

Caithness Long Island Energy Center II

Draft Environmental Impact Statement

Lead Agency:

Town of Brookhaven
One Independence Hill
Farmingville, NY 11738

Applicant:

Caithness Long Island II, LLC
565 Fifth Avenue, 29th FL
New York, NY, 10017

Prepared by:

*TRC Environmental Corporation
1200 Wall Street West, 5th Floor
Lyndhurst, NJ 07071*

December 2013

**Application for Special Permit for Electric Generating Facility Use -
Caithness Long Island Energy Center II**

North of the terminus of Zorn Boulevard
(adjacent to 50 Zorn Boulevard)
Yaphank, Town of Brookhaven, Suffolk County, NY.

**Draft Environmental Impact Statement
December 2013**

Lead Agency:

Town of Brookhaven
One Independence Hill
Farmingville, NY 11738

Contact Person:

Peter E. Fountaine, Sr. Environmental Analyst
Division of Environmental Protection
pfountaine@BROOKHAVEN.ORG
(631) 451-6455

Applicant:

Caithness Long Island II, LLC
565 Fifth Avenue, 29th FL
New York, NY, 10017

Prepared by:

*TRC Environmental Corporation
1200 Wall Street West, 5th Floor
Lyndhurst, NJ 07071*

In association with:

*Beveridge & Diamond, P.C.
Kiewit Power Engineers Co.
GE Power & Water
Sigma Energy Solutions
Nelson & Pope
J.A.Cowan & Assoc., Inc.*

Date DEIS Accepted: December 17, 2013

Date of Public Hearing: _____

Closing Date of Comment Period: _____

Chapter 1.0 Project Purpose and Need

1.1 Introduction..... 1-1
1.2 Project Purpose and Need 1-2
1.3 Brief Description of the Proposed Action..... 1-5
1.4 Summary of Discretionary Approvals and Involved and Interested Agencies.... 1-9
1.5 Public Outreach and Participation 1-10

Chapter 2.0 Project Description

2.1 Introduction..... 2-1
2.2 Site Description..... 2-1
2.3 Plant Overview..... 2-4
2.4 Overview of Combined Cycle Operation 2-5
2.5 Plant Layout 2-7
2.6 Air Quality Control Systems..... 2-17
2.7 Water Use/Wastewater Generation and Chemicals 2-18
2.8 Stormwater Management..... 2-23
2.9 Instrumentation/Control Devices 2-23
2.10 Electric Transmission Interconnection 2-24
2.11 Natural Gas Pipeline 2-24
2.12 Security 2-25
2.13 Fire Protection..... 2-26
2.14 Schedule..... 2-26

Chapter 3.0 Land Use, Zoning, and Public Policy

3.1 Introduction..... 3-1
3.2 Land Uses..... 3-2
3.3 Compatibility With Local and Regional Land Use Plans..... 3-13
3.4 Zoning..... 3-21
3.5 Potential Safety Concerns Relative to Adjacent Uses 3-41
3.6 Conclusion With Respect to Land Use and Zoning..... 3-42

Chapter 4.0 Community Facilities

4.1 Introduction..... 4-1
4.2 Local Service Providers 4-1
4.3 Other Community Resources..... 4-3

Chapter 5.0 Cultural Resources

5.1 Introduction..... 5-1
5.2 Legislation..... 5-1
5.3 Area of Potential Effect 5-3
5.4 Archaeological Resources..... 5-3
5.5 Historic Resources 5-7
5.6 Probable Impacts of the Project 5-7
5.7 Conclusion 5-8

Chapter 6.0 Visual Resources and Aesthetics

6.1 Introduction..... 6-1
6.2 Character and Visual Quality Of The Existing Landscape..... 6-1
6.3 NYSDEC Visual Policy Resource Inventory 6-5
6.4 Viewshed Analysis..... 6-9
6.5 Photosimulations..... 6-14
6.6 Design, Appearance and General Mitigation..... 6-19
6.7 Visual Impacts Discussion..... 6-24
6.8 Summary Conclusions 6-27

Chapter 7.0 Socioeconomics and Environmental Justice

7.1 Introduction..... 7-1
7.2 Socioeconomics 7-1
7.3 Environmental Justice..... 7-9

Chapter 8.0 Traffic and Transportation

8.1 Introduction..... 8-1
8.2 Study Methodology..... 8-1

8.3	Existing Conditions.....	8-4
8.4	Traffic	8-6
8.5	Accident History	8-6
8.6	Level of Service Description	8-12
8.7	Future Without the Project.....	8-15
8.8	Proposed Development	8-16
8.9	Probable Traffic Impacts of the Project.....	8-19
8.10	Transportation.....	8-31
8.11	Conclusion	8-32

Chapter 9.0 Air Quality

9.1	Existing Conditions.....	9-1
9.2	Applicable Requirements and Required Analyses.....	9-8
9.3	Control Technology Analysis	9-23
9.4	Source Emission Parameters.....	9-52
9.5	Air Quality Impact Assessment	9-58
9.6	New York State Environmental Quality Review Analyses	9-86

Chapter 10.0 Noise

10.1	Introduction.....	10-1
10.2	General Information on Noise	10-1
10.3	Existing Conditions.....	10-2
10.4	Applicable Standards/Guidelines.....	10-6
10.5	Noise Modeling.....	10-8
10.6	Potential Impacts.....	10-10
10.7	Conclusion	10-12

Chapter 11.0 Geology, Seismology, and Soils

11.1	Introduction.....	11-1
11.2	Geology.....	11-1
11.3	Seismology.....	11-3
11.4	Soils.....	11-7

11.5 Potential Impacts of the Project 11-10

Chapter 12.0 Infrastructure

12.1 Introduction..... 12-1
12.2 Overview..... 12-1
12.3 Water Supply 12-2
12.4 Wastewater Generation..... 12-15
12.5 Groundwater 12-20
12.6 Surface Waters and Aquatic Ecology 12-22
12.7 Stormwater Runoff and Erosion Control 12-22
12.8 Security 12-30
12.9 Emergency Preparedness Planning and Response Actions 12-30
12.10 Solid and Hazardous Waste 12-36
12.11 Energy..... 12-38
12.12 Electric and Magnetic Fields 12-39
12.13 Decommissioning 12-47

Chapter 13.0 Contaminated Materials

13.1 Introduction..... 13-1
13.2 Existing Site Conditions, Historical Site Use, and Visual Inspection Summary 13-2
13.3 Database Review..... 13-7
13.4 Phase I Recommendations 13-12
13.5 Results of Testing 13-12
13.6 Probable Impacts of the Project 13-14

Chapter 14.0 Terrestrial Ecology

14.1 Introduction..... 14-1
14.2 Applicable Laws, Policies, and Regulations..... 14-1
14.3 Terrestrial Resources 14-4
14.4 Wetlands 14-11
14.5 Wildlife 14-13
14.6 Threatened and Endangered Species 14-18

14.7 United States Fish and Wildlife Service 14-18

14.8 Project Related Impacts 14-19

Chapter 15.0 Construction Impacts

15.1 Construction Plan 15-1

15.2 Construction Employee Requirements 15-1

15.3 Summary of Proposed Construction Activities 15-1

15.4 Security 15-7

15.5 Solid, Hazardous, and Sanitary Waste During Construction 15-7

15.6 Construction Impact Assessment 15-8

Chapter 16.0 Cumulative Impacts

16.1 Introduction 16-1

16.2 Air Quality Cumulative Analyses 16-1

16.3 Water Supply Cumulative Impact Analysis 16-5

16.4 Other Cumulative Impact Analyses 16-9

16.5 Cumulative Construction Impact Assessment 16-15

Chapter 17.0 Other Environmental Impacts

17.1 Reasonably Related Short-term and Long-term Impacts 17-1

17.2 Adverse Environmental Effects Which Cannot Be Avoided if the Project
is Implemented 17-4

17.3 Irreversible and Irretrievable Commitment of Resources 17-6

17.4 Growth-Inducing Aspects of The Proposed Action 17-9

17.5 Effect of the Proposed Action on the Use and Conservation of Energy 17-11

Chapter 18.0 Alternatives

18.1 Introduction 18-1

18.2 “No-Action” Alternative 18-1

18.3 Alternative Capacity Supply methods 18-5

18.4 Alternative Sites Under the Control of the Project Sponsor 18-8

18.5 Alternative Project Technologies 18-8

18.6 Alternative Project Design Options 18-11
18.7 Alternate Scale or Magnitude of Project..... 18-13

Chapter 19.0 Natural Gas Transportation Alternatives

19.1 Introduction..... 19-1
19.2 Anticipated Pipeline Construction and Mitigation Procedures..... 19-5
19.3 Road Crossings 19-12
19.4 Assessment of Potential Environmental Impacts..... 19-15

Chapter 20.0 References

Project Purpose and Need 20-1
Land Use, Zoning, and Public Policy 20-1
Community Facilities..... 20-2
Cultural Resources 20-2
Visual Resources..... 20-7
Socioeconomics and Environmental Justice 20-8
Traffic and Transportation 20-9
Air Quality 20-9
Noise 20-11
Geology, Seismology, and Soils 20-12
Infrastructure..... 20-12
Contaminated Materials 20-13
Terrestrial Ecology..... 20-15
Construction Impacts 20-15
Cumulative Impacts 20-16
Natural Gas Transportation Alternatives 20-16

Chapter 21.0 Acronyms List 21-0

LIST OF TABLES

<u>Table No.</u>	<u>Page</u>
Table 2-1	Approximate Building and Major Structure Dimensions..... 2-12
Table 2-2	Approximate Dimensions for Outdoor Storage Tanks..... 2-12
Table 2-3	Summary of Water Balance 2-19
Table 5-1	Archaeological Sites within 2-Mile Radius of Project Area 5-5
Table 6-1	Visual Resources and Potential Viewpoints within the Study Area 6-8
Table 7-1	Peak Number of Craft Workers and Payroll Required By Trade..... 7-2
Table 7-2	Minority Data by Census Tract and Block Group..... 7-12
Table 7-3	Income Data by Census Tract and Block Group..... 7-13
Table 7-4	Asthma Emergency Department Visits for Community of Concern and Comparison Areas..... 7-17
Table 7-5	Cancer Incidences for Community of Concern and Comparison Areas . 7-17
Table 7-6	Caithness Long Island Energy Center II - Maximum Modeled Concentrations 7-19
Table 8-1	Intersection Geometry 8-7
Table 8-2	Accident Summary By Severity of Injury 8-10
Table 8-3	Accident Summary By Type of Collision 8-11
Table 8-4	Existing Condition LOS Summary: Signalized Intersections 8-13
Table 8-5	Unsignalized Intersections 8-15
Table 8-6	Other Planned Developments – Site Generated Trips..... (vehicle trips per hour)..... 8-16
Table 8-7	Proposed Project – Site Generated Trips (vehicle trips per hour)..... 8-19
Table 8-8	Future Operational LOS Summary: Signalized Intersections 8-25
Table 8-9	Future Operational LOS Summary: Unsignalized Intersections..... 8-27
Table 8-10	Future Operational LOS Summary: Signalized Intersections 8-27
Table 8-11	Future Operational LOS Summary: Unsignalized Intersections..... 8-29
Table 9-1	Background Concentrations of Criteria Pollutants..... 9-6
Table 9-2	National and New York Ambient Air Quality Standards, PSD Increments and Significant Impact Levels ($\mu\text{g}/\text{m}^3$) 9-14
Table 9-3	PSD and Non-Attainment NSR Significant Emission Rates and Project Potential Emission Rates 9-15

Table 9-4	Calculation of Offsets.....	9-18
Table 9-5	SCONOx Project Summary.....	9-32
Table 9-6	Summary of GHG Permit Emission Limits for Combined Cycle Units .	9-47
Table 9-7	Summary of Proposed Emissions – Combustion Turbine/Duct Burner (Gas Firing).....	9-49
Table 9-8	Summary of Proposed Emissions – Combustion Turbine/Duct Burner (ULSD Firing).....	9-50
Table 9-9	Summary of Proposed Emissions – Auxiliary Boiler	9-51
Table 9-10	Summary of Proposed Emissions - Emergency Diesel Generators	9-51
Table 9-11	Summary of Proposed Emissions - Emergency Diesel Fire Pump	9-52
Table 9-12	Combustion Turbine Exhaust Parameters	9-54
Table 9-13	Combustion Turbine Short-term Emission Rates (grams/second).....	9-55
Table 9-14	Auxiliary Boiler Stack Parameters and Emission Rates	9-56
Table 9-15	Stack Parameters and Emission Rates for the Emergency Diesel Generators and Emergency Diesel Fire Pump	9-57
Table 9-16	Two (2) GE 7FA Combustion Turbines - Load Analysis Results	9-66
Table 9-17	Facility Modeling Analysis Results—Facility Scenario 11	9-69
Table 9-18	Facility Modeling Analysis Results—Facility Scenario 21	9-70
Table 9-19	Facility Startup Analysis Results—Without Auxiliary Boiler	9-83
Table 9-20	Facility Startup Analysis Results—With Auxiliary Boiler	9-83
Table 9-21	Comparison of Maximum Predicted Concentrations of Pollutants to Vegetation Screening Concentrations.....	9-85
Table 9-22	VISCREEN Maximum Surrounding Area Visual Impacts1	9-85
Table 9-23	Source Specific Acidic Deposition Impacts.....	9-91
Table 9-24	Toxic Air Pollutant Emission Rates	9-93
Table 9-25	Total Facility Maximum Modeled 1-Hour Toxic Air Pollutant Concentrations	9-96
Table 9-26	Total Facility Maximum Modeled Annual Toxic Air Pollutant Concentrations	9-97
Table 9-27	Liquid Water Content of Typical Atmospheric Clouds	9-99
Table 9-28	Condensed Plume Modeling Parameters.....	9-101
Table 9-29	Summary of Total Condensed Vapor Plumes	9-103
Table 9-30	Frequency of Visible Plumes by Month and Hour of Day Scenarios 2 and 10 Combined.....	9-105

Table 9-31	Cumulative Air Quality Impacts of Existing and Proposed LIPA Projects	9-109
Table 9-32	Cumulative Air Quality Impacts of Large Local Combustion Sources	9-111
Table 9-33	Operational GHG Emissions – Mobile Sources	9-114
Table 9-34	GHG Emissions from Construction	9-116
Table 9-35	GHG Emissions Summary	9-117
Table 9-36	CO2 Emissions Rates from Alternative Technologies	9-118
Table 9-37	Levelized Energy Costs and Capacity Factors from Alternative Technologies	9-119
Table 9-38	Representative On-Island LIPA Generating Portfolio	9-120
Table 10-1	Measured Ambient Noise Level Data – Insect Noise Removed (dB(A))	10-4
Table 10-2	Town of Brookhaven Noise Ordinance (dB(A))	10-7
Table 10-3	Noise Modeling Results (dB(A))	10-10
Table 10-4	Calculated Facility Noise Levels Compared to the Town of Brookhaven Noise Ordinance (dB(A))	10-12
Table 11-1	Richter Magnitude Scale of Relative Earthquake Severity	11-4
Table 11-2	Significant Earthquakes in New York State, 1737-2013	11-4
Table 11-3	Soil Characteristics	11-9
Table 12-1	Preliminary Water Supply, Recycle/Reuse And Wastewater Flows Under Various Modes Of Operation (Only Flow Data, No Water Quality Data)	12-4
Table 12-2	Wastewater Generation	12-17
Table 12-3	Suffolk County Sewer Use Limits and Projected Wastewater Characteristics	12-18
Table 12-4	Representative Magnetic Field Strengths	12-41
Table 12-5	NYSPSC Transmission Line Exposure Standards for Electric And Magnetic Fields	12-41
Table 12-6	IRPA Exposure Guidelines For 60 Hz Electric And Magnetic Fields ..	12-42
Table 12-7	Calculated Electric And Magnetic Field Levels	12-44
Table 14-1	Shifts in Estimated Tree Basal Areas and Plant Cover (%) between Stand Types	14-8
Table 14-2	Bird Species Reasonably Likely to Occur Within the Project Parcel and Vicinity	14-15

Table 14-3	Species of Mammals Likely to Occur on or Within the Vicinity of the Proposed Project	14-17
Table 14-4	Reptiles and Amphibians Reasonably Likely to Occur on the Site	14-18
Table 14-5	USFWS-Listed Species That May Occur within the Proposed Project	14-18
Table 14-5	Comparison of Summed Maximum Modeled and Ambient Concentrations with AQRV Screening Concentrations.....	14-23
Table 15-1	Proposed Project – Site Generated Trips (vehicle trips per hour).....	15-9
Table 15-2	Future Construction Peak LOS Summary: Signalized Intersections.....	15-18
Table 15-3	Future Construction Peak LOS Summary: Unsignalized Intersections	15-20
Table 15-4	Future Construction Peak LOS Summary: Signalized Intersections.....	15-21
Table 15-5	Future Construction Peak LOS Summary: Unsignalized Intersections	15-23
Table 15-6	Calculated Construction Noise Levels by Phase (dBA).....	15-29
Table 16-1	Cumulative Air Quality Impacts of Existing and Proposed LIPA Projects.....	16-3
Table 16-2	Cumulative Air Quality Impacts of Large Local Combustion Sources ..	16-5
Table 16-3	Cumulative Water Use	16-7
Table 16-4	Summary Statistics for the SCWA Distribution System for 2012	16-8
Table 19-1	Potential Threatened and/or Endangered Species Identified Within the Preliminary Natural Gas Pipeline Corridors	19-19
Table 19-2	Soil Characteristics.....	19-30

LIST OF FIGURES

<u>Figure No.</u>		<u>Page</u>
Figure 1-1.	Site Location Map.....	1-6
Figure 1-2.	Site Aerial	1-8
Figure 2-1.	Site Location Map.....	2-2
Figure 2-2.	Site Aerial	2-3
Figure 2-3.	Combined Cycle Conceptual Flow Diagram	2-6
Figure 2-4.	Project Rendering.....	2-8
Figure 2-5.	General Alignment Plan.....	2-9
Figure 2-6.	General Arrangement Plan.....	2-10
Figure 2-7.	Facility Elevations	2-11

Figure 3-1.	Generalized Land Use Map	3-4
Figure 3-2.	Site Aerial: One and Two-Mile Radius	3-5
Figure 3-3.	Planned Land Use Map.....	3-10
Figure 3-4.	Special Management Zones	3-18
Figure 3-5.	Zoning Districts Within One-Mile of Project Site	3-22
Figure 4-1.	Community Facilities Within One Mile	4-4
Figure 5-1.	2013 Archaeological Survey Areas	5-2
Figure 5-2.	NHRP Historic Resources Within Two-Mile Radius	5-9
Figure 6-1.	Visual Resources Inventory and Photosimulation Locations	6-4
Figure 6-2.	Viewshed Analysis.....	6-11
Figure 6-3.	Digital Elevation Model.....	6-12
Figure 6-4a.	Viewpoint 1: Todd Court, Sills Industrial Park – Existing Conditions .	6-29
Figure 6-4b.	Viewpoint 1: Todd Court, Sills Industrial Park – Proposed Project	6-30
Figure 6-5a.	Viewpoint 2: 54 Old Dock Road, Sills Industrial Park – Existing Conditions.....	6-31
Figure 6-5b.	Viewpoint 2: 54 Old Dock Road, Sills Industrial Park – Proposed Project	6-32
Figure 6-6a.	Viewpoint 3: Parking Lot of WRS Environmental, Sills Industrial Park –Existing Conditions.....	6-33
Figure 6-6b.	Viewpoint 3: Parking Lot of WRS Environmental, Sills Industrial Park – Proposed Project.....	6-34
Figure 6-7a.	Viewpoint 5: Intersection Station Road and Sills Road – Existing Conditions.....	6-35
Figure 6-7b.	Viewpoint 5: Intersection Station Road and Sills Road – Proposed Project	6-36
Figure 6-8a.	Viewpoint 6: Springhill Suites – Existing Conditions.....	6-37
Figure 6-8a.	Viewpoint 6: Springhill Suites – Proposed Project.....	6-38
Figure 6-9a.	Viewpoint 7: Atlantic Point Apartments – Existing Conditions.....	6-39
Figure 6-9b.	Viewpoint 7: Atlantic Point Apartments – Proposed Project	6-40
Figure 6-10a.	Viewpoint 9: Suffolk County Farm and Education Center – Existing Conditions.....	6-41
Figure 6-10b.	Viewpoint 9: Suffolk County Farm and Education Center – Proposed Project	6-42
Figure 6-11a.	Viewpoint 10: Bridge At Yaphank Avenue – Existing Conditions.....	6-43

Figure 6-11b. Viewpoint 10: Bridge At Yaphank Avenue – Proposed Project.....	6-44
Figure 6-12a. Viewpoint 13: Sills Road, Near Long Island Expressway – Existing Conditions.....	6-45
Figure 6-12b. Viewpoint 13: Sills Road, Near Long Island Expressway – Proposed Project	6-46
Figure 6-13a. Viewpoint 15: Brookhaven Town Offices – Existing Conditions	6-47
Figure 6-13b. Viewpoint 15: Brookhaven Town Offices – Proposed Project.....	6-48
Figure 7-1. Environmental Justice Screening Area	7-11
Figure 7-2. Locations of Qualifying EJ Block Groups Within Zip Codes	7-16
Figure 7-3. Maximum 24-Hour Average PM2.5 Concentrations.....	7-21
Figure 7-4. Maximum Annual Average PM2.5 Concentrations.....	7-22
Figure 7-5. Maximum 24-Hour Average PM10 Concentrations.....	7-23
Figure 7-6. Maximum Annual Average PM10 Concentrations.....	7-24
Figure 7-7. Maximum 1-Hour Average SO2 Concentrations	7-25
Figure 7-8. Maximum 3-Hour Average SO2 Concentrations	7-26
Figure 7-9. Maximum 24-Hour Average SO2 Concentrations	7-27
Figure 7-10. Maximum Annual Average SO2 Concentrations	7-28
Figure 7-11. Maximum 1-Hour Average CO Concentrations.....	7-29
Figure 7-12. Maximum 8-Hour Average CO Concentrations.....	7-30
Figure 7-13. Maximum 1-Hour Average NO2 Concentrations.....	7-31
Figure 7-14. Maximum Annual Average NO2 Concentrations.....	7-32
Figure 8-1. Area Map	8-2
Figure 8-2. Location Map.....	8-3
Figure 8-3. 2013 Existing AM Peak Hour Volumes	8-8
Figure 8-4. 2013 Existing PM Peak Hour Volumes.....	8-9
Figure 8-5. 2018 No Build Operational AM Peak Hour Volumes	8-17
Figure 8-6. 2018 No Build Operational PM Peak Hour Volumes.....	8-18
Figure 8-7. Site Traffic Distribution – Operational.....	8-20
Figure 8-8. Site Generated Volumes – 2018 Operational AM Peak Hour Volumes	8-21
Figure 8-9. Site Generated Volumes – 2018 Operational PM Peak Hour Volumes	8-22
Figure 8-10. Build Volumes – 2018 Operational AM Peak Hour.....	8-23
Figure 8-11. Build Volumes – 2018 Operational PM Peak Hour.....	8-24

Figure 9-1	Wind Rose for Brookhaven Calabro Airport Meteorological Tower (2008-2012).....	9-3
Figure 9-2.	Maximum 24-Hour Average PM-2.5 Concentrations	9-71
Figure 9-3.	Maximum Annual Average PM-2.5 Concentrations	9-72
Figure 9-4.	Maximum 24-Hour Average PM-10 Concentrations	9-73
Figure 9-5.	Maximum Annual Average PM-10 Concentrations	9-74
Figure 9-6.	Maximum 1-Hour Average SO ₂ Concentrations	9-75
Figure 9-7.	Maximum 3-Hour Average SO ₂ Concentrations	9-76
Figure 9-8.	Maximum 24-Hour Average SO ₂ Concentrations	9-77
Figure 9-9.	Maximum Annual Average SO ₂ Concentrations	9-78
Figure 9-10.	Maximum 1-Hour Average CO Concentrations.....	9-79
Figure 9-11.	Maximum 8-Hour Average CO Concentrations.....	9-80
Figure 9-12.	Maximum 1-Hour Average NO ₂ Concentrations.....	9-81
Figure 9-13.	Maximum Annual Average NO ₂ Concentrations.....	9-82
Figure 9-14.	Frequency of Condensed Visible Plumes for Cases 2 & 10 (Average hours per year)	9-106
Figure 9-15.	Location of Existing and Proposed LIPA Combustion Turbine Projects.....	9-108
Figure 10-1.	Noise Receptors	10-3
Figure 10-2.	Measured Sound Levels – 109A Long Island Avenue	10-5
Figure 10-3.	Measured Sound Levels – 109A Long Island Avenue	10-6
Figure 10-4.	Industrial Property Line Noise Receptors.....	10-9
Figure 10-5.	Noise Contour Map.....	10-11
Figure 11-1.	Surficial Geology Map	11-2
Figure 11-2.	Seismic Hazard Map	11-6
Figure 11-3.	Soils Map.....	11-8
Figure 12-1.	Preliminary Facility Water Balance Diagram.....	12-3
Figure 12-2.	Public and Private Potable Water Supply Wells In the Project Vicinity	12-8
Figure 12-3.	Deep Recharge Areas Located In the Project Vicinity	12-10
Figure 12-4.	Special Groundwater Protection Areas In the Site Vicinity	12-11
Figure 12-5.	Groundwater Contours.....	12-12
Figure 12-6.	Carmans River Time of Travel Zones	12-13

Figure 12-7.	Electric Field Profiles	12-45
Figure 12-8.	Magnetic Fields.....	12-46
Figure 13-1.	Property Plan.....	13-4
Figure 13-2.	Site Location Relative to Historic (1998) PCE Plume.....	13-5
Figure 13-3.	Location of Historic SCDHS PCE Monitoring Wells	13-6
Figure 13-4.	Phase II Groundwater Sampling Location Map.....	13-13
Figure 14-1	Plant Community and Plot location Map.....	14-5
Figure 14-2.	Size Class (dbh) Distribution of Pitch Pine (<i>Pinus rigida</i>), Scarlet Oak (<i>Quercus coccinea</i>), and White Oak (<i>Q. alba</i>).	14-11
Figure 14-3.	NYSDEC Freshwater Wetlands and NWI Wetlands Map	14-12
Figure 15-1.	Site Traffic Distribution – Construction Peak	15-11
Figure 15-2.	Site Generated Volumes – 2017 Construction Peak AM Peak Hour Volumes	15-12
Figure 15-3.	Site Generated Volumes – 2017 Construction Peak PM Peak Hour Volumes	15-13
Figure 15-4.	No Build Construction Peak AM Peak Hour Volumes	15-14
Figure 15-5.	No Build Construction Peak PM Peak Hour Volumes	15-15
Figure 15-6.	Build Volumes – Construction Peak AM Peak Hour	15-16
Figure 15-7.	Build Volumes – Construction Peak PM Peak Hour	15-17
Figure 16-1.	Location of Existing and Proposed LIPA Combustion Turbine Projects.....	16-2
Figure 16-2.	SCWA Distribution Areas	16-6
Figure 19-1.	Natural Gas Pipeline Alternatives Overview Map.....	19-2