Excerpt 18

Revised Air Quality Modeling Protocol, April, 2010, AR I.A.2.a

ARCADIS
Infrastructure, environment, buildings

Imagine the result

EnergyAnswers International
Resource Recovery Solutions

Energy Answers International

PSD Air Quality Modeling Protocol

For the proposed
Resource Recovery Facility
Arecibo, Puerto Rico

Bario Cambalache, Arecibo, Puerto Rico

Draft Submitted February 2010

Revision Submitted April 2010

height, exit temperatures, and exit velocities are given for each operating scenario to be analyzed.

- A description of how the good engineering practice (GEP) stack height analysis will be conducted and how building downwash parameters will be evaluated.

- A description of the model selected and the procedures for representing site-specific characteristics including background ambient concentrations, meteorology, surface roughness, and topography. The proposed receptor grid configuration is also described.

- A general description of the methodology for evaluating secondary impacts.

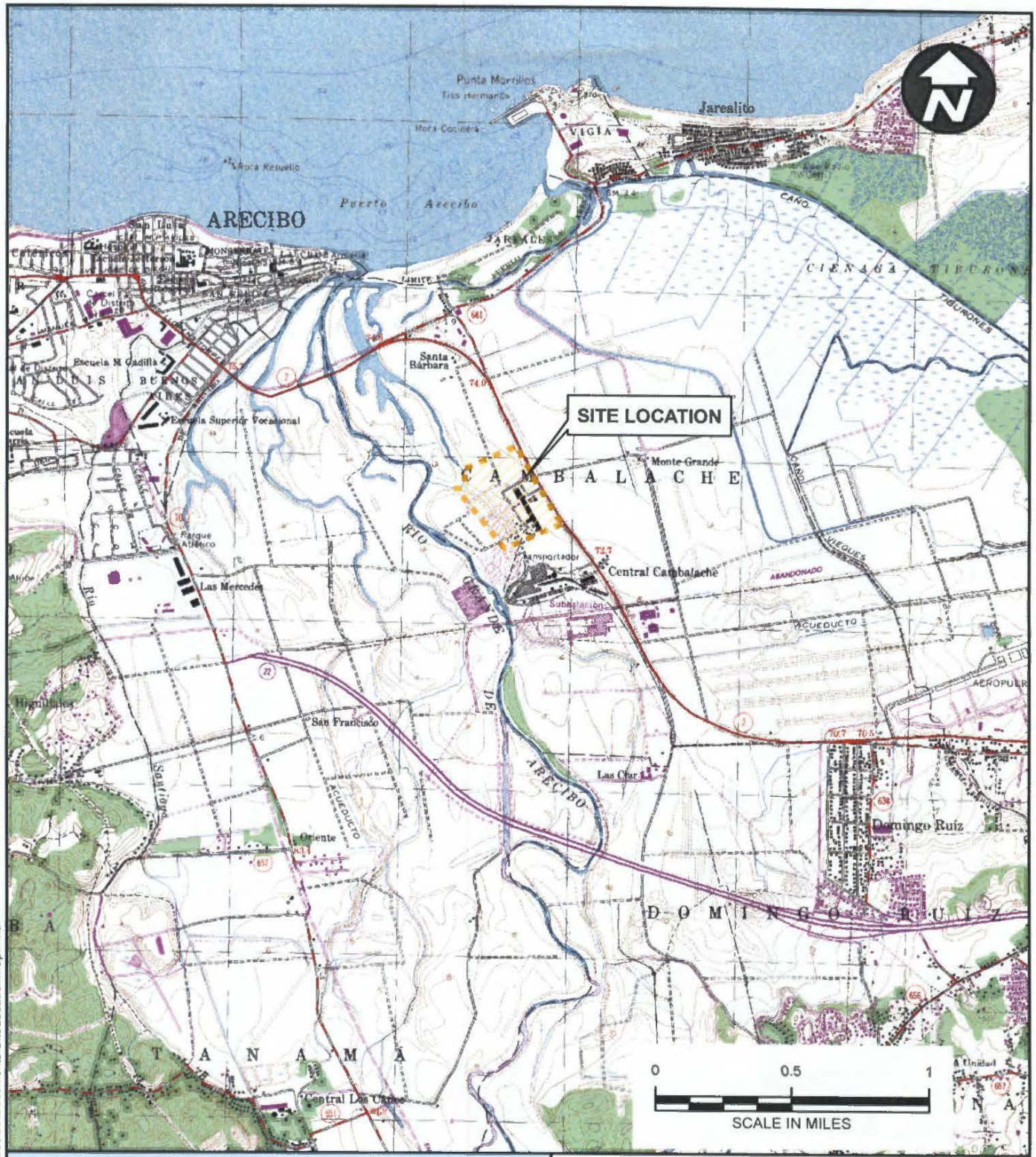
2.0 Project and Site Description

Energy Answers is proposing to construct a nominal 70-MW electric generating facility to be fired primarily with PRF to produce steam and electricity. The boilers will fire approximately 2,000 tons per day of PRF. MSW will be processed to produce PRF, and the PRF will then be combusted to produce steam and electricity. Additionally, the facility is designed to fire urban wood waste, tire derived fuel (TDF), automotive shredder residue (ASR), and bagasse.

The facility will be located in Barrio Cambalache, Municipality of Arecibo, Puerto Rico. Figure 1 shows the location of the site on the island, and Figure 2 provides the location of the site on a United States Geological Survey (USGS) topographic map. The approximate UTM coordinates for the facility are 742.688 km E and 2,042.698 km N (UTM Zone 19) with plant grade at approximately 4 feet (1.2 meters) above mean sea level (MSL). The facility will be built such that the waste receiving, waste processing, and energy recovery operations are conducted within the boundaries of the site.

The topography in the vicinity of the site is generally flat. The shoreline is approximately 1 mile to the north. To the south, terrain gently increases in elevation. A review of USGS 7.5-minute quadrangle maps indicates that almost all terrain within 10 kilometers (km) of the site is below the stack height. Figure 2 displays the location of the plant and surrounding area. A site layout depiction is provided in Figure 3.

The nearest Class I area to the proposed plant site is the Virgin Island National Park on the Island of St. John, located approximately 125 miles to the east.



ENERGY ANSWERS
ARECIBO, PUERTO RICO

SITE LOCATION MAP

ARCADIS

FIGURE
2

CITY:NOVI DIV/GROUP:ENV DB: PIC: PM: TM: TR: PROJECT NUMBER:
G:\GIS\Project Files\EnergyAnswers\Arecibo\Documents\SiteLocationMap.mxd

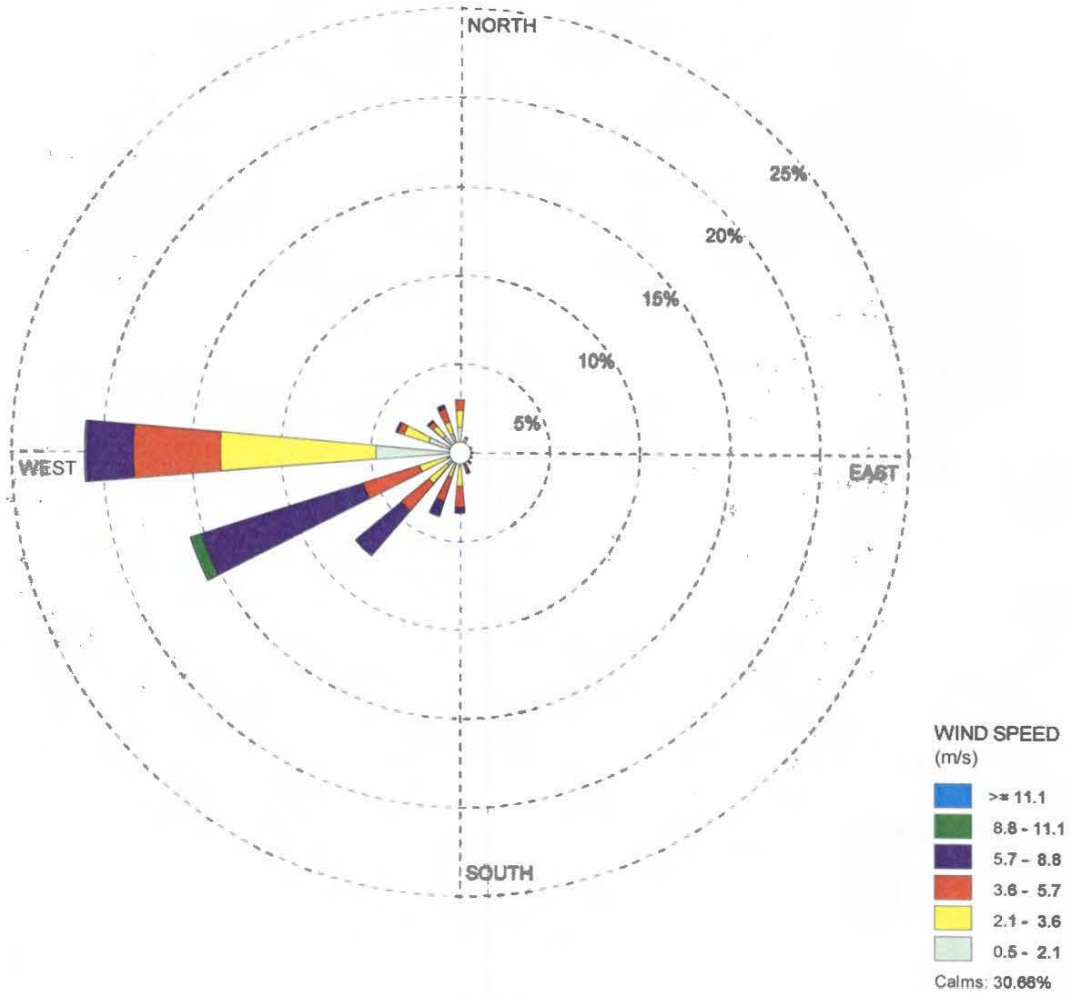
WIND ROSE PLOT:

FIGURE B-4

2005 San Juan/Isla Verde International Airport, Puerto Rico

DISPLAY:

Wind Speed
Flow Vector (blowing to)



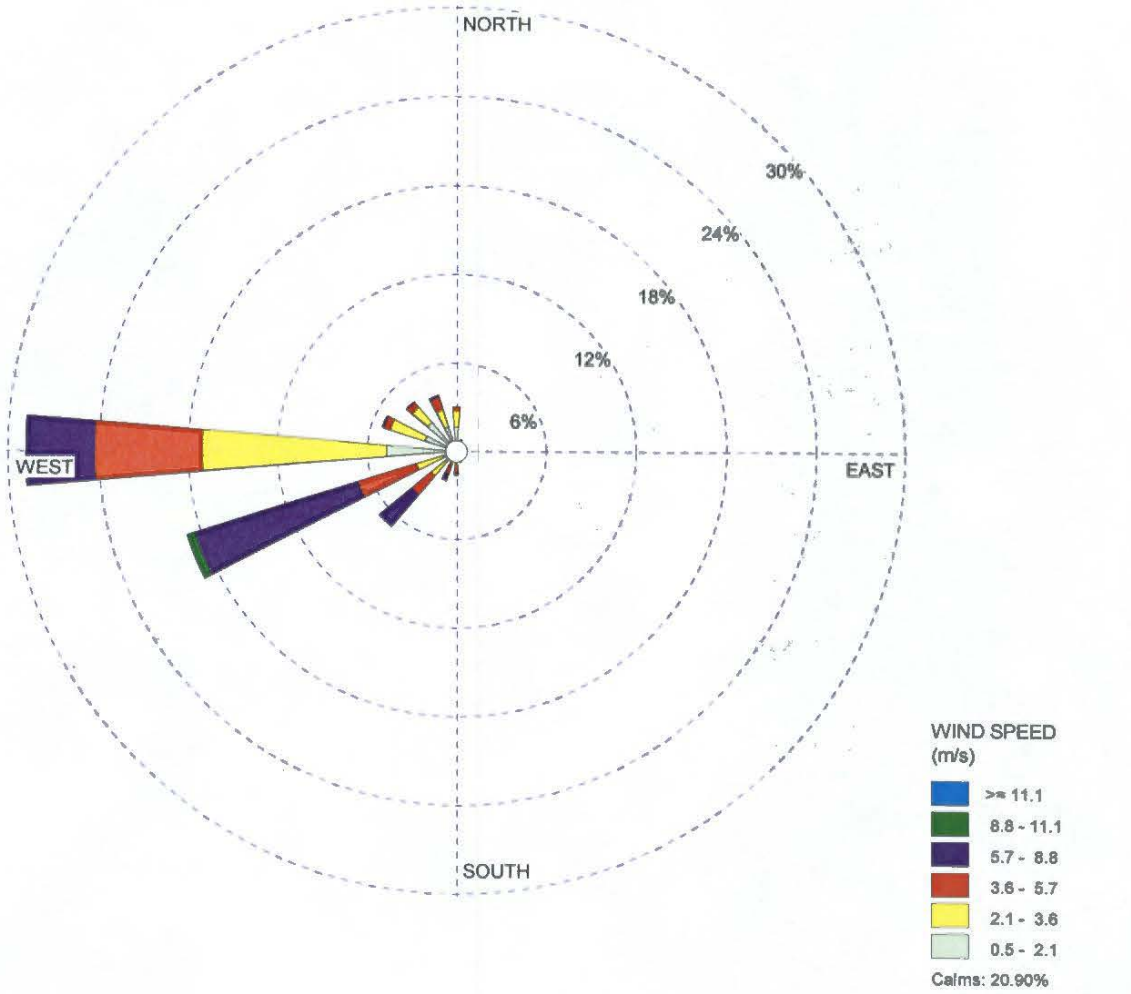
COMMENTS:	DATA PERIOD:	COMPANY NAME:	
Data Source: National Oceanic and Atmospheric Administration - National Climatic Data Center (http://cdo.ncdc.noaa.gov/pls/plclimprod/poemain.accessrouter?datasetabbv=DS3505)	**2005** **Jan 1 - Dec 31** **00:00 - 23:00**	**ARCADIS-US, Inc.**	
		MODELER: **A. Rayner**	ARCADIS *Infrastructure, environment, buildings*
	CALM WINDS: **30.66%**	TOTAL COUNT: **8751 hrs.**	
	AVG. WIND SPEED: **2.81 m/s**	DATE: **3/30/2010**	PROJECT NO.: **NCENRGY1.0005**

WRPLOT View - Lakes Environmental Software

WIND ROSE PLOT:

FIGURE B-5
2006 San Juan/Isla Verde International Airport, Puerto Rico

DISPLAY:
Wind Speed
Flow Vector (blowing to)



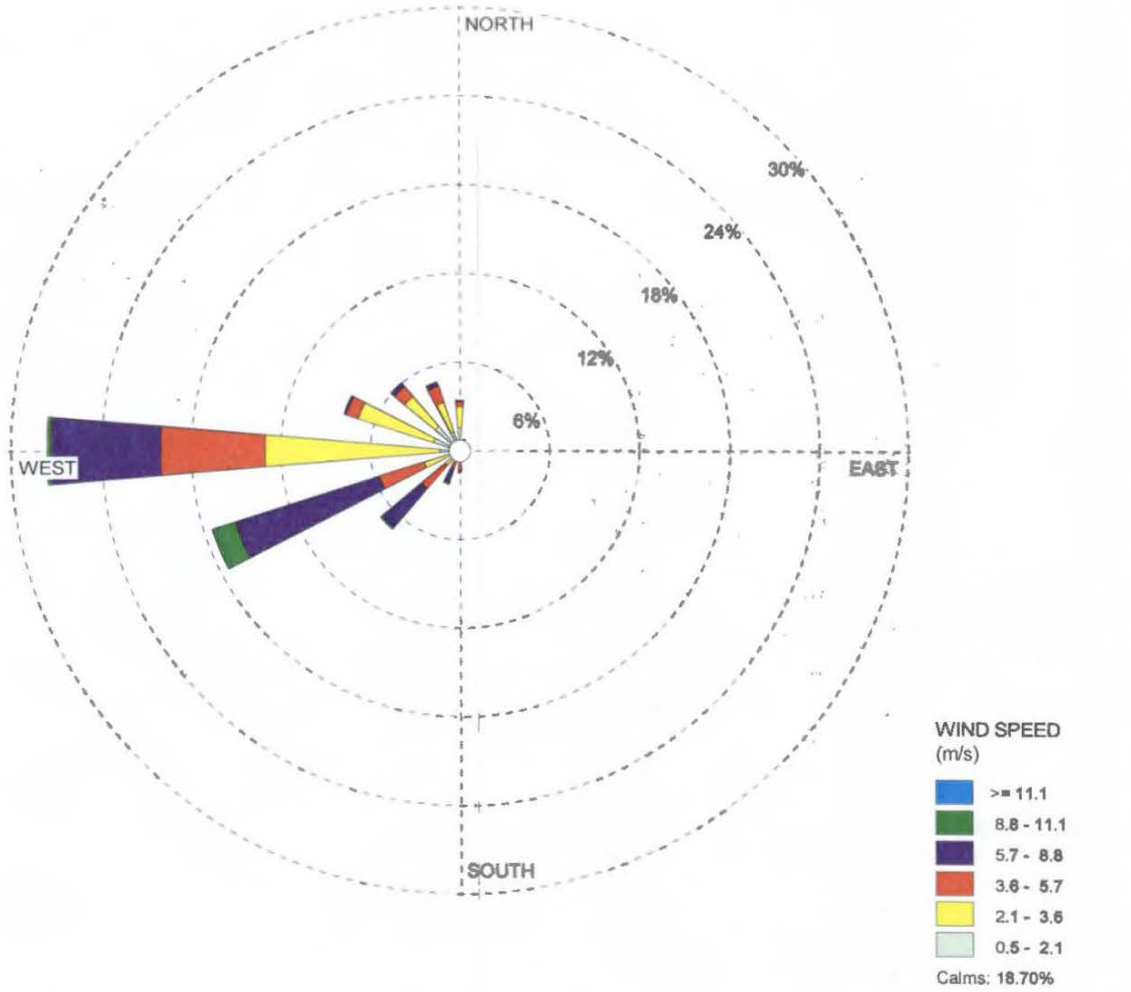
COMMENTS:	DATA PERIOD:	COMPANY NAME:	
Data Source: National Oceanic and Atmospheric Administration - National Climatic Data Center (http://cdo.ncdc.noaa.gov/pls/plclimprod/poemain.accessrouter?datasetabbv=DS3505)	**2006** **Jan 1 - Dec 31** **00:00 - 23:00**	**ARCADIS-US, Inc.**	
		MODELER: **A. Rayner**	ARCADIS Infrastructure, environment, buildings
	CALM WINDS: **20.90%**	TOTAL COUNT: **8758 hrs.**	
	AVG. WIND SPEED: **3.13 m/s**	DATE: **3/30/2010**	PROJECT NO.: **NCENRGY1.0005**

WRPLOT View - Lakes Environmental Software

WIND ROSE PLOT:

FIGURE B-6
2007 San Juan/Isla Verde International Airport, Puerto Rico

DISPLAY:
Wind Speed
Flow Vector (blowing to)



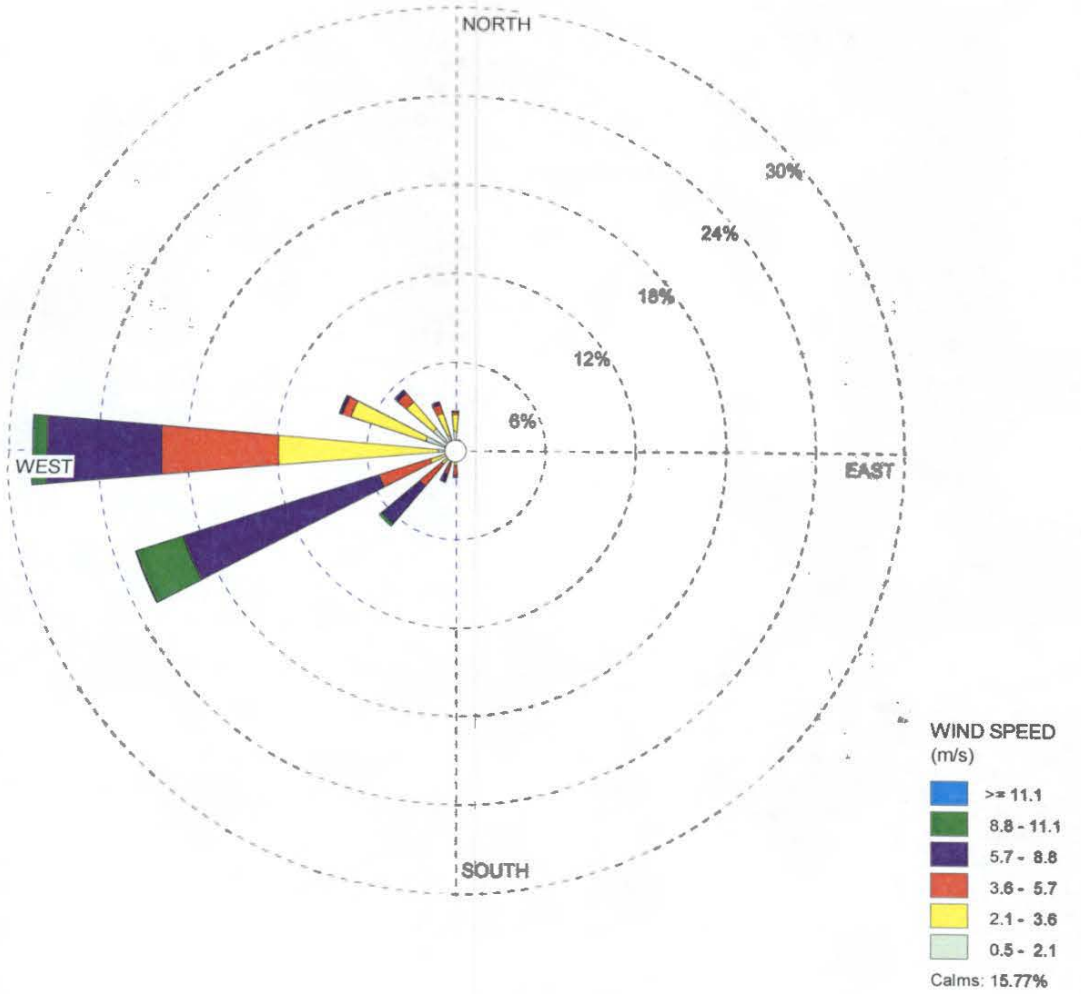
COMMENTS:	DATA PERIOD:	COMPANY NAME:	
Data Source: National Oceanic and Atmospheric Administration - National Climatic Data Center (http://cdo.ncdc.noaa.gov/pls/plclimprod/poemain.accessrouter?datasetabbv=DS3505)	**2007** **Jan 1 - Dec 31** **00:00 - 23:00**	**ARCADIS-US, Inc.**	
		MODELER: **A. Rayner**	ARCADIS Infrastructure, environment, buildings
	CALM WINDS: **18.70%**	TOTAL COUNT: **8613 hrs.**	
	AVG. WIND SPEED: **3.45 m/s**	DATE: **3/30/2010**	PROJECT NO.: **NCENRGY1.0005**

WRPLOT View - Lakes Environmental Software

WIND ROSE PLOT:

FIGURE B-7
2008 San Juan/Isla Verde International Airport, Puerto Rico

DISPLAY:
Wind Speed
Flow Vector (blowing to)



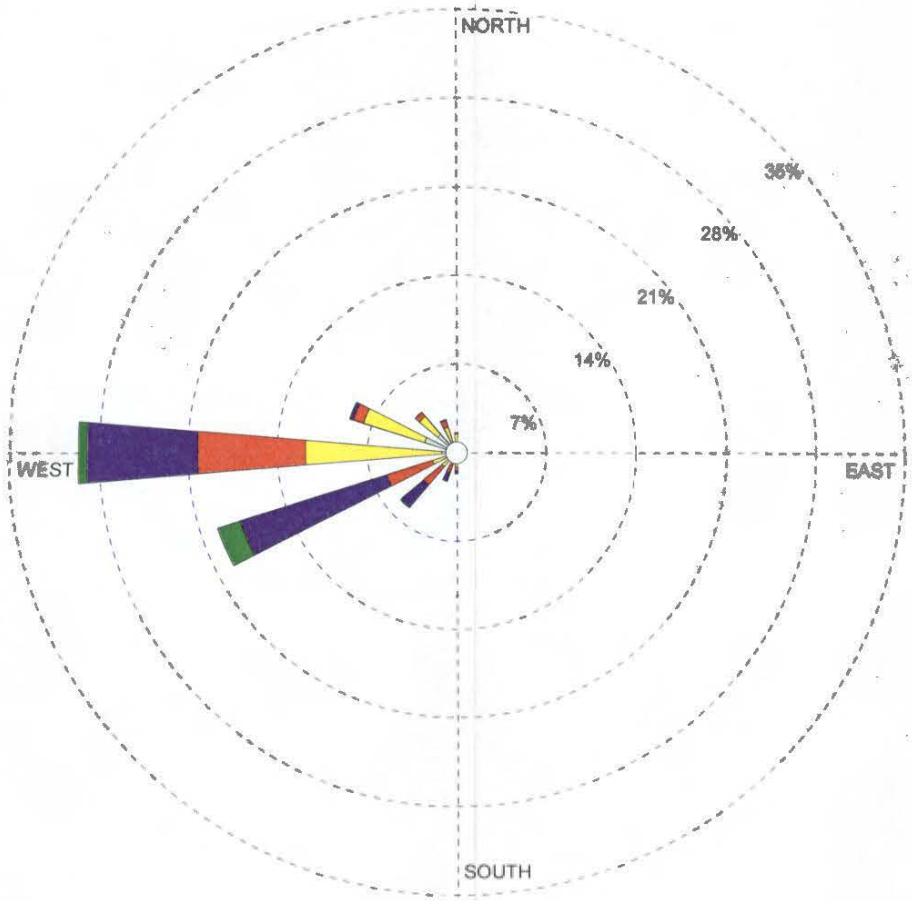
COMMENTS:	DATA PERIOD:	COMPANY NAME:	
Data Source: National Oceanic and Atmospheric Administration - National Climatic Data Center (http://cdo.ncdc.noaa.gov/pls/plclimprod/poemain.accessrouter?datasetabbv=DS3505)	**2008** **Jan 1 - Dec 31** **00:00 - 23:00**	**ARCADIS-US, Inc.**	
		MODELER: **A. Rayner**	ARCADIS *infrastructure, environment, buildings*
	CALM WINDS: **15.77%**	TOTAL COUNT: **9048 hrs.**	
	AVG. WIND SPEED: **3.87 m/s**	DATE: **3/30/2010**	PROJECT NO.: **NCENRGY1.0005**

WRPLOT View - Lakes Environmental Software

WIND ROSE PLOT:

FIGURE B-8
2009 San Juan/Isla Verde International Airport, Puerto Rico

DISPLAY:
Wind Speed
Flow Vector (blowing to)



WIND SPEED
(m/s)

- >= 11.1
- 8.8 - 11.1
- 5.7 - 8.8
- 3.6 - 5.7
- 2.1 - 3.6
- 0.5 - 2.1

Calms: 21.22%

COMMENTS:	DATA PERIOD:	COMPANY NAME:	
Data Source: National Oceanic and Atmospheric Administration - National Climatic Data Center (http://cdo.ncdc.noaa.gov/pls/plclimprod/poemain.accessrouter?datasetabbv=DS3505)	2009 Jan 1 - Dec 31 00:00 - 23:00	ARCADIS-US, Inc.	
		MODELER: A. Rayner	ARCADIS Infrastructure, environment, buildings
	CALM WINDS: 21.22%	TOTAL COUNT: 9116 hrs.	
	AVG. WIND SPEED: 3.51 m/s	DATE: 3/30/2010	PROJECT NO.: NCENRGY1.0005

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