 6'1"
9:25	MW4	MW4S: 3' and MW4D: 3'
9:35	MW2	MW2D: 3'9" and MW2S: 4'2"
9:40	MW8	MW8S: 3' and MW8D: 3'2". The water had dark color and some particles.
9:46		Finished readings.
9:50	CAF1	CHES and J&S Personnel Checkout

Moving Forward (Next Steps)

Action Item	Deadline	%Completion	Responsible Party
N/A	N/A	N/A	N/A

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 12, 2015

Weather History

Two (2) days prior to GW Level Monitoring event	Special Comments

Monday, August 10, 2015

« Previous Day Next

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	29 °C	29 °C	
Max Temperature	33 °C	32 °C	33 °C (1993)
Min Temperature	26 °C	26 °C	22 °C (1905)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	20	19	
Month to date cooling degree days	194	190	
Year to date cooling degree days	3698	3474	
Since 1 June cooling degree days	1357	1309	
Growing Degree Days	34 (Base 50)		
Moisture			
Dew Point	23 °C		
Average Humidity	74		
Maximum Humidity	91		
Minimum Humidity	56		
Precipitation			
Precipitation	T mm	4.06 mm	6.55 mm (1965)
Month to date precipitation	1.08	1.50	
Year to date precipitation	18.19	29.66	

Ref: Weather Underground

Weather History

One (1) day prior to GW Level Monitoring event	Special Comments

Tuesday, August 11, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	29 °C	29 °C	
Max Temperature	32 °C	32 °C	33 °C (2011)
Min Temperature	26 °C	26 °C	22 °C (1923)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	19	19	
Month to date cooling degree days	213	209	
Year to date cooling degree days	3717	3493	
Since 1 June cooling degree days	1376	1328	
Growing Degree Days	34 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	75		
Maximum Humidity	85		
Minimum Humidity	64		
Precipitation			
Precipitation	0.76 mm	4.32 mm	53.85 mm (1973)
Month to date precipitation	1.11	1.67	
Year to date precipitation	18.22	29.83	

Ref: Weather Underground

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 12, 2015

Weather History

Day of GW Level Monitoring event	Special Comments

Miércoles, Agosto 12, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Temperatura media	30 ° C	29 ° C	
Temperatura máxima	33 ° C	32 ° C	33 ° C (1993)
Temperatura mínima	27 ° C	26 ° C	20 ° C (1904)
Degree Days			
Grados día de calefacción	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	21	19	
Month to date cooling degree days	234	228	
Year to date cooling degree days	3738	3512	
Since 1 June cooling degree days	1397	1347	
Growing Degree Days	36 (Base 50)		
Moisture			
Punto de rocío	24 ° C		
Average Humidity	74		
Maximum Humidity	85		
Minimum Humidity	63		
Precipitación			
Precipitación	0.25 mm	4.32 mm	8.10 mm (1956)
Month to date precipitation	1.12	1.84	
Year to date precipitation	18.23	30.00	

Ref: Weather Underground

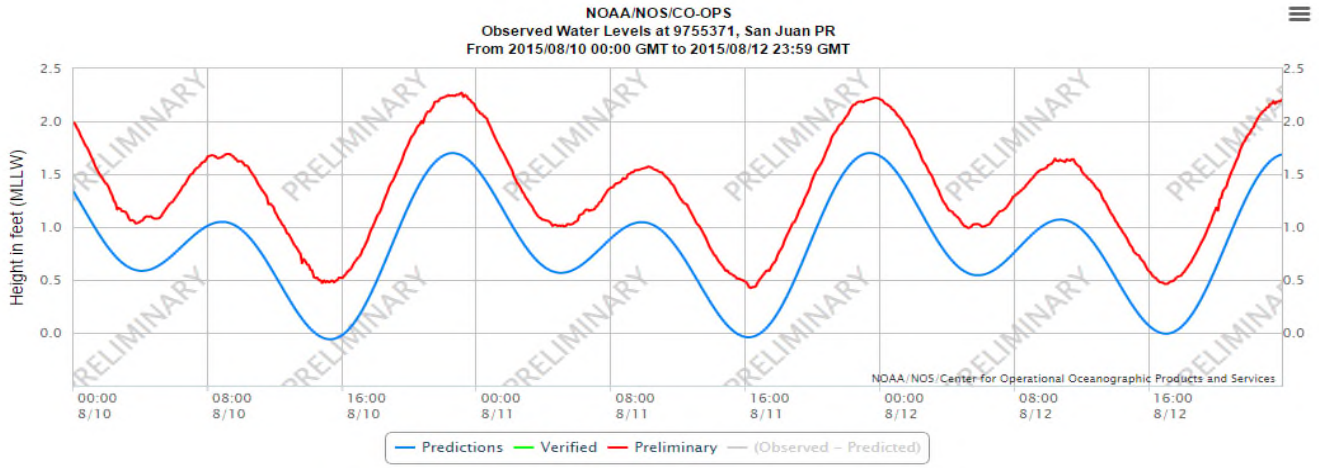
Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

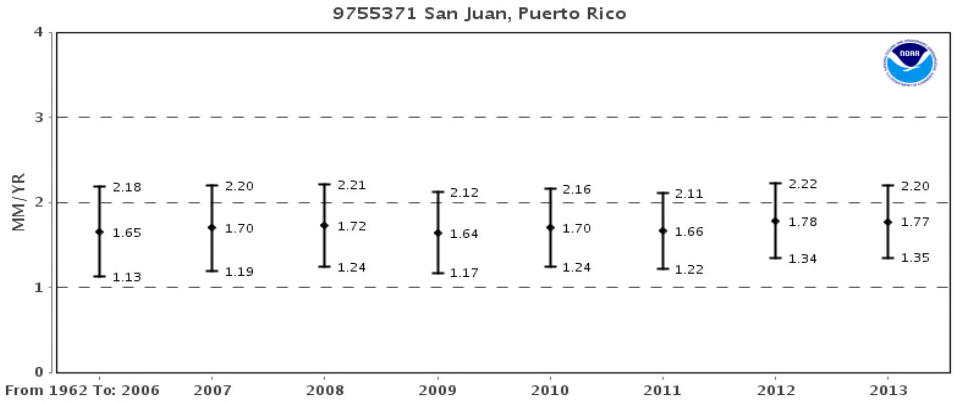
Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 12, 2015

Water Levels

Two (2) days prior to GW Level Monitoring event until day of event



Previous Mean Water Level Trends



Ref: National Oceanic and Atmospheric Administration

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 27, 2015

Phone:	787-751-7810	**CHES Representative:**	VCP

Time	Location	Activity / Observations
7:45		CHES and J&S Personnel arrived
8:00	CAF1	Jean Tirri from CAF provided IDs.
8:19	MW5	MW5S: 6'5" and MW5D: 6'8".
8:40	MW7	The MW7S and MW7D were covered with water; water extraction began but rainfall started. Moved to other points in the mean time.
8:52	MW9	MW9S: 5'5" and MW9D: 5'9"
8:58	MW10	MW10D: 6'3" and MW10S: 6'2"
9:10	MW11	MW11D:6'8" and MW11S: 6'5"
9:44	MW7	MW7 were covered with water. Asked CAF1 Air Hangar personnel for a water sweeper. Cleared the area of water. MW7D: 6'0 and MW7S: 5'10". Returned the sweeper to personnel.
9:50	MW6	MW6D: 6'1" and MW6S: 6'0"
9:56	MW3	MW3S: 6'5" and MW3D: 6'6
10:01	MW1	MW1D: 6'0" and MW1S: 6'0"
10:06	MW4	MW4D: 2'11" and MW4S: 3'1"
10:11	MW2	MW2S: 4'1" and MW2D: 3'9"
10:18	MW8	MW8S: 2'7" and MW8D: 3'0"
10:25	CAF1	CHES and J&S Personnel Checked out

Moving Forward (Next Steps)

Action Item	Deadline	%Completion	Responsible Party
N/A	N/A	N/A	N/A

Weather History

Two (2) days prior to GW Level Monitoring event | **Special Comments**

Tuesday, August 25, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	26 °C	29 °C	
Max Temperature	28 °C	32 °C	33 °C (1981)
Min Temperature	24 °C	26 °C	21 °C (1913)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	14	19	
Month to date cooling degree days	461	475	
Year to date cooling degree days	3965	3759	
Since 1 June cooling degree days	1624	1594	
Growing Degree Days	28 (Base 50)		
Moisture			
Dew Point	26 °C		
Average Humidity	94		
Maximum Humidity	100		
Minimum Humidity	88		
Precipitation			
Precipitation	12.19 mm	5.08 mm	5.28 mm (1976)
Month to date precipitation	5.20	4.22	
Year to date precipitation	22.31	32.38	

Ref: Weather Underground

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 27, 2015

Weather History

One (1) day prior to GW Level Monitoring event | **Special Comments**

Wednesday, August 26, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	27 °C	29 °C	
Max Temperature	29 °C	32 °C	35 °C (2009)
Min Temperature	25 °C	26 °C	21 °C (1956)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	16	19	
Month to date cooling degree days	477	494	
Year to date cooling degree days	3981	3778	
Since 1 June cooling degree days	1640	1613	
Growing Degree Days	30 (Base 50)		
Moisture			
Dew Point	26 °C		
Average Humidity	91		
Maximum Humidity	100		
Minimum Humidity	82		
Precipitation			
Precipitation	0.00 mm	5.08 mm	6.12 mm (1984)
Month to date precipitation	5.20	4.42	
Year to date precipitation	22.31	32.58	

Ref: Weather Underground

Weather History

Day of GW Level Monitoring event | **Special Comments**

Thursday, August 27, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	29 °C	
Max Temperature	31 °C	32 °C	33 °C (1982)
Min Temperature	25 °C	26 °C	22 °C (1958)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	18	19	
Month to date cooling degree days	495	513	
Year to date cooling degree days	3999	3797	
Since 1 June cooling degree days	1658	1632	
Growing Degree Days	32 (Base 50)		
Moisture			
Dew Point	25 °C		
Average Humidity	84		
Maximum Humidity	100		
Minimum Humidity	68		
Precipitation			
Precipitation	6.35 mm	5.08 mm	5.84 mm (1970)
Month to date precipitation	5.45	4.62	
Year to date precipitation	22.56	32.78	

Ref: Weather Underground

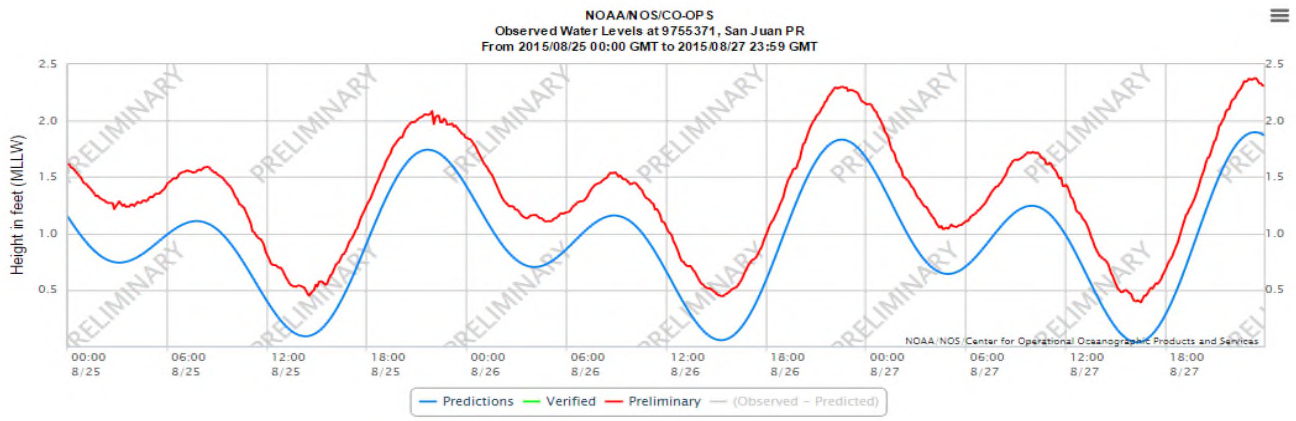
Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

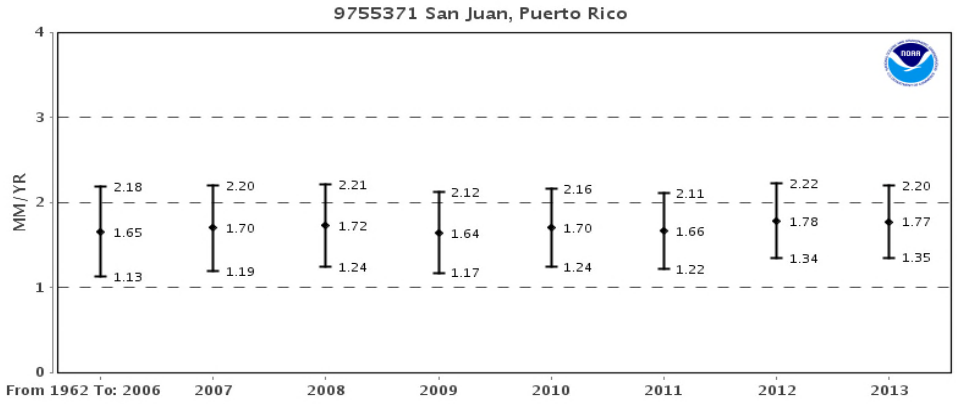
Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 27, 2015

Water Levels

Two (2) days prior to GW Level Monitoring event until day of event



Previous Mean Water Level Trends



Ref: National Oceanic and Atmospheric Administration

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 20, 2015

Phone:	787-751-7810	**CHES Representative:**	NDM

Time	Location	Activity / Observations
7:45	CAF1	CHES and J&S Personnel arrived
8:00	CAF1	Amy from CAF arrived; provided IDs
8:16	MW3	Arrived for GW level readings. Done at 8:23
8:24	MW5	Arrived for GW level readings. Both wells are full of water passed the water-tight plug. Drained water.
8:27	MW5	Done
8:28	MW6	Arrived for GW level readings. Done at 8:38
8:33	MW7	Arrived for GW level readings. Both wells are full of water passed the water-tight plug. Evacuated water prior to opening well cap.
8:42	MW7	Done
8:44	MW10	Arrived for GW level readings. Done at 8:48
8:50	MW11	Arrived for GW level readings. Done at 8:54
9:03	MW1	Arrived for GW level readings. Done at 9:06
9:08	MW4	Arrived for GW level readings. Done at 9:11
9:12	MW2	Arrived for GW level readings. Done at 9:18
9:19	MW8	Arrived for GW level readings. Done at 9:23
9:30	CAF1	CHES and J&S Personnel Checked out

Moving Forward (Next Steps)

Action Item	Deadline	%Completion	Responsible Party
N/A	N/A	N/A	N/A

Weather History

Two (2) days prior to GW Level Monitoring event | **Special Comments**

Tuesday, August 18, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	27 °C	29 °C	
Max Temperature	30 °C	32 °C	34 °C (1991)
Min Temperature	24 °C	26 °C	22 °C (1956)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	16	19	
Month to date cooling degree days	343	342	
Year to date cooling degree days	3847	3626	
Since 1 June cooling degree days	1506	1461	
Growing Degree Days	30 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	85		
Maximum Humidity	100		
Minimum Humidity	70		
Precipitation			
Precipitation	2.03 mm	4.83 mm	45.72 mm (1967)
Month to date precipitation	3.62	2.91	
Year to date precipitation	20.73	31.07	

Ref: Weather Underground

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 20, 2015

Weather History

One (1) day prior to GW Level Monitoring event | **Special Comments**

Wednesday, August 19, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	29 °C	
Max Temperature	31 °C	32 °C	34 °C (1991)
Min Temperature	24 °C	26 °C	23 °C (1956)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	17	19	
Month to date cooling degree days	360	361	
Year to date cooling degree days	3864	3645	
Since 1 June cooling degree days	1523	1480	
Growing Degree Days	31 (Base 50)		
Moisture			
Dew Point	24 °C		
Average Humidity	85		
Maximum Humidity	100		
Minimum Humidity	70		
Precipitation			
Precipitation	0.00 mm	4.57 mm	34.29 mm (1926)
Month to date precipitation	3.62	3.09	
Year to date precipitation	20.73	31.25	

Ref: Weather Underground

Weather History

Day of GW Level Monitoring event | **Special Comments**

Thursday, August 20, 2015

« Previous Day Next Day »

Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	28 °C	29 °C	
Max Temperature	31 °C	32 °C	35 °C (1980)
Min Temperature	25 °C	26 °C	20 °C (1904)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	0	0	
Cooling Degree Days	18	19	
Month to date cooling degree days	378	380	
Year to date cooling degree days	3882	3664	
Since 1 June cooling degree days	1541	1499	
Growing Degree Days	32 (Base 50)		
Moisture			
Dew Point	25 °C		
Average Humidity	86		
Maximum Humidity	100		
Minimum Humidity	72		
Precipitation			
Precipitation	0.00 mm	4.57 mm	7.87 mm (1901)
Month to date precipitation	3.62	3.27	
Year to date precipitation	20.73	31.43	

Ref: Weather Underground

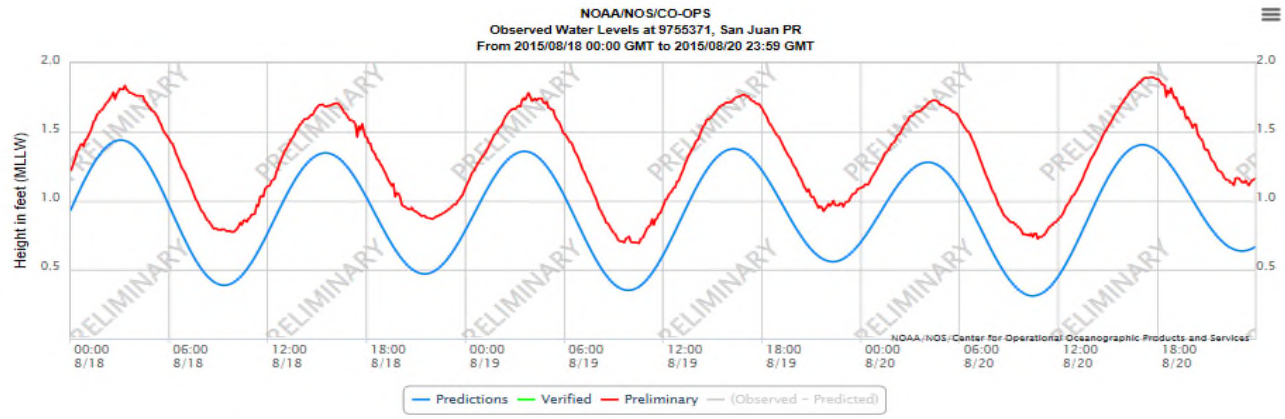
Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
www.flraches.com

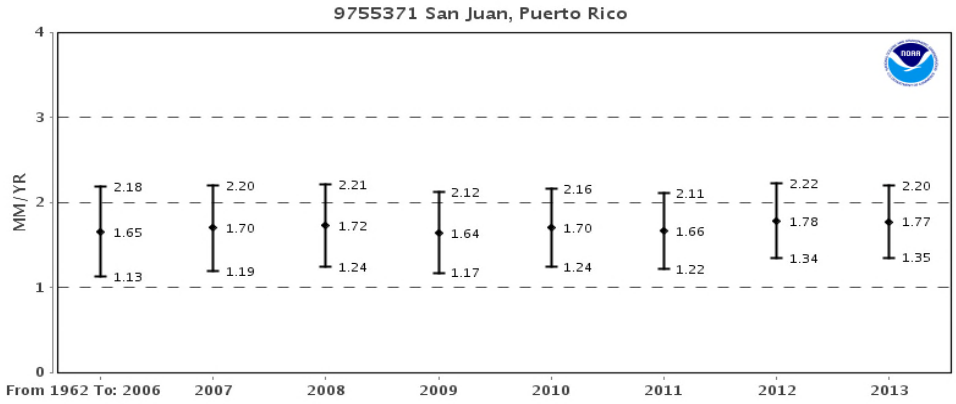
Project:	CAF MW Weekly Groundwater levels reading		
Address:	LMMIA	**Date:**	August 20, 2015

Water Levels

Two (2) days prior to GW Level Monitoring event until day of event



Previous Mean Water Level Trends



Ref: National Oceanic and Atmospheric Administration

Daily Activities

Prepared by: CHES Services Corp. d/b/a: Fernando L. Rodríguez, PE & Associate:
Chemical/Environmental Engineering & Industrial Hygiene Consultant:
www.flraches.com

Project:	CAF Groundwater Monitoring Wells		
Address:	LMMIA	**Date:**	August-15

Weather History

Climatological Data for SAN JUAN L M MARIN AP, PR - August 2015

Click column heading to sort ascending, click again to sort descending.

Date	Temperature				HDD	CDD	Precipitation	New Snow	Snow Depth
	Maximum	Minimum	Average	Departure					
2015-08-01	90	78	84.0	0.5	0	19	0.00	0.0	0
2015-08-02	88	76	82.0	-1.5	0	17	0.36	0.0	0
2015-08-03	92	79	85.5	2.0	0	21	0.05	0.0	0
2015-08-04	90	79	84.5	0.9	0	20	T	0.0	0
2015-08-05	90	77	83.5	-0.1	0	19	0.12	0.0	0
2015-08-06	90	79	84.5	0.9	0	20	0.04	0.0	0
2015-08-07	90	76	83.0	-0.6	0	18	0.05	0.0	0
2015-08-08	92	80	86.0	2.4	0	21	0.44	0.0	0
2015-08-09	90	78	84.0	0.3	0	19	0.00	0.0	0
2015-08-10	92	78	85.0	1.3	0	20	0.00	0.0	0
2015-08-11	90	78	84.0	0.3	0	19	0.03	0.0	0
2015-08-12	91	80	85.5	1.8	0	21	0.00	0.0	0
2015-08-13	90	78	84.0	0.3	0	19	0.01	0.0	0
2015-08-14	91	79	85.0	1.3	0	20	0.01	0.0	0
2015-08-15	89	80	84.5	0.8	0	20	0.01	0.0	0
2015-08-16	91	75	83.0	-0.7	0	18	1.82	0.0	0
2015-08-17	87	74	80.5	-3.3	0	16	0.57	0.0	0
2015-08-18	86	75	80.5	-3.3	0	16	0.08	0.0	0
2015-08-19	87	76	81.5	-2.3	0	17	0.00	0.0	0
2015-08-20	88	77	82.5	-1.3	0	18	0.00	0.0	0
2015-08-21	88	76	82.0	-1.8	0	17	1.04	0.0	0
2015-08-22	89	75	82.0	-1.8	0	17	0.00	0.0	0
2015-08-23	87	77	82.0	-1.8	0	17	0.02	0.0	0
2015-08-24	88	78	83.0	-0.8	0	18	0.04	0.0	0
2015-08-25	82	75	78.5	-5.3	0	14	0.48	0.0	0
2015-08-26	85	77	81.0	-2.8	0	16	0.00	0.0	0
2015-08-27	88	77	82.5	-1.3	0	18	0.25	0.0	0
2015-08-28	89	76	82.5	-1.3	0	18	0.22	0.0	0
2015-08-29	89	80	84.5	0.7	0	20	0.00	0.0	0
2015-08-30	89	78	83.5	-0.2	0	19	0.29	0.0	0
2015-08-31	89	79	84.0	0.3	0	19	T	0.0	0
Sum	2757	2400	-	-	0	571	5.93	0.0	-
Average	88.9	77.4	83.2	-0.5	-	-	-	-	0.0
Normal	89.2	78.2	83.7	-	0	580	5.46	0.0	-

Ref: NOAA NWSF; NOWData - NOAA Online Weather Dat; San Juan LMMIA Statio

Second Bimonthly Report

Groundwater Monitoring Wells at the Luis Muñoz Marin International Airport (LMMIA)

2.0 GROUNDWATER LEVELS DATABASE

The following groundwater levels database includes data corresponding to the twenty-two (22) wells installed at the LMMIA.

Fernando L. Rodríguez, P.E. & Associates
Chemical/Environmental Engineering & Industrial Hygiene Consultants
PO BOX 193430 San Juan, PR 00919-3430
Tel.: 787-751-7810 | Fax: 787-751-8988 | flrodriguez@flraches.com | www.flraches.com

Groundwater Monitoring Wells Construction and Sampling Project

Weekly GW Level Readings

GW Level Monitoring Start: May 18, 2015 **GW Level Monitoring Projected End:** August 24, 2015

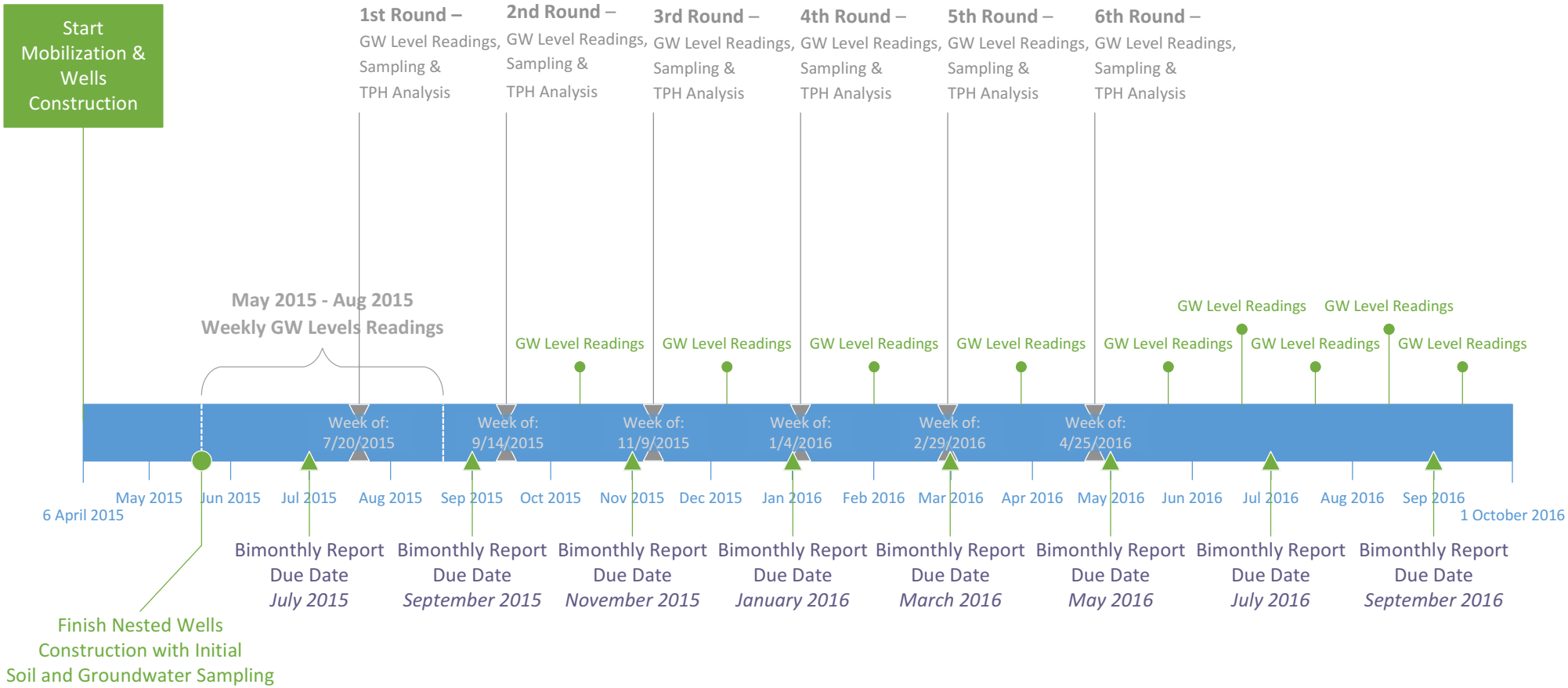
	Well ID	MW1S	MW1D	MW2S	MW2D	MW3S	MW3D	MW4S	MW4D	MW5S	MW5D	MW6S	MW6D	MW7S	MW7D	MW8S	MW8D	MW9S	MW9D	MW10S	MW10D	MW11S	MW11D
	Well depth		20.5'	10'	20'		20'		20' 5"		20'		20.5'		20.5'	10'	20.5'		20.5'		20.5'		23.5'
Week of	Date																						
May 18, 2015	May 18, 2015	6' 3"	6' 4"	4' 7"	4' 4"	-	-	3' 5"	2' 8"	6' 9"	8' 6"	-	-	-	-	-	-	-	-	-	-	-	-
May 18, 2015	May 19, 2015	-	-	-	-	-	-	-	-	-	-	6' 3"	6' 4"	6'	6' 6"	-	-	6'	13'	6' 9"	6' 9"	6' 3"	9'
May 18, 2015	May 20, 2015	-	-	-	-	6'4"	6'5"	-	-	-	-	-	-	-	-	2'8"	3'	7'	7'7"	-	-	7'4"	7'4"
May 25, 2015	May 28, 2015	6'	6'	4'1"	4'	6'5"	6'6"	2'11"	2'11"	NR	6'10"	5'10"	6'6"	5'11"	6'11"	3'	3'1"	6'11"	7'2"	6'6"	6'8"	7'2"	7'
June 1, 2015	June 4, 2015	6' 3"	6' 5"	4'	3' 6"	6' 3"	6' 2"	3'	3'	6'	6' 8"	5' 6"	6'	5' 8"	6' 1"	2' 8"	2' 2"	5' 6"	7'	6' 3"	6' 3"	6' 7"	7'
June 8, 2015	June 11, 2015	5' 9"	5' 11"	4' 1"	3' 10"	7'	7'	3'	3' 3"	6' 11"	7' 1"	6' 3"	6' 6"	6' 1"	4' 3"	2' 11"	3' 6"	6' 6"	7' 1"	7'	6' 10"	7' 3"	7' 6"
June 15, 2015	June 18, 2015	-	-	4'	3' 6"	-	-	3' 2"	2' 11"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June 15, 2015	June 19, 2015	5' 10"	5' 7"	-	-	6' 4"	6' 3"	-	-	6' 11"	6' 5"	5' 6"	6'	5' 7"	4' 1"	2' 11"	3'	5' 11"	6' 6"	6' 4"	6' 4"	7'	7'
June 22, 2015	June 25, 2015	6'	6' 4"	4' 4"	4' 1"	6' 9"	6' 10"	3' 4"	3' 3"	6' 9"	6' 11"	6' 2"	6' 4"	6' 1"	5'	3'	3' 4"	5' 10"	6' 7"	6' 10"	6' 9"	7' 6"	7' 5"
June 29, 2015	July 2, 2015	5' 11"	6' 3"	4' 4"	4' 1"	6' 7"	6' 9"	3' 3"	3' 2"	6' 9"	6' 11"	6' 2"	6' 5"	6' 1"	6' 4"	3'	3' 4"	5' 10"	6' 6"	6' 8"	6' 8"	7' 2"	7' 3"
July 6, 2015	July 9, 2015	5' 10"	6' 3"	4' 3"	4'	6' 8"	6' 9"	3' 4"	3' 2"	6' 8"	6' 10"	6' 2"	6' 4"	6' 1"	6' 3"	3'	3' 4"	5' 10"	6' 4"	6' 8"	6' 8"	7' 7"	7' 4"
July 13, 2015	July 16, 2015	6'	6' 2"	4' 2"	3' 11"	6' 6"	6' 8"	3' 3"	3' 2"	6' 8"	6' 10"	6' 2"	6' 4"	6' 1"	6' 4"	2' 11"	3' 3"	6' 3"	6' 5"	6' 7"	6' 7"	7'	7' 3"
July 20, 2015	July 21, 2015	-	-	-	-	6' 7"	6' 9"	-	-	6' 7"	6' 10"	6' 1"	6' 4"	6'	6' 4"	-	-	6' 2"	6' 7"	6' 7"	6' 7"	7' 3"	7' 4"
July 20, 2015	July 22, 2015	6'	6' 4"	4' 2"	4'	-	-	3' 4"	3' 2"	-	-	-	-	-	-	3'	3' 3"	-	-	-	-	-	-
July 27, 2015	July 30, 2015	6'	6' 2"	4' 4"	4'	6' 7"	6' 8"	3' 4"	3' 1"	6' 8"	6' 8"	6' 2"	6' 3"	6'	7' 7"	3' 1"	3' 5"	6' 1"	6' 3"	6' 7"	6' 7"	7' 8"	7' 6"
August 3, 2015	August 6, 2015	6' 1"	6' 2"	4' 2"	4'	6' 8"	6' 9"	3' 4"	3' 2"	6' 7"	6' 10"	6' 5"	6' 4"	6' 2"	7' 3"	3' 1"	3' 4"	6' 10"	6' 2"	6' 8"	6' 10"	7' 9"	7' 7"
August 10, 2015	August 12, 2015	6'1"	6'1"	4' 2"	3'9"	6'6"	6'7"	3'	3'	6'7"	6'9"	6'7"	6'1"	6'	6'2"	3'	3'2"	5'9"	6'2"	6'6"	6'6"	7'6"	7'6"
August 17, 2015	August 20, 2015	6'	5' 10"	3' 10"	4' 1"	6' 8"	6' 7"	3'	3' 1"	6' 7"	6' 8"	6' 1"	6' 1"	5' 11"	6' 2"	2' 10"	3'	5' 6"	6'	6' 3"	6' 4"	6' 8"	6' 11"
August 24, 2015	August 27, 2015	6'	6'	4'1"	3'9"	6'5"	6'6"	3'	2'11"	6'5"	6'8"	6'	6'1"	5'10"	6'	2'7"	3'	5'5"	5'9"	6'2"	6'3"	6'5"	6'8"

Second Bimonthly Report

Groundwater Monitoring Wells at the Luis Muñoz Marin International Airport (LMMIA)

3.0 PROJECT PROGRESS AND/OR PROPOSED SCHEDULE

The following pages provide project progress details and an updated proposed schedule for the tasks agreed upon with U.S. EPA.



Rev.: June 3, 2015

TITLE

Caribbean Airport Facilities, Inc.
LMMIA, Carolina, PR
Eleven (11) Nested Groundwater Monitoring Wells Construction with Bimonthly Sampling/Analysis Timeline

Notes:

1. During the months of April and May 2015, groundwater (GW) and soil samples were collected at each one of the nested wells as they were constructed.
2. The following 3-month period, on a weekly basis, GW levels (shallow and deep) are being logged, and monthly thereafter.
3. After the initial sampling, the nested wells are to be sampled and samples to be analyzed for TPH analysis by the designated laboratory on a bimonthly basis (every 2 months) for the first year.

M. LaReau (EPA): After sampling and water level measurements have commenced, CAF can make a recommendation based on the data to alter this schedule. At that time, EPA will review all documents presented to determine if a change is warranted.

Second Bimonthly Report

Groundwater Monitoring Wells at the Luis Muñoz Marin International Airport (LMMIA)

4.0 REFERENCES

1 Weather Underground. Historical Weather. [Internet]. 2015 Available from: http://www.wunderground.com/history/.

2 Center for Operational Oceanographic Products and Services. Observed Tides/Water Levels at 9755371, San Juan, PR. [Internet]. Available from: http://tidesandcurrents.noaa.gov/waterlevels.html.