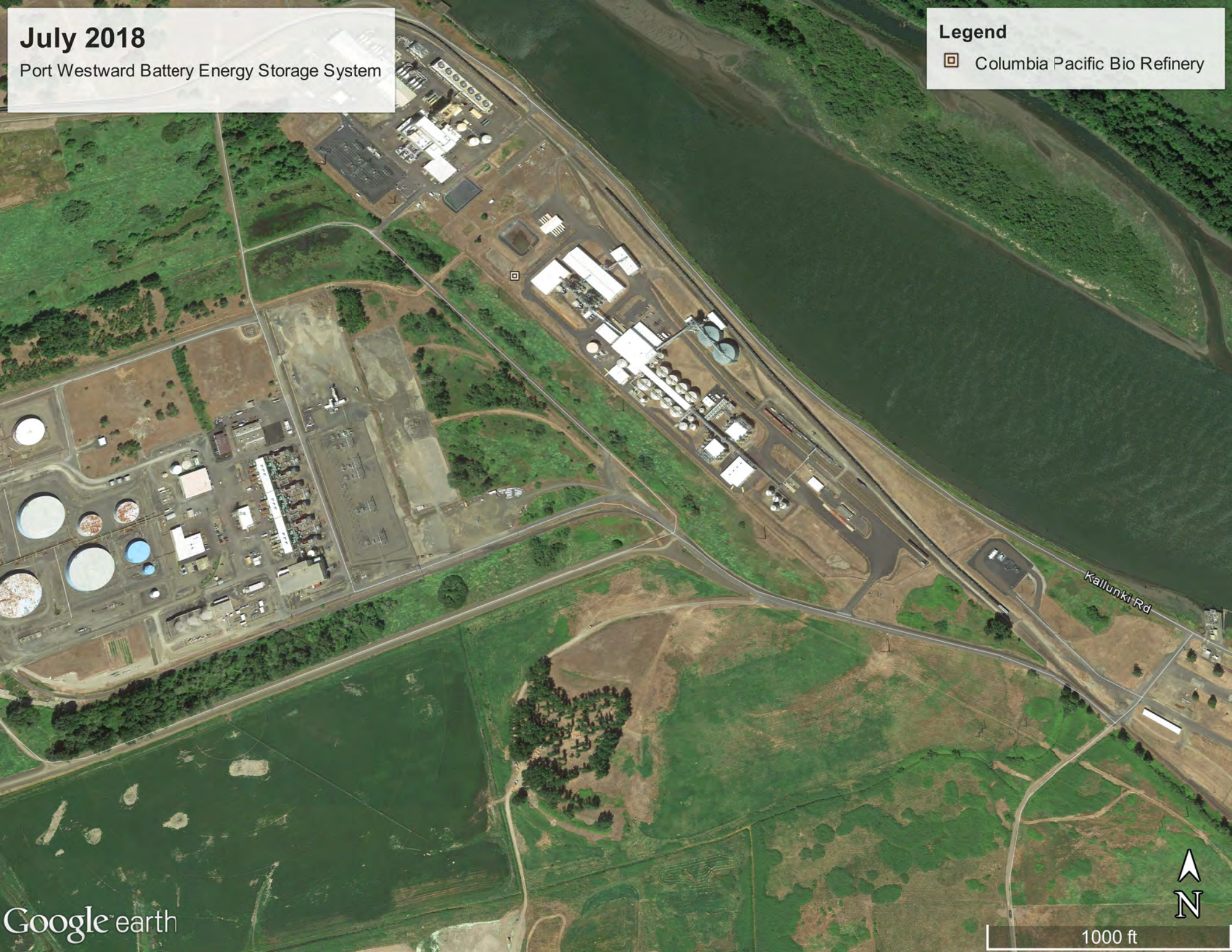
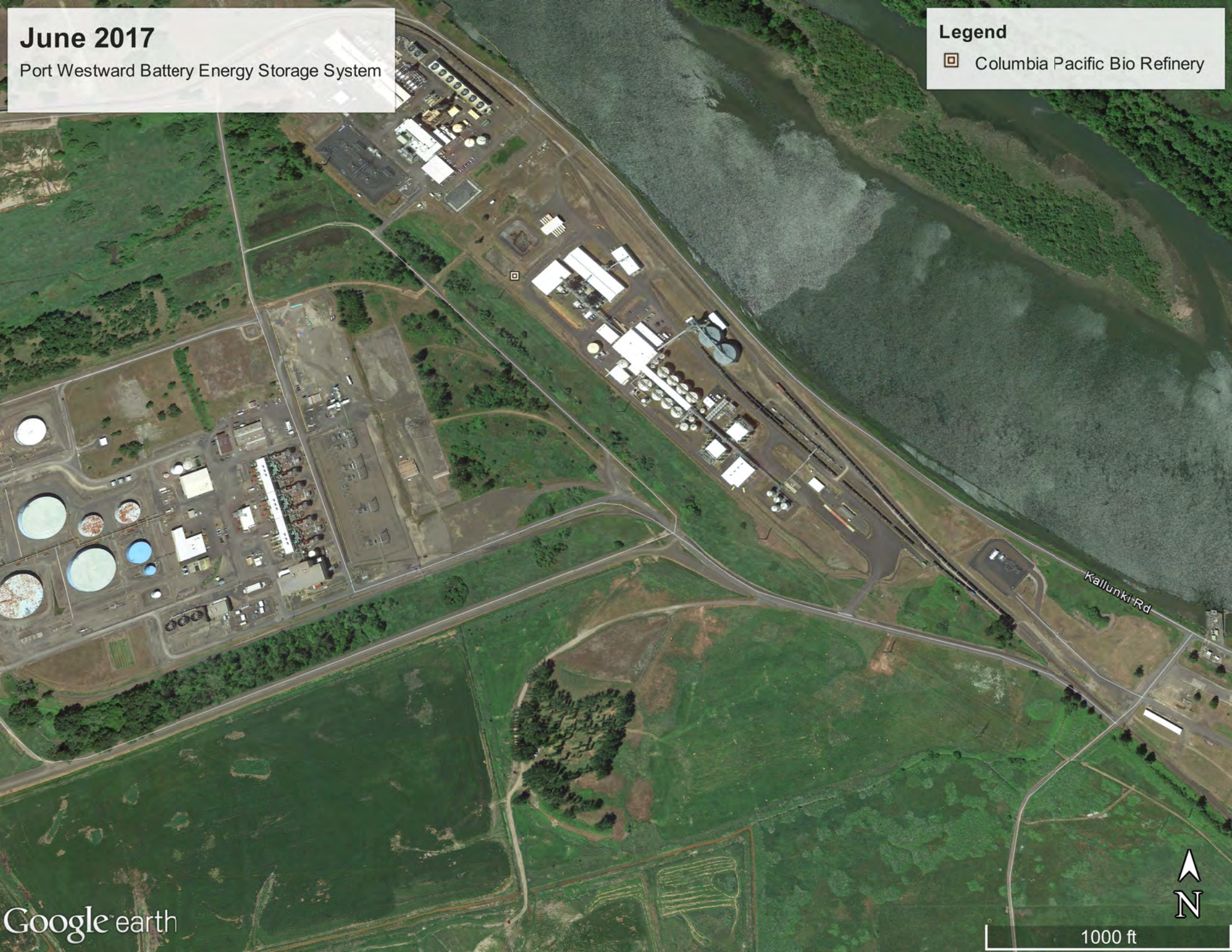
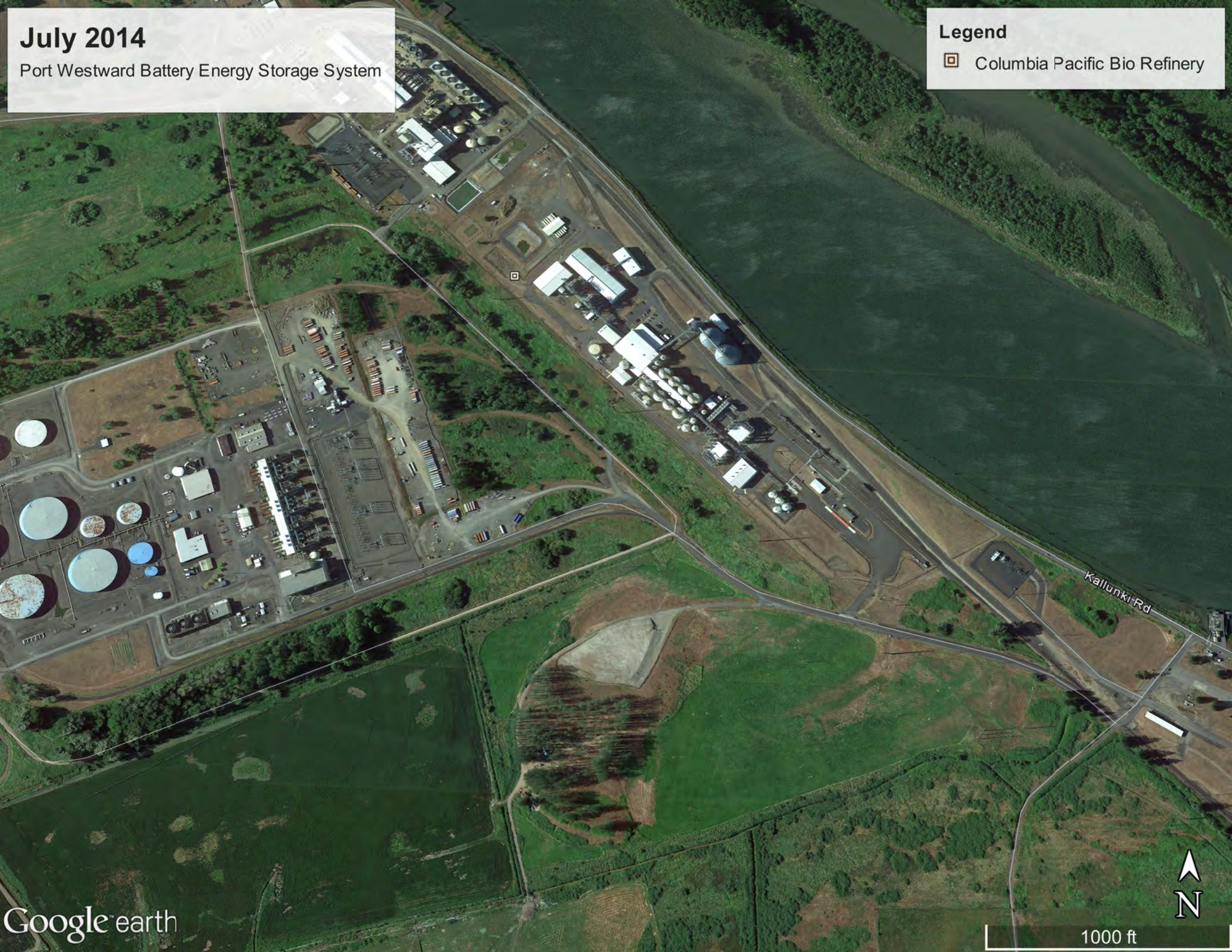
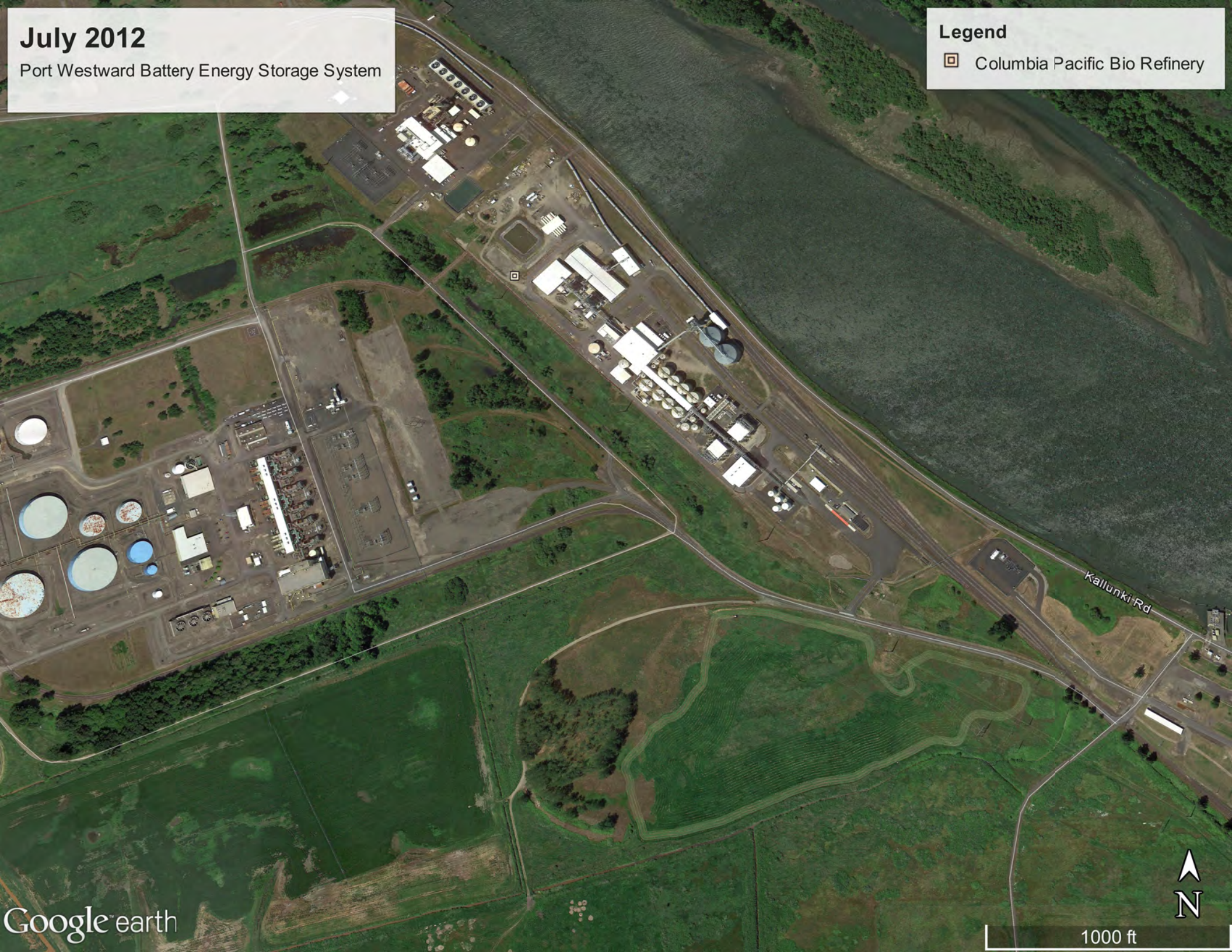
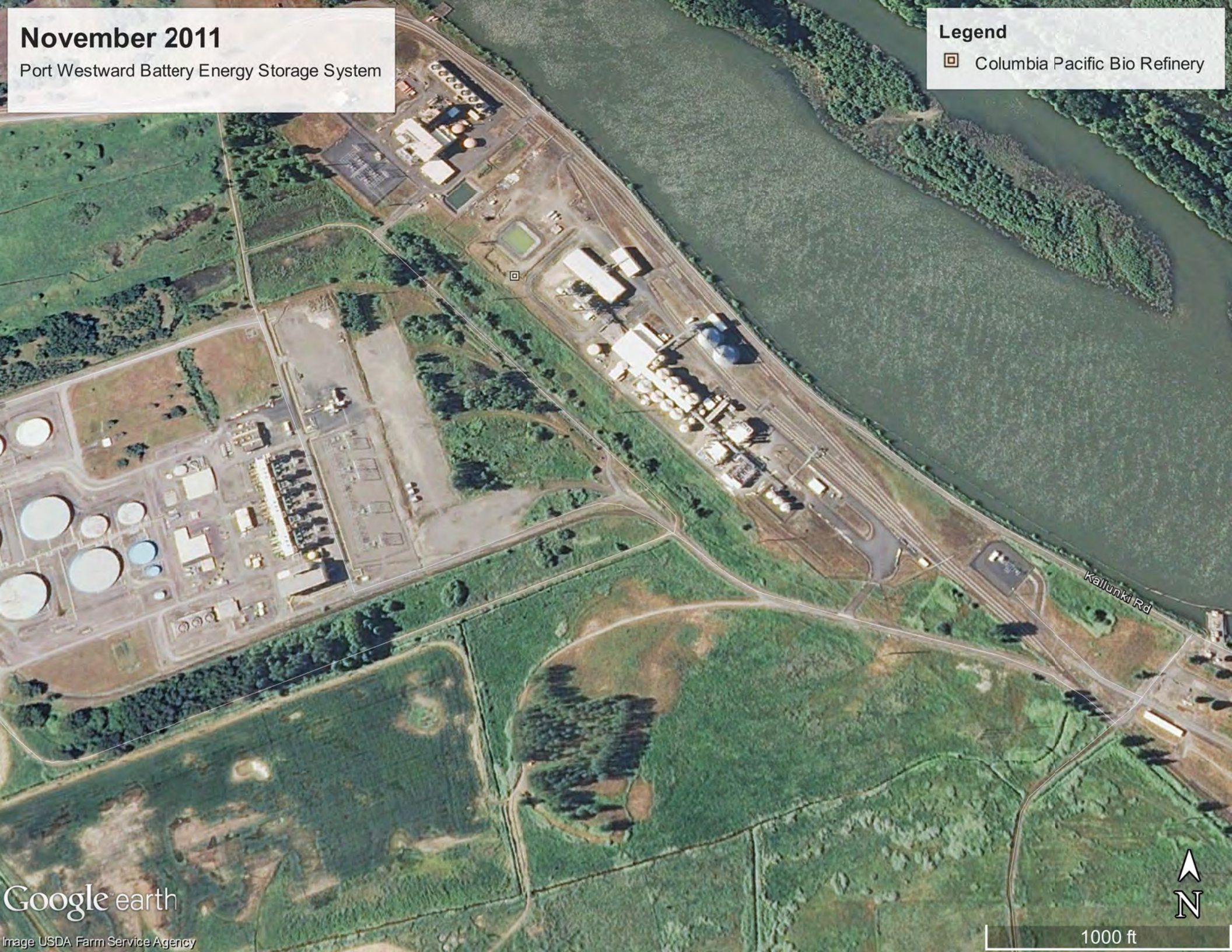
APPENDIX A: AERIAL PHOTOGRAPHS

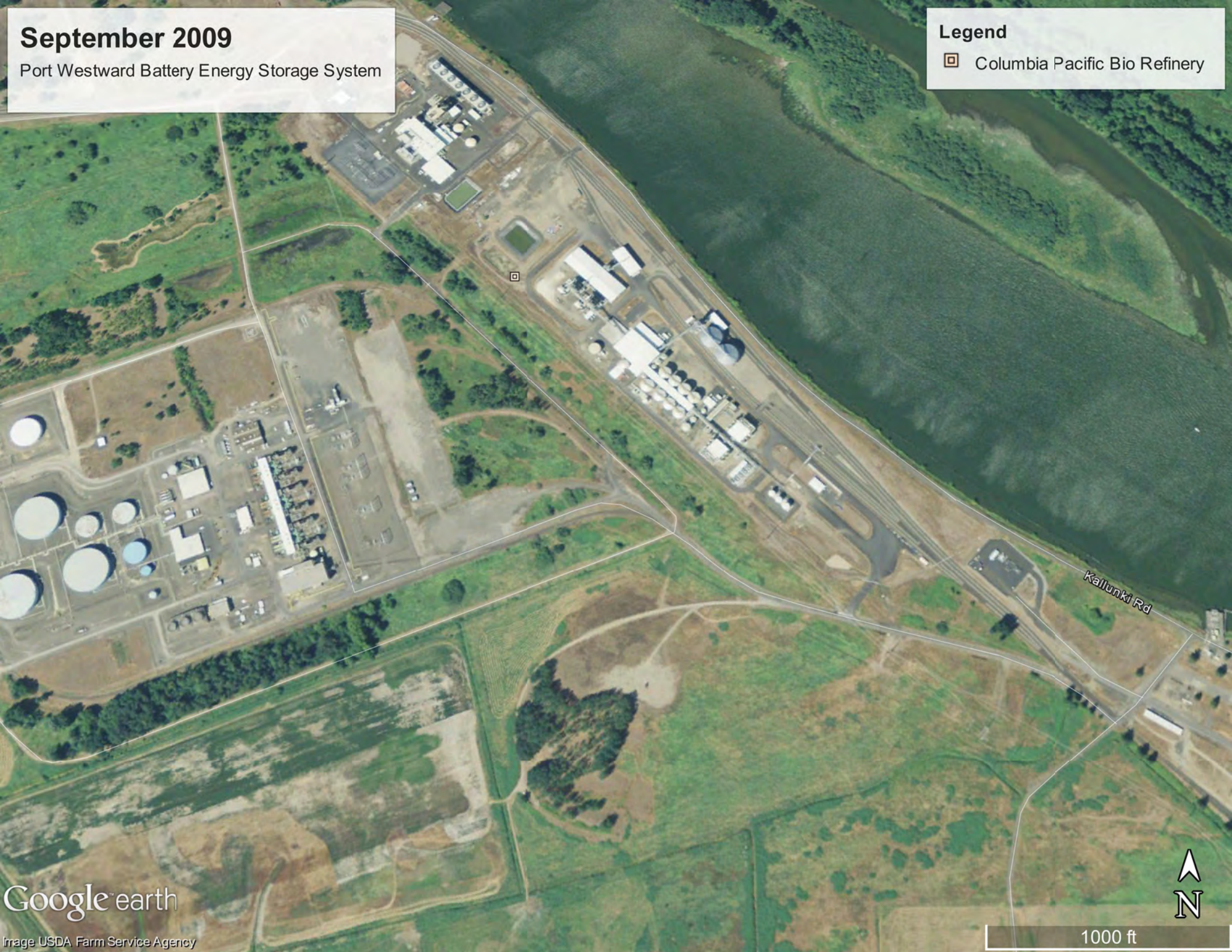

July 2018
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
N
1000 ft
Google earth

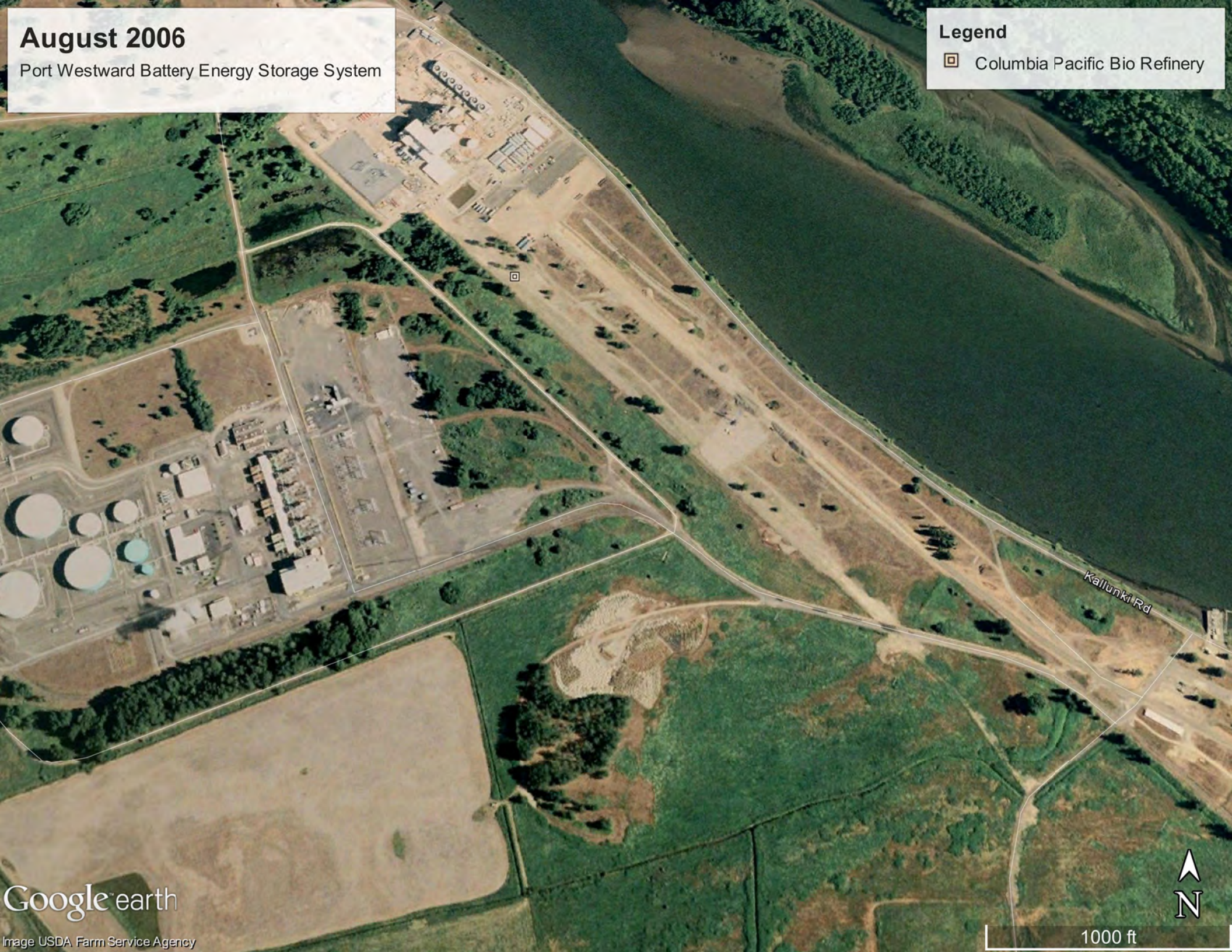

June 2017
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
N
1000 ft
Google earth

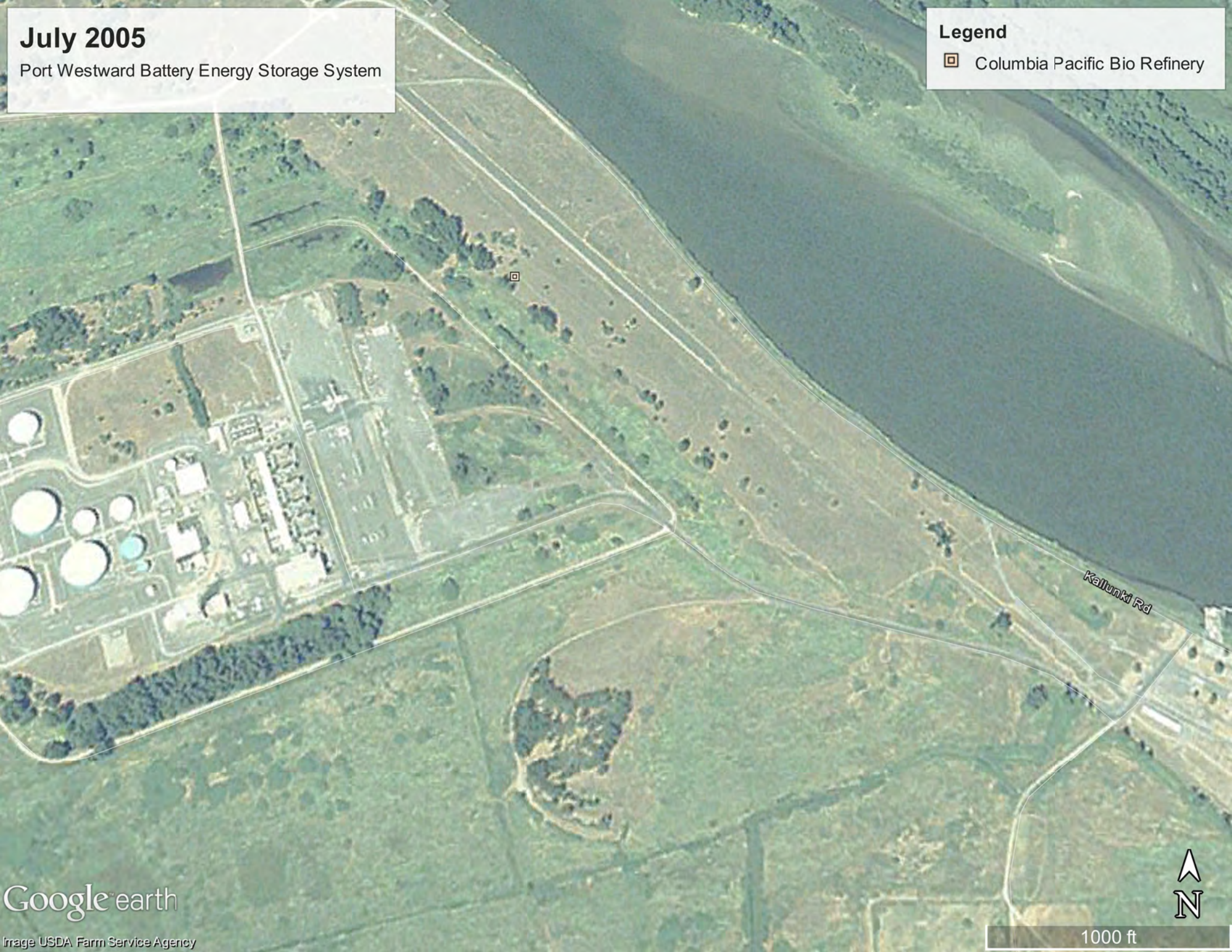

July 2014
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
N
1000 ft
Google earth


July 2012
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
Google earth
N
1000 ft


November 2011
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
Google earth
Image USDA Farm Service Agency
N
1000 ft


September 2009
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
Google earth
Image USDA Farm Service Agency
N
1000 ft


August 2006
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
N
1000 ft
Google earth
Image USDA Farm Service Agency


July 2005
Port Westward Battery Energy Storage System
Legend
Columbia Pacific Bio Refinery
Kallunki Rd
Google earth
Image USDA Farm Service Agency
N
1000 ft

APPENDIX B: DATA SHEETS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-01
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Flat Slope (%): 0
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Udipsamments, nearly level NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?**	**Yes ___ No X**
Hydric Soil Present?	Yes ___	No X		
Wetland Hydrology Present?	Yes ___	No X		

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Sample plot located along lowest (SW edge) of proposed battery storage site

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10')			
1. *Dactylis glomerata*	25	Y	FACU
2. *Schedonorus arundinaceus*	20	Y	FAC
3. *Hypochaeris radicata*	15	Y	FACU
4. *Trifolium repens*	10	N	FAC
5. *Geranium* sp.	10	N	-
6. *Achillea millefolium*	10	N	FACU
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:

SOIL

Sampling Point: SP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/3	100					Sandy loam	gravels
8-15+	10YR 3/2	100					Sandy loam	gravels

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Coarse angular gravels throughout – appears to be historic fill associated with facility development

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: no evidence noted.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-02
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 0%
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Udipsamments, nearly level NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?**	**Yes ___ No X**
Hydric Soil Present?	Yes ___	No X		
Wetland Hydrology Present?	Yes ___	No X		

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Plot is paired with SP-04. Strong vegetation community and topographic break between SP-03 and SP-04. Plot is on terrace at base of large berm to S. and N. of low-lying, concave feature.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Cytisus scoparius	5	Y	UPL
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10')			
1. Dactylis glomerata	40	Y	FACU
2. Lolium perenne	30	Y	FAC
3. Agrostis sp.	10	N	-
4. Hypochaeris radicata	2	N	FACU
5. Cardamine oligosperma	2	N	FAC
6. Plantago lanceolata	Tr	N	FACU
7.			
8.			
9.			
10.			
11.			
	~80 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ~15

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: Mixed grasses and weedy species.

SOIL

Sampling Point: SP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					Sandy loam	Angular gravels
6-9	10YR 2/1	100					Sandy loam	Charcoal pieces
9-16+	10YR 3/3	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Top 6 inches included many angular gravels. Below 6 inches is a 3-inch layer of dark soils containing numerous charcoal pieces

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soils slightly moist in upper 12 inches, dry below

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-03
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 0%
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Udipsamments, nearly level NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?**	**Yes ___ No X**
Hydric Soil Present?	Yes ___	No X		
Wetland Hydrology Present?	Yes ___	No X		

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Plot is paired with SP-04. Strong vegetation community and topographic break between SP-03 and SP-04. Plot is on terrace at base of large berm to S. and N. of low-lying, concave feature.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10')			
1. Agrostis sp. (poss. A. capillaris)	50	Y	(FAC)
2. Dactylis glomerata	20	Y	FACU
3. Schedonorus arundinaceus	10	N	FAC
4. Tanacetum vulgare	5	N	FACU
5. Achillea millefolium	3	N	FACU
6. Hypochaeris radicata	3	N	FACU
7. Daucus carota	1	N	FACU
8. Plantago lanceolata	tr	N	FACU
9. Cruciferae sp.	Tr	N	-
10.			
11.			
	~90 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: Mixed grasses and weedy species.

SOIL

Sampling Point: SP-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/3	100					Sandy loam	
5-20+	2.5Y 4/2	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soils slightly moist in upper 12 inches, dry below

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-04
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): convex Slope (%): <2%
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Crims silt loam, protected NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___
Hydric Soil Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___

Is the Sampled Area within a Wetland? Yes X No ___

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Plot is paired with SP-03. Strong vegetation community and topographic break between SP-03 and SP-04.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 10')			
1. Phalaris arundinacea	90	Y	FACW
2. Juncus effusus	5	N	FACW
3. Poa sp. (poss. P. palustris)	5	N	-
4. Veronica americana	5	N	OBL
5. Ranunculus sp. (poss. R. repens)	2	N	-
6. Alopecurus pratensis	1	N	FACW
7.			
8.			
9.			
10.			
11.			
	108 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	___	x 3 =	___
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Area appears to be farmed for hay/straw. Woody species are absent and cutting, raking, and baling equipment are staged nearby. Ground is relatively flat.

SOIL

Sampling Point: SP-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 4/2	95	7.5YR 4/4-5/4	5	C	M	Sandy loam	Coarse redox
11-18+	10YR 4/2	90	7.5YR 4/4-5/4	10	C	M	Sandy loam	Med/coarse redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks: coarse sands in upper 11 inches of sandy loam matrix giving way to finer sandy loam below 11 inches

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 10”

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 4”

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Strong evidence of persistently wet conditions in a broad, shallowly concave feature. Evidence of burrowing mammals absent from this area – several burrows, mole hills located upslope to the north.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-05
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 1% to flat
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Udipsamments, nearly level NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Plot is paired with SP-06. Less defined vegetation community and topographic break between SP-05 and SP-06 (compared to SP-03 and -04). Burrowing mammal activity to northwest (higher elevation) and lines of drift deposition to southeast (lower elevation). Sample plot appears to be in upper portion of transition zone. Upland call based on soils and hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10')			
1. Phalaris arundinacea	30	Y	FACW
2. Dactylis glomerata	20	Y	FACU
3. Lolium perenne	20	Y	FAC
4. Alopecurus pratensis	10	N	FACW
5. Hypochaeris radicata	5	N	FACU
6. Rumex acetosella	1	N	FACU
7. Geranium sp.	2	N	-
8.			
9.			
10.			
11.			
	~90 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks:. Lolium is a common hay crop grass and may introduced in this location.

SOIL

Sampling Point: SP-05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 3/3	100					Sandy loam	
5-15	10YR 3/3	98	5YR 4/4	2	C	M	Sandy loam	Fine/med redox
15-20+	10YR 3/2	95	7.5YR 4/4	5	C	M	Sandy loam	Med/coarse redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:. Drift lines to southeast, and burrowing animal activity northwest of this sample plot. Soils moist only.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Port Westward – Battery Site City/County: Columbia Sampling Date: 2/22/19
Applicant/Owner: Portland General Electric State: OR Sampling Point: SP-06
Investigator(s): C. MacLaren Section, Township, Range: Sec 22, T8N, R4W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 0%
Subregion (LRR): A – NW Forests & Coast Lat: 46.1708 Long: -123.1690 Datum:
Soil Map Unit Name: Crims silt loam, protected NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___
Hydric Soil Present? Yes X No ___
Wetland Hydrology Present? Yes X No ___

Is the Sampled Area within a Wetland? Yes X No ___

Remarks: Rainfall is below average for the 3 months preceding fieldwork. Plot is paired with SP-05.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 10')			
1. Phalaris arundinacea	90	Y	FACW
2. Alopecurus pratensis	5	N	FACW
3. Geranium sp.	Tr	N	-
4. Cardamine oligosperma	Tr	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	~95 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___	x 1 =	___
FACW species	___	x 2 =	___
FAC species	___	x 3 =	___
FACU species	___	x 4 =	___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Similar to conditions at SP-03

SOIL

Sampling Point: SP-06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 3/3	98	10YR 4/4	2	C	M	Sandy loam	Fine redox
4-7	10YR 4/2	95	7.5YR 4/4	5	C	M	Sandy loam	Fine-med redox
7-18	10YR 4/2	90	7.5YR 4/4, 4/6	10	C	M	Sand	Coarse redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- x Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	___
Water Table Present?	Yes	X	No	___	Depth (inches):	17”
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	7”

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hummocky area. Drift lines to south and north (topographically below and above, respectively). Multiple burrows to north of sample plot.

APPENDIX C: GROUND LEVEL COLOR PHOTOGRAPHS

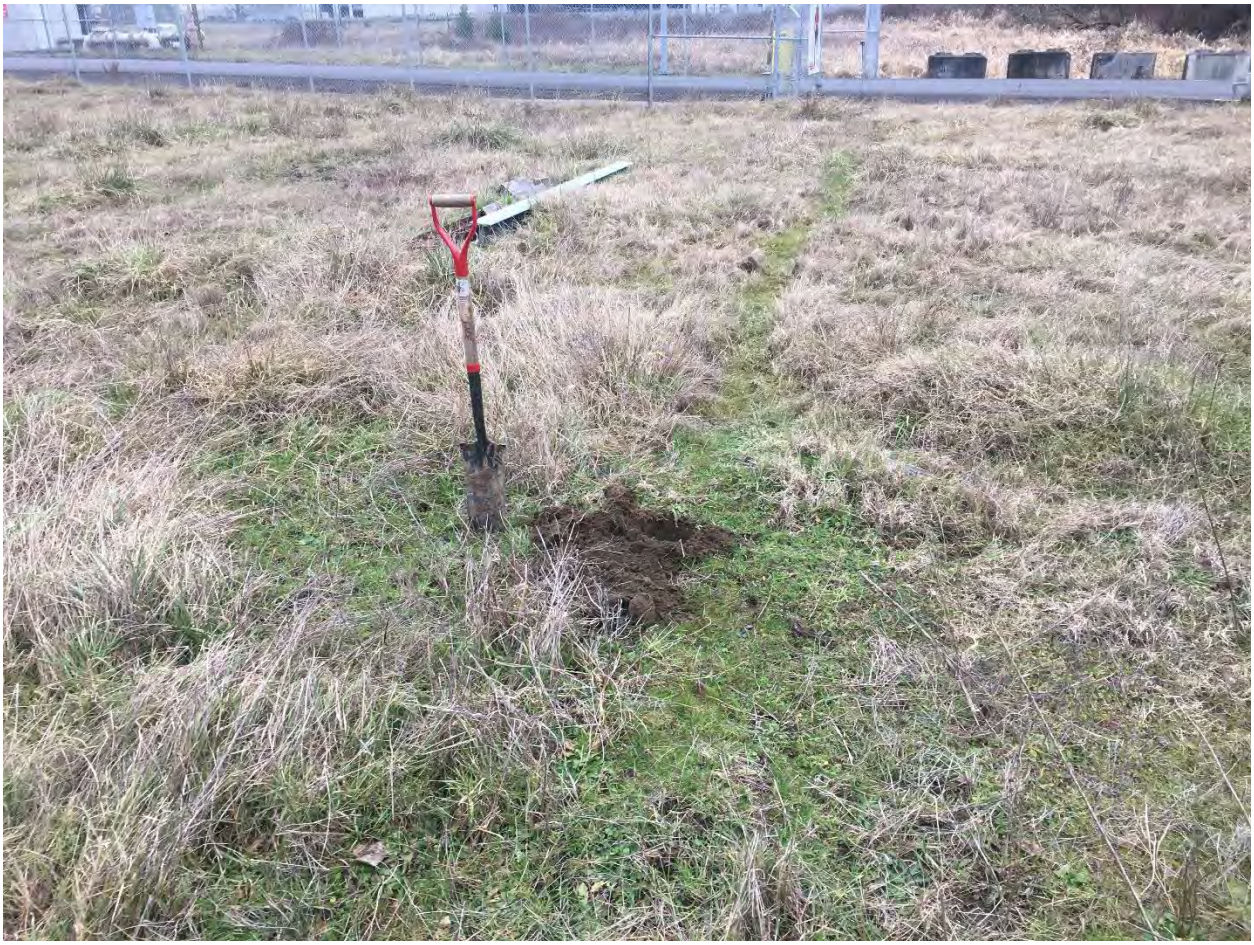


Photo 1. Sample Plot SP-01 looking south at Study Area A. February 2019.

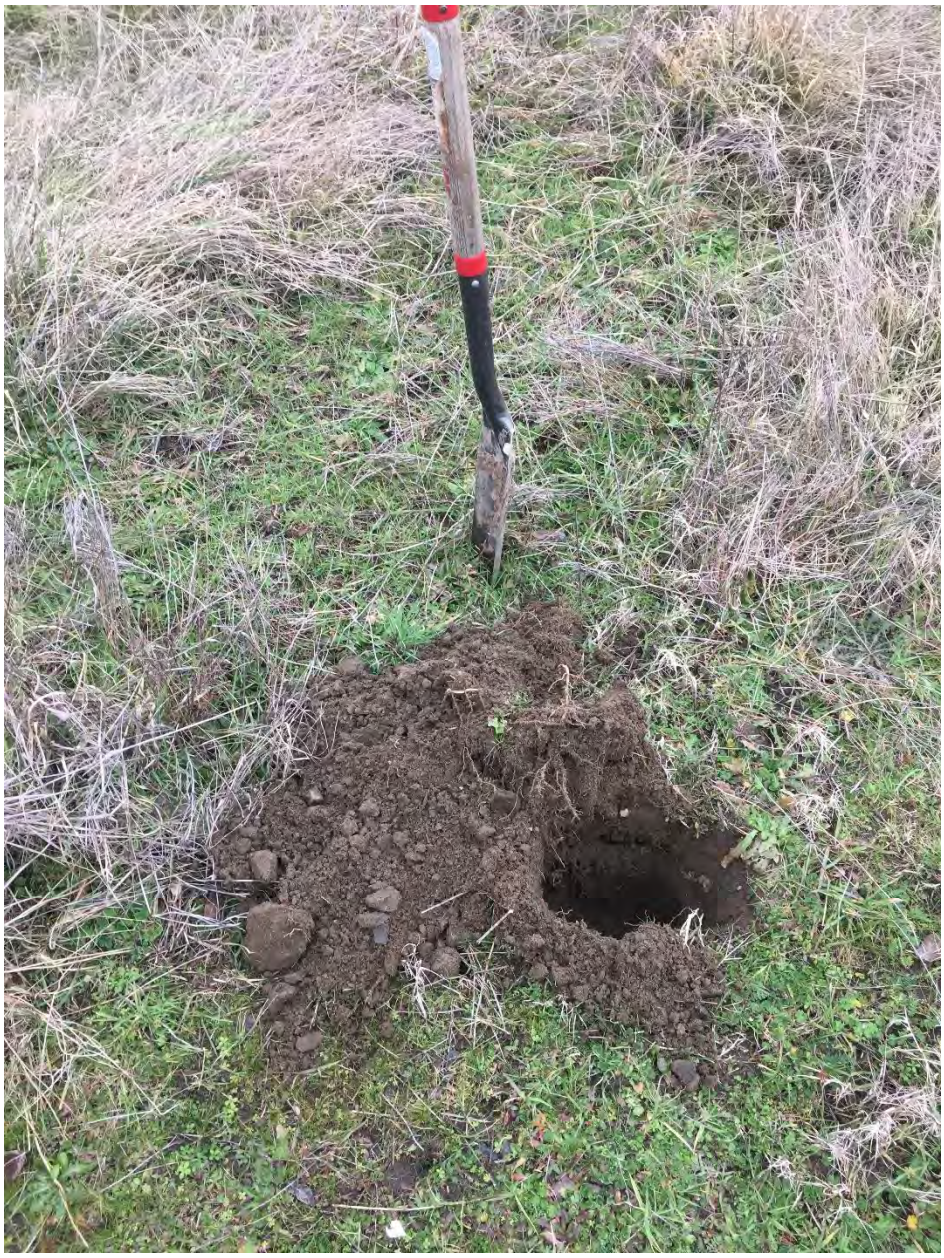


Photo 2. Closeup of Sample Plot SP-01

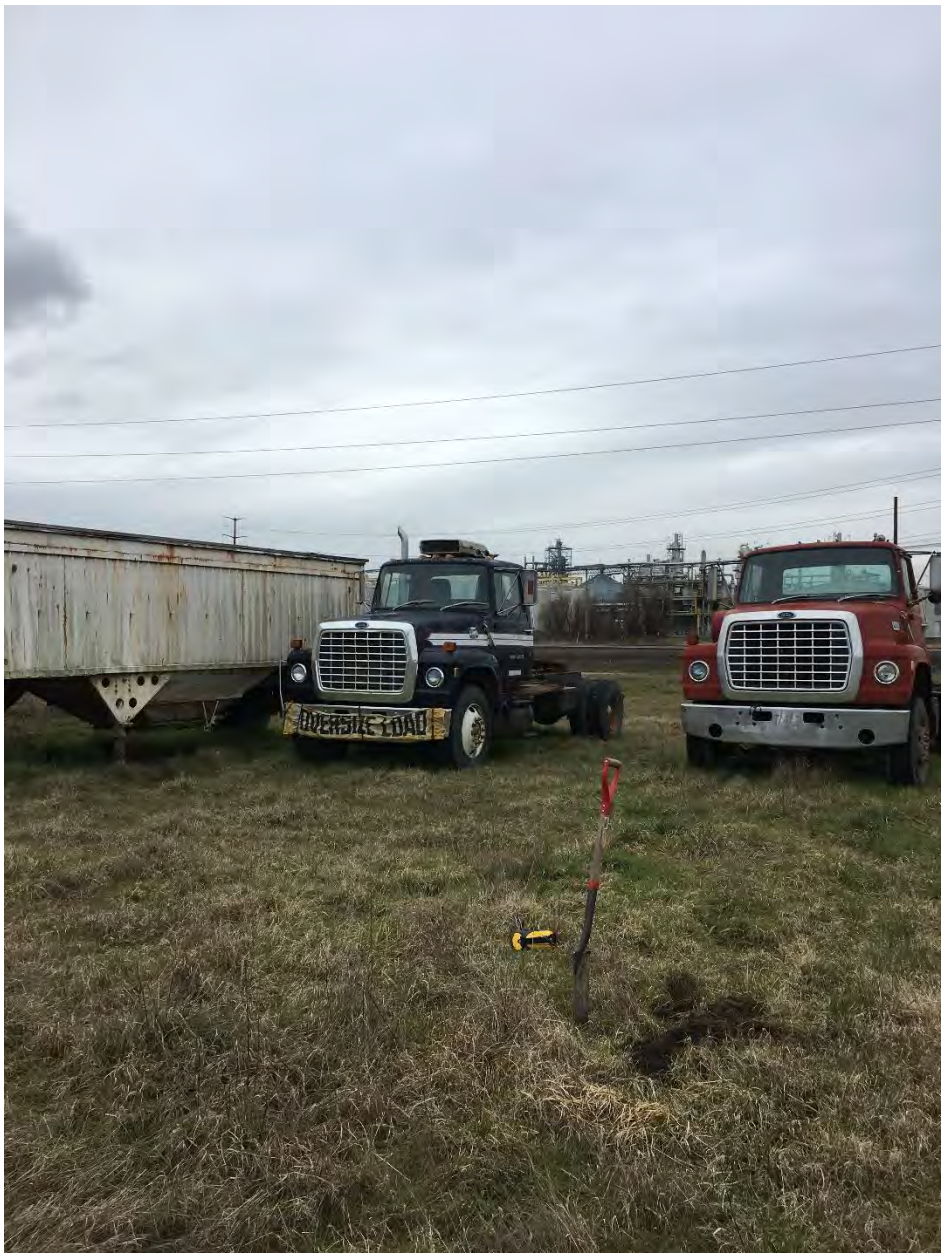


Photo 3. Sample Plot SP-02 in Study Area B. Photo facing west-northwest

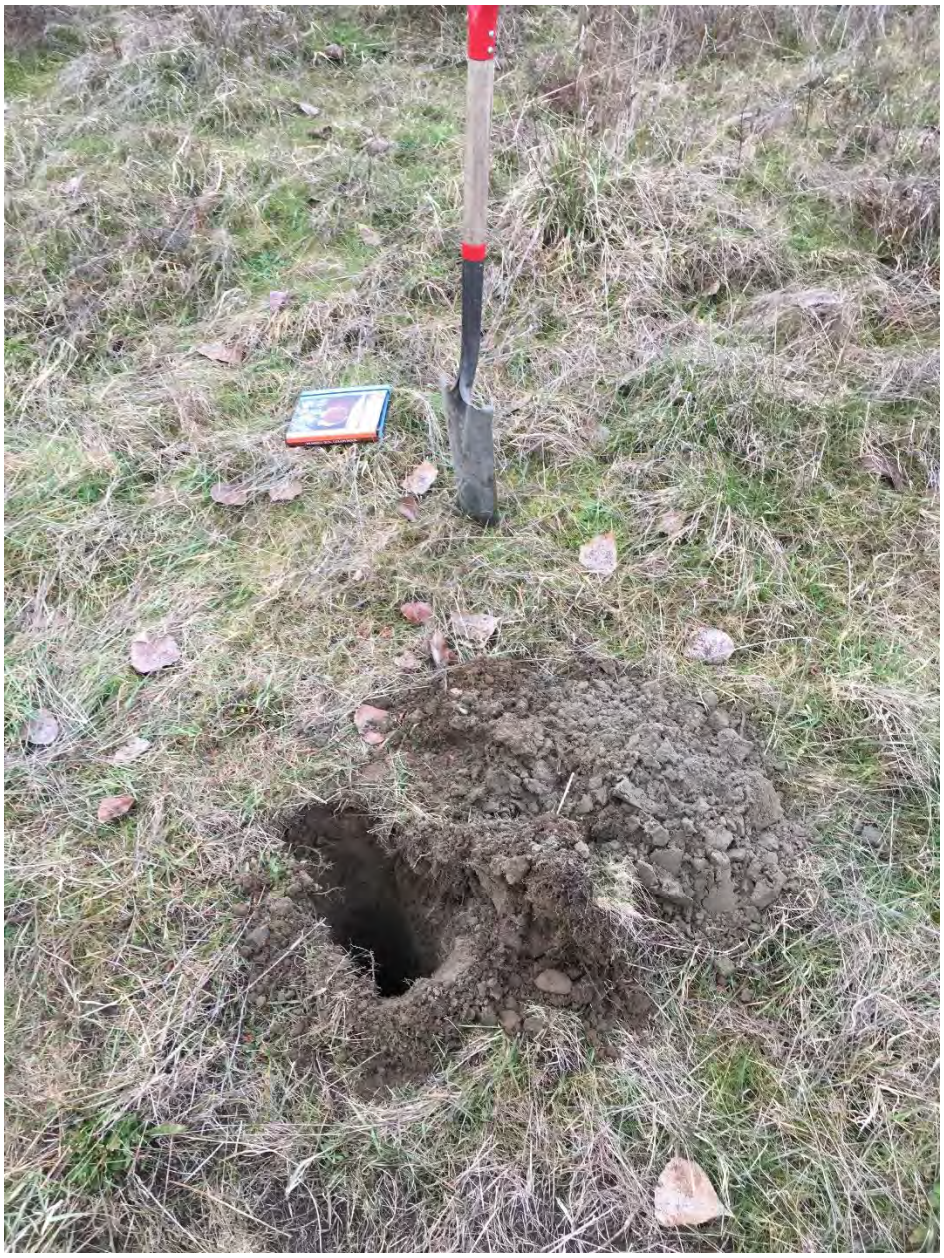


Photo 4. Closeup of SP-02

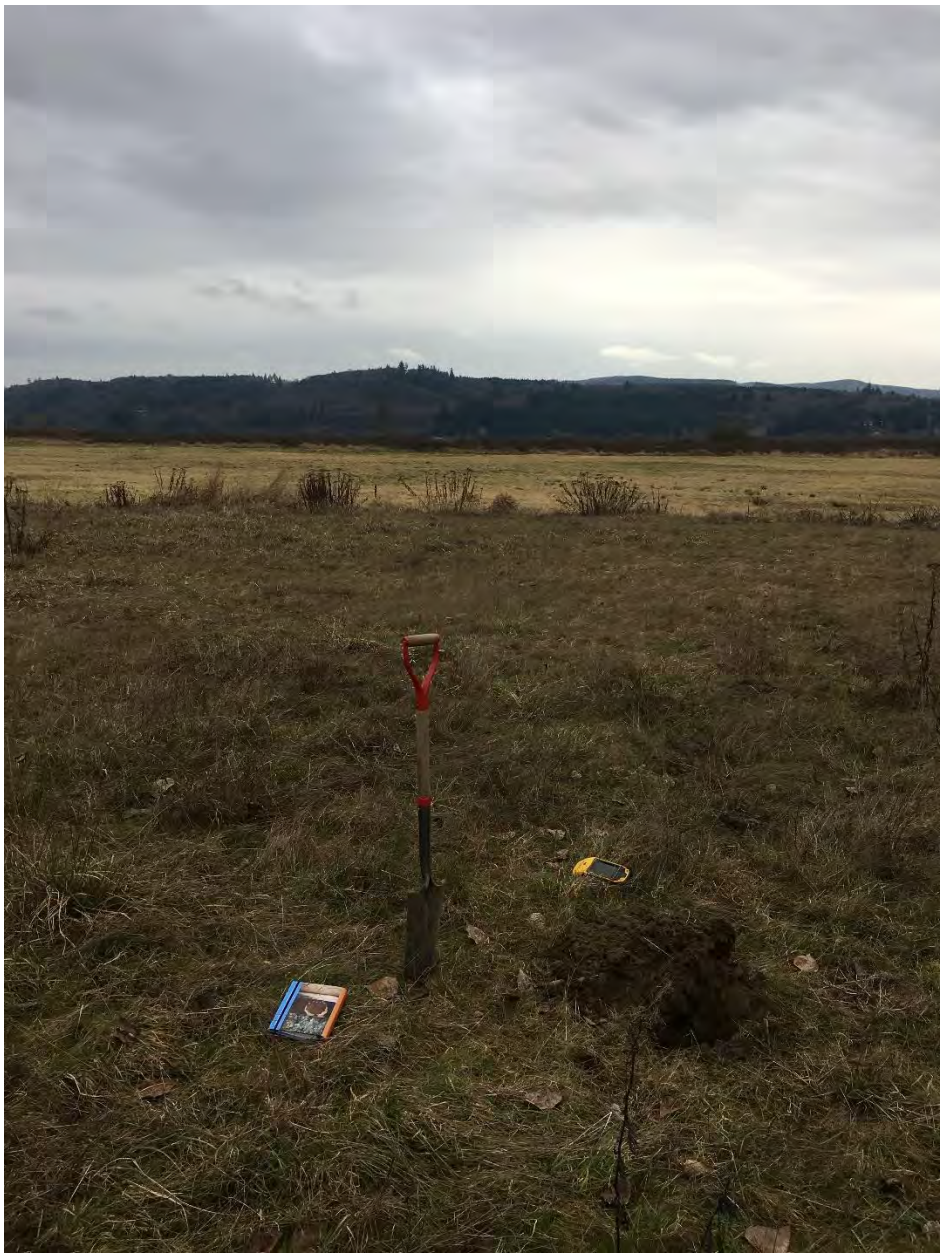


Photo 5. Sample plot SP-03. Photo taken facing south towards farmed, lowland area.

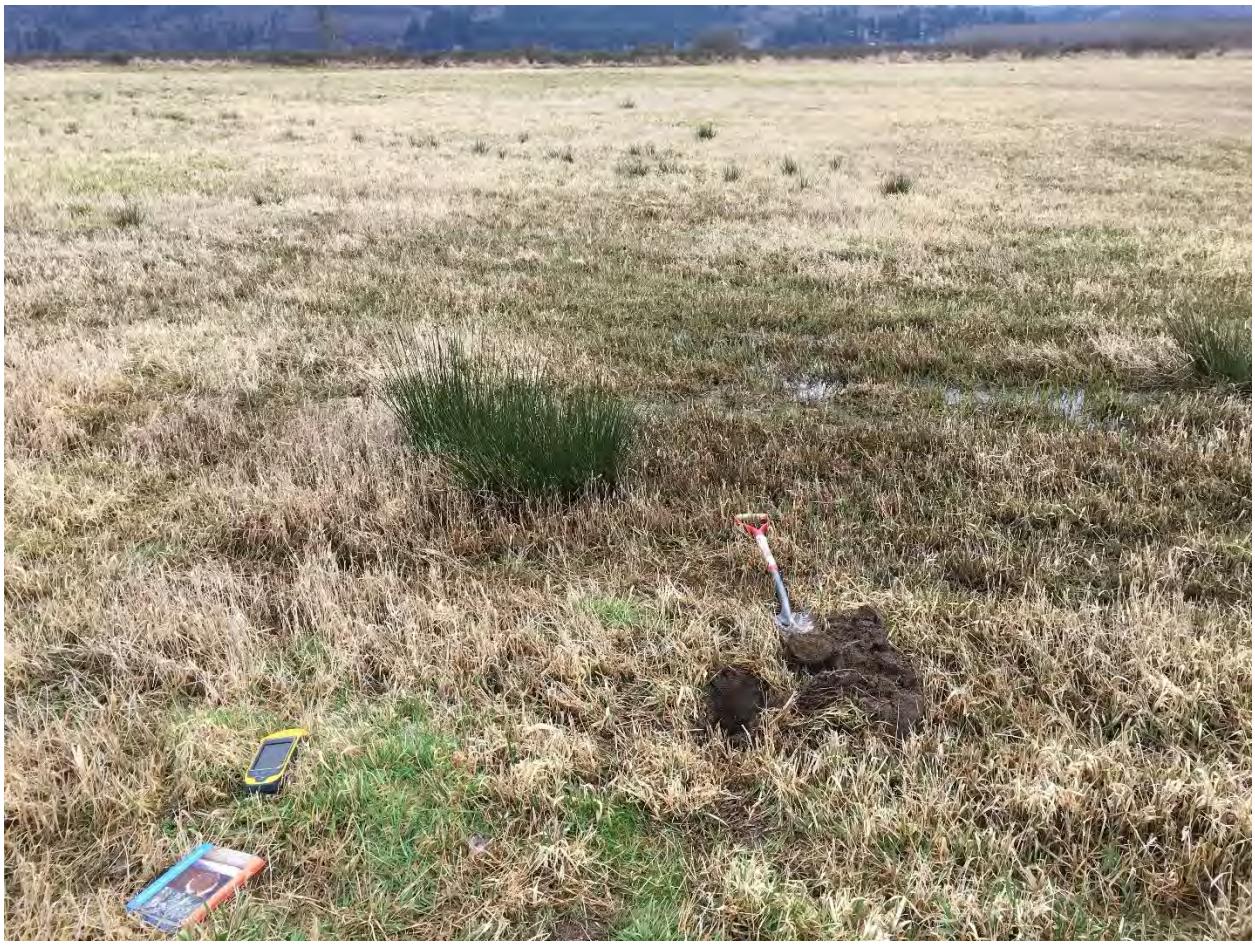


Photo 6. Sample plot SP-04, located in low, convex feature. Photo facing south.

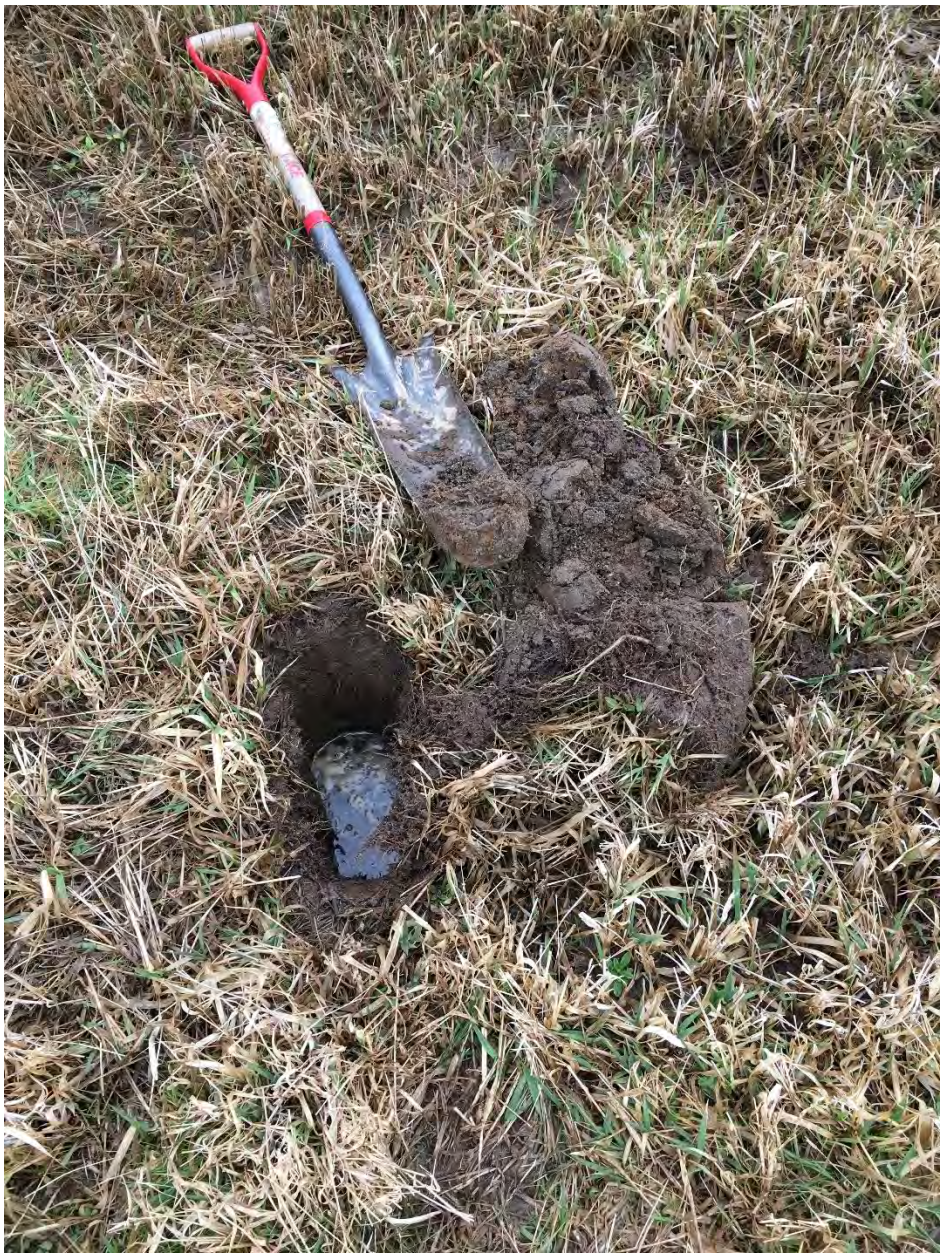


Photo 7. Closeup of SP-04.

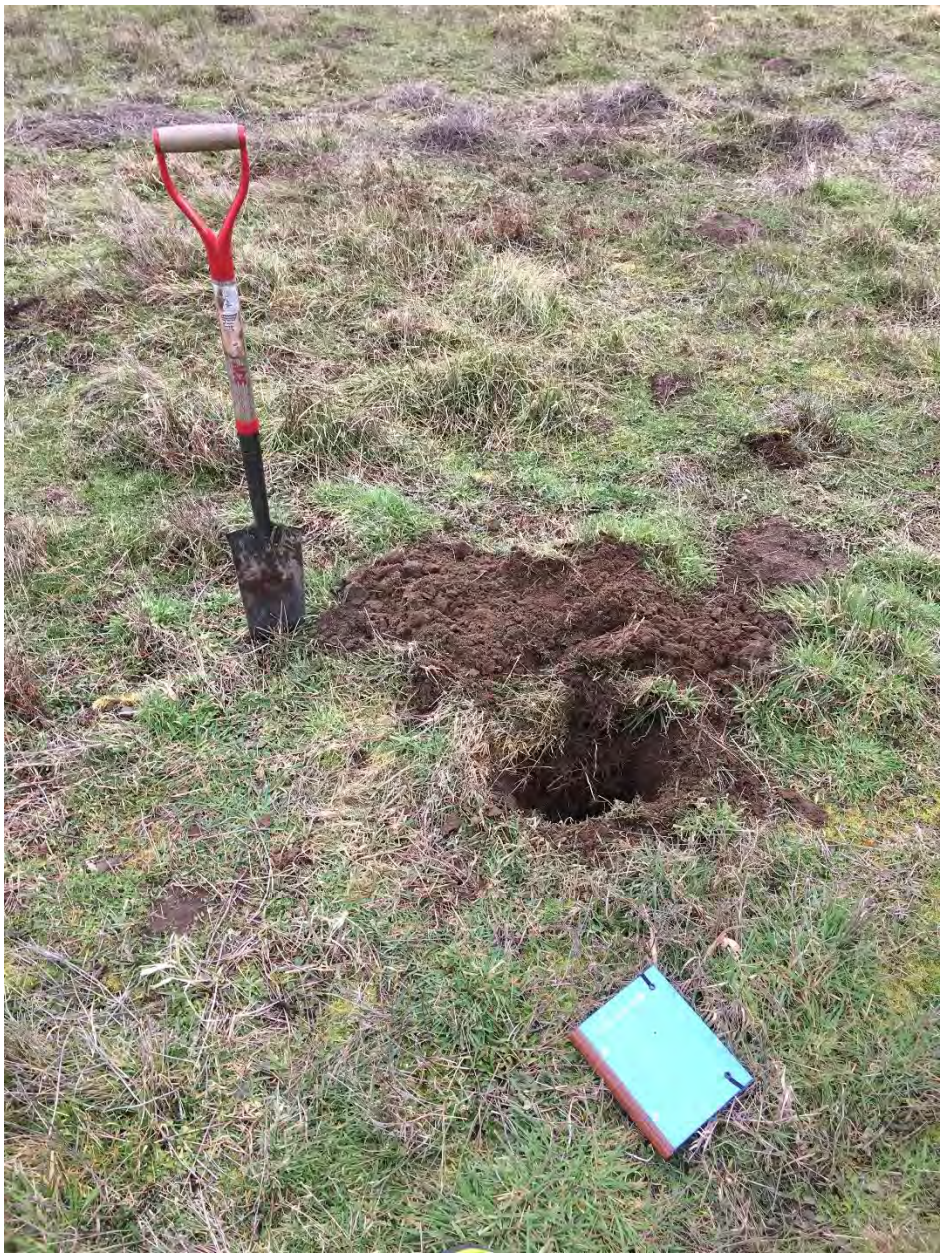


Photo 8. Sample plot SP-05.

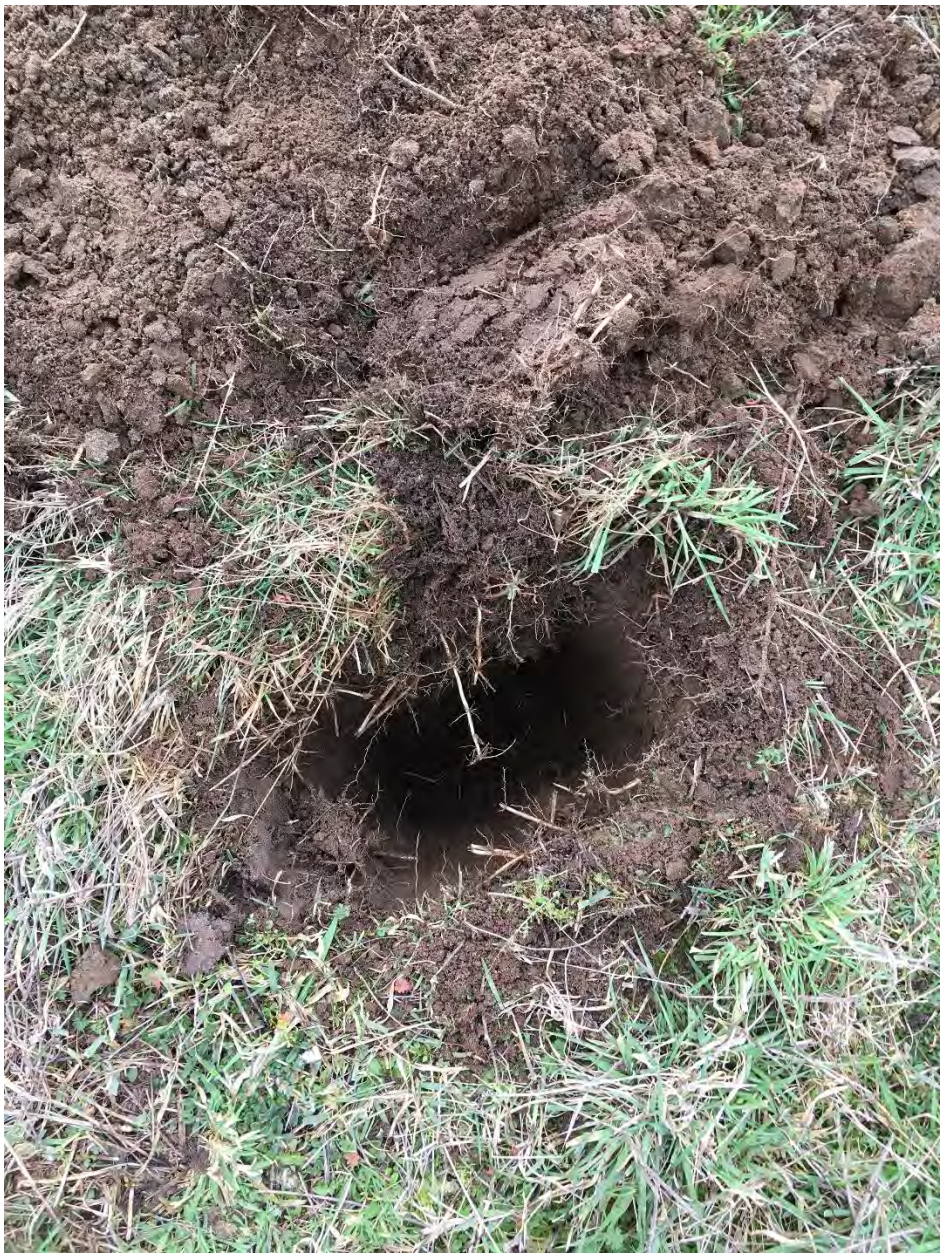


Photo 9. Closeup of SP-05.

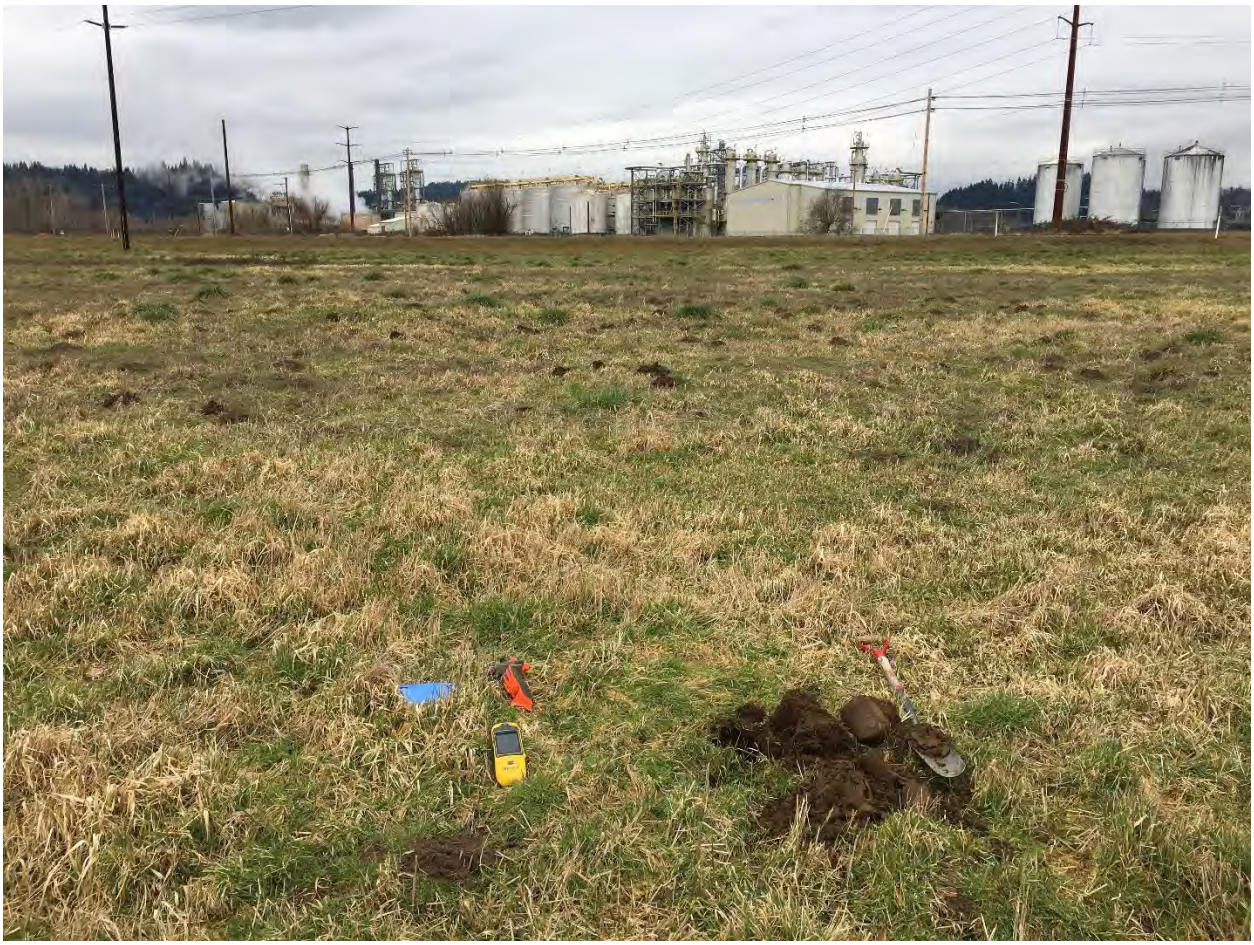


Photo 10. Sample plot SP-06. Photo facing north. Note increase in burrowing activity in background.

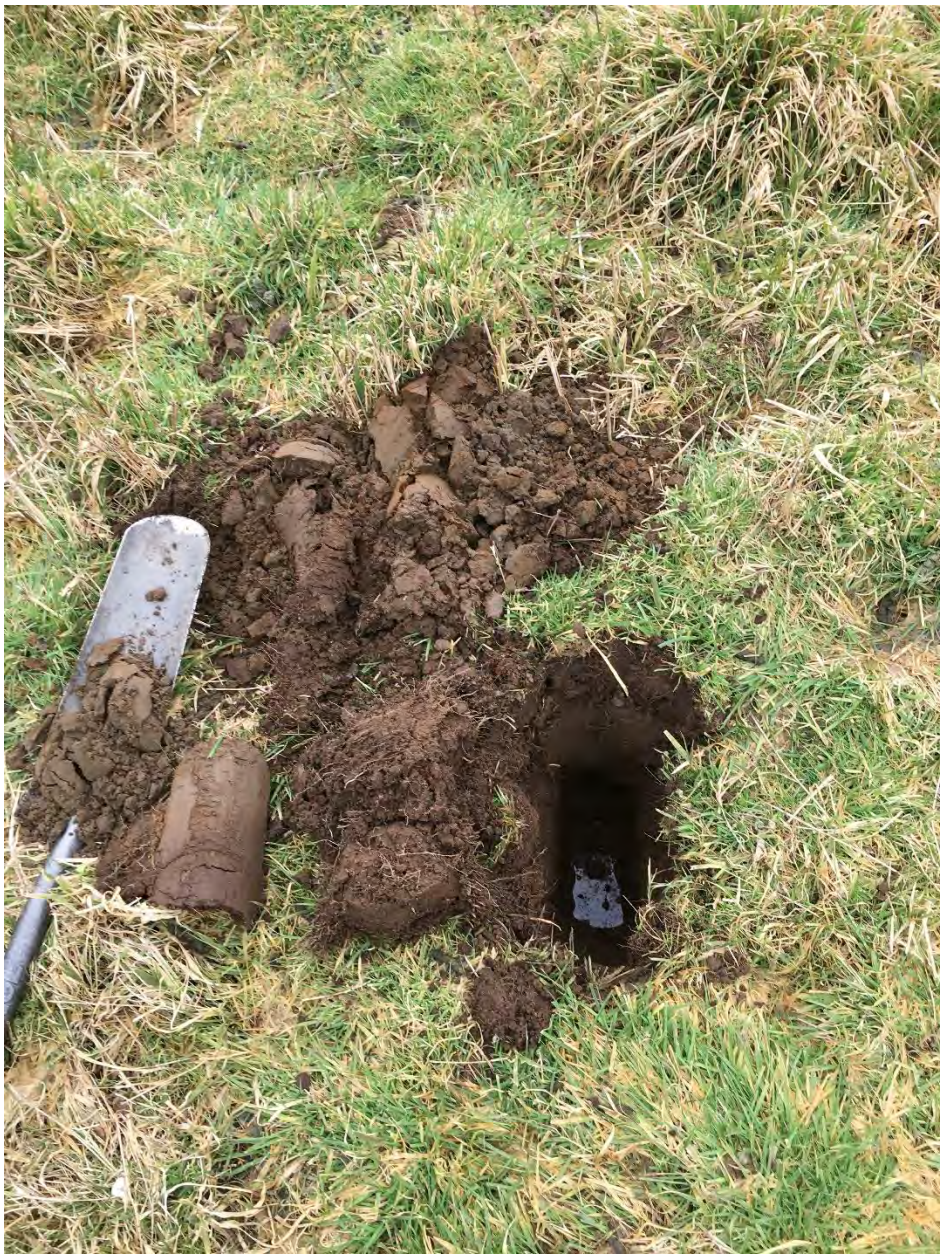


Photo 11. Closeup of Sample Plot SP-06

APPENDIX D: CLIMATE DATA

Rainfall for the Preceding 3-Month Period (Antecedent Rainfall) **WETS Station: Clatskanie, 1971-2000** **Measured Rainfall: CLATSKANIE, 2018-2019 Water Year**								
Prior Months Most Recent Last		WETS Rainfall Percentile 30th inches	 70th	Measured Rainfall inches	Condition Drier, Wetter, Normal	Conditions Value 1=dry, 2=normal, 3=wet	Month Weight	Multiply Previous Two Columns
1st	November	5.92	10.59	5.17	Drier	1	1	1
2nd	December	6.35	10.83	8.43	Normal	2	2	4
3rd	January	5.13	10.00	4.7	Drier	1	3	3
		Precipitation conditions in the prior period were:			Drier than normal (sum 6-9) Normal (sum 10-14) Wetter than normal (sum 15-18)		**Sum:**	**8**
							Drier than Normal	

APPENDIX E: LITERATURE CITED AND REVIEWED

Columbia River Estuary Study Taskforce. 1995. *Historic Habitats of the Lower Columbia River.* Unpublished white paper. 16 p.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79/31. Washington, D.C.: U.S. Fish and Wildlife Service. Available at: http://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. Online edition. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station. Available at: http://el.erdc.usace.army.mil/wetlands/pdfs/wlman87.pdf

Federal Emergency Management Agency. 2019. Flood map service center. Available at: https://msc.fema.gov/portal/. Accessed January 28, 2019.

Google Earth. 2018. Aerial photographs of 12150 SW Tualatin-Sherwood Road, Tualatin, Oregon. Available at: http://earth.google.com. Accessed January 28, 2019.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. *Phytoneuron* 2016-30:1–17. Available at: http://www.phytoneuron.net/ and http://wetland-plants.usace.army.mil/nwpl_static/v33/home/home.html.

McCune, M., M. Rempel, C. Trowbridge, T-L. Nadeau, D. Hicks, and J. Kagan. 2018. Oregon Explorer-Stream Function Assessment Method (SFAM) Map Viewer: an internet tool for SFAM support. Corvallis: Oregon State University Library and Institute for Natural Resources, Oregon State University. Available at: http://tools.oregonexplorer.info/OE_HtmlViewer/Index.html?viewer=orwap_sfam. Accessed January 11, 2019.

National Oceanic and Atmospheric Administration (NOAA). 2018. AgACIS Regional Climate Center website. Available at: http://agacis.rcc-acis.org/. Accessed March 11, 2019.

Natural Resources Conservation Service (NRCS). 2018a. Web Soil Survey 3.3. Available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed January 28, 2019.

Attachment 7. Redline Site Certificate

~~TENTH~~ ELEVENTH AMENDED

SITE CERTIFICATE

FOR THE

PORT WESTWARD GENERATING PROJECT

Issued By

OREGON ENERGY FACILITY SITING COUNCIL
625 MARION STREET NE
SALEM OR 97301-3737

PHONE: 503-378-4040
FAX: 503-373-7806

~~August~~ Month xx, ~~2013~~2019

TABLE OF CONTENTS

~~TENTH~~ ELEVENTH AMENDED
SITE CERTIFICATE
FOR THE
PORT WESTWARD GENERATING PROJECT

A. INTRODUCTION

This site certificate for the Port Westward Generating Project ("PWGP or Project") is issued and executed in the manner provided by ORS Chapter 469, by and between the State of Oregon ("State"), acting by and through its Energy Facility Siting Council ("Council"), and the Portland General Electric Company ("PGE" or "Certificate Holder").

The findings of fact, reasoning and conclusions of law underlying the terms and conditions of this site certificate are set forth in the following documents, which by this reference are incorporated herein: (a) the Council's Final Order in the Matter of the Application for a Site Certificate for the Port Westward Generating Project, which the Council granted on November 8, 2002; (b) the Council's Final Order in the Matter of the Site Certificate for the Port Westward Generating Project Request for Amendment No. One, which the Council granted on December 5, 2003; (c) the Council's Final Order in the Matter of the Site Certificate for the Port Westward Generating Project Request for Amendment No. Two, which the Council granted on September 24, 2004; (d) the Council's Final Order in the Matter of the Site Certificate for the Port Westward Generating Project Request for Amendment No. Three, which the Council granted on January 28, 2005; and (e) the Council's Final Order in the Matter of the Fourth Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on May 19, 2006; (f) the Council's Final Order in the Matter of the Fifth Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on September 29, 2006, (g) the Council's Final Order in the Matter of the Sixth Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on March 27,2009 (h) the Council's Final Order in the Matter of the Seventh Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on March 12, 2010; (i) the Council's Final Order in the Matter of the Eighth Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on August 19, 2011; (j) the Council's Final Order in the Matter of the Ninth Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on March 15, 2013; and (k) the Council's Final Order in the Matter of the Tenth Request to Amend the Site Certificate, which the Council granted on August ~~xx~~23, 2013. (l) the Council's Final Order in the Matter of the Eleventh Request to Amend the Site Certificate for the Port Westward Generating Project, which the Council granted on Month xx, 2019. [Amendments No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 & ~~10~~11]. Collectively, we refer to the Final Orders listed in (a) through (~~k~~l) as "the Orders".

In interpreting this site certificate, any ambiguity shall be clarified by reference to, and in the following priority: this Site Certificate, the record of the proceedings that led to the Orders, and

the Application for a Site Certificate for the Port Westward Generating Project. As used in this Site Certificate, the "application for site certificate" or the "ASC" includes: (a) the Application for a Site Certificate for the Port Westward Generating Project, which the Department of Energy ("Department") filed on April 11, 2002; (b) the Certificate Holder's Request for First Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on October 25, 2003; (c) the Certificate Holder's Request for Second Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on May 7, 2004; (d) the Certificate Holder's Request for Third Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on November 3, 2004, (e) the Certificate Holder's Request for Fourth Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on January 18, 2006, (f) the Certificate Holder's Request for Fifth Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on July 18, 2006, (g) the Certificate Holder's Request for Sixth Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on November 7,2008, (h) the Certificate Holder's Request for Seventh Amendment to the Site Certificate for the Port Westward Generating Project, which the Council received on September 18, 2009, (i) the Certificate Holder's Request for the Eighth Amendment to the Site Certificate for Port Westward Generating Project, which the Council received on November 4, 2010, (j) the Certificate Holder's Request for the Ninth Amendment to the Site Certificate for Port Westward Generating Project, which the Council received on October 30, 2012, ~~and~~ (k) the Certificate Holder's Request for the Tenth Amendment to the Site Certificate for Port Westward Generating Project, which the Council received on May 28, 2013, and (l) the Certificate Holder's Request for the Eleventh Amendment to the Site Certificate for Port Westward Generating Project, which the Council received on April xx, 2019. **[**Amendments 1 through ~~10~~11]**.**

The terms used in this Site Certificate shall have the same meaning set forth in ORS 469.300, 469.503(2)(e) and Oregon Administrative Rules (OAR) 345-001-0010, except where otherwise stated or where the context clearly indicates otherwise.

B. SITE CERTIFICATION

1. To the extent authorized by State law and subject to the conditions set forth herein, the State approves and authorizes the Certificate Holder to construct, operate and retire a natural gas-fired, combined cycle combustion turbine energy facility, together with certain related or supporting facilities, at the site as described in Section C of this Site Certificate, near Clatskanie, Oregon. ORS 469.401(1).

2. This site certificate shall be effective (1) until it is terminated pursuant to OAR 345-027-0110 or the rules in effect on the date that termination is sought, or (2) until the Site Certificate is revoked pursuant to ORS 469.440 and OAR 345-029-0100 or the statutes and rules in effect on the date that revocation is ordered. ORS 469.401(1).

3. This Site Certificate does not address, and is not binding with respect to, matters that were not addressed in the Council's Final Order, as amended. These matters include, but are not limited to: building code compliance, wage, hour and other labor regulations, local government fees and charges, and other design or operational issues that do not relate to siting the Project; and permits issued under statutes and rules for which the decision on compliance has been delegated by the Federal government to a state agency other than the Council. ORS 469.401(4) and 469.503(3).

4. Both the State and the Certificate Holder shall abide by local ordinances and state law and the rules of the Council in effect on the date this Site Certificate is executed. In addition, upon a clear showing of a significant threat to the public health, safety or the environment that requires application of later-adopted laws or rules, the Council may require compliance with such later-adopted laws or rules. ORS 469.401(2).

5. For a permit, license or other approval addressed in and governed by this Site Certificate, the Certificate Holder shall comply with applicable state and federal laws adopted in the future to the extent that such compliance is required under the respective state agency statutes and rules. ORS 469.401(2).

6. Subject to the conditions herein, this Site Certificate binds the State and all counties, cities and political subdivisions in this state as to the approval of the site and the construction, operation and retirement of the Project as to matters that are addressed in and governed by this Site Certificate. ORS 469.401(3).

7. Each affected state agency, county, city and political subdivision in Oregon with authority to issue a permit, license or other approval addressed in or governed by this Site Certificate shall, upon submission of the proper application and payment of the proper fees, but without hearings or other proceedings, issue such permit, license or other approval subject only to conditions set forth in this Site Certificate. ORS 469.401(3).

8. After issuance of this Site Certificate, each state agency or local government agency that issues a permit, license or other approval for the Project shall continue to exercise enforcement authority over such permit, license or other approval. ORS 469.401(3).

9. After issuance of this Site Certificate, the Council shall have continuing authority over the site and may inspect, or direct the Department to inspect, or request another state agency or local government to inspect, the site at any time in order to assure that the Project is being operated consistently with the terms and conditions of this Site Certificate. ORS 469.430.

10. The Certificate Holder may develop the energy facility in two phases. Phase 1 would consist of the southernmost generating unit ("Unit 1"), including one combustion turbine generator, heat recovery steam generator, steam generator, one step-up transformer bank, auxiliary transformer, and cooling tower. Phase 1 would also include all of the energy facility components common to the two units and the related or supporting facilities common to the

two units. Phase 2 would consist of the northernmost generating unit ("Unit 2") and its associated facilities. All conditions of this Site Certificate apply equally to Phase 1 and Phase 2, unless a condition specifies different obligations for Phase 1 or Phase 2. [Amendments No. 1, 3 & ~~3~~11]

C. SITE DESCRIPTIONS

C.1. FACILITY

C.1.a. Major Structures and Equipment

Major Structures and Equipment. The net electric power output of the energy facility will be about 650 MW comprised of base load generation, power augmentation (i.e., duct burning ~~and non-base load generation.~~), and non-base load generation. The power augmentation and non-base load generation provide flexible peaking, load-following, and wind integration services that are needed to maintain a reliable and stable utility system. [Amendment No. 7 & 11]

Unit 1 of the energy facility will consist of one heavy-duty frame-type combustion turbine generator (Mitsubishi G Class), one heat recovery steam generator ("HRSG"), and one steam turbine. It will burn natural gas in the combustion turbine and duct burners. Expanding gases from combustion will turn the rotor within the turbine that is connected to an electric generator~~-~~. The hot gases exhausted from the combustion turbine and duct burners will be used to raise steam in the HRSG. Steam from the HRSG will be expanded through the steam turbine driving its own electric generator. [Amendments No. 1 & 7.]

For Unit 1, the combustion turbine will be housed in a turbine building that provides thermal insulation, acoustical attenuation and fire extinguishing media containment. The turbine building, occupying a footprint measuring about 150 feet by 250 feet and standing about 90 feet high, will also house the steam turbine generator, condenser and balance of plant equipment. The enclosure will allow access for routine inspection and maintenance. The administration building, occupying a footprint measuring about 110 feet by 140 feet and standing about 30 feet high, includes the control room and administrative offices. [Amendment No. 7 & 11]

For Unit 1, the HRSG will occupy a footprint measuring about 50 feet by 150 feet and will stand about 110 feet high. A stack will be provided for the HRSG. The stack will be about 36 feet in diameter and 200 feet high. [Amendment No. 7]

For Unit 2, aeroderivative combustion turbine generators will be equipped with outdoor enclosures with thermal insulation, acoustical attenuation and fire extinguishing media containment. Reciprocating engine generators will be housed in an engine building, occupying a footprint measuring up to 100 feet by 500 feet and standing about 30 to 40 feet high. [Amendment No. 7]

Six transformers will step-up the generator voltages to the substation voltage of 230 kilovolts ("kV"). Two auxiliary transformers will supply power for plant auxiliary loads. [Amendments No. 1 & 7**]**

Two mechanical-draft cooling towers will be used to remove the waste heat from the main condenser and the plant auxiliary heat exchangers. The cooling towers and circulating water pumps will cover an area of about 75 feet by 650 feet and will stand about 50 feet high. [Amendment No. 7]

A switchyard or dead-end transmission structure will interconnect the plant's output to the 230-kV transmission network. The switchyard footprint will measure about 300 feet by ~~500~~ 550 feet. [Amendment No. 1 & 11]

An auxiliary boiler will supply steam for plant start-ups and short duration shut-downs. The auxiliary boiler will be fueled with natural gas. [Amendment No. 3]

Additional facilities will include: a plant services/warehouse building, a boiler feed pump building; a fire water pump building; a water treatment building; a clarifier; a settling basin; a condensate tank, a fire water/service water storage tank for Unit 1 (400,000 gallon), a fire water storage tank for Unit 2 (400,000 gallon), and ~~two~~ one demineralized water storage tank~~s~~ (4~~4~~0,000 gallon ~~and 1,100,000 gallon capacity respectively~~); lubricating oil tanks**;** a natural gas metering station; natural gas compressor stations with electric compressors of 1,000 to 7,000 horsepower total, enclosed in buildings with acoustical insulation; and~~,~~ aqueous ammonia storage tanks (each with up to 70,000-gallon capacity and equipped with containment). [Amendments No. 1, 7 & ~~7~~11]

Natural gas will not be stored at the energy facility site. Diesel fuel for the fire pumps and reciprocating engine micro-pilot systems will be stored in aboveground tanks. Water treatment chemicals will be stored in permanent aboveground storage tanks or portable plastic tanks (totes). To prevent storm water runoff from chemical storage, all fuel and chemical storage will be inside buildings or under cover in paved areas with a curb. All individual spill containment areas will be designed to hold at least 110 percent of the volume of liquids stored within them. [Amendment No. 7]

A complete fire protection system will be installed within the buildings and yard areas at the energy facility site. The system will be designed to meet the requirements of the Uniform Fire Code, as amended by Oregon and the National Fire Protection Association, and all other applicable fire protection standards. The fire protection system will include a fire water system, a dry chemical extinguishing system, a carbon dioxide ("CO2") extinguishing system, and portable fire extinguishers. The road system within the energy facility site will be designed for access by large trucks needed for equipment and material deliveries. The minimum turning inside radius for roads will be 40 feet.

The fire water system will include a fire water supply loop, fire hydrants, sprinkler systems, and hoses placed at appropriate locations. Reserved capacity in the 180,000-gallon fire water/service water storage tank will serve as the firewater source.

The combustion turbine enclosures will be protected by foam or CO2 systems. If the systems were to activate, an alarm will sound and/or a visual indicator will light up on the gas turbine control panel.

Portable fire extinguishers will be placed at key locations within the energy facility site. The type and number of portable fire extinguishers will conform to applicable code requirements.

The Certificate Holder may develop the whole facility at the same time or it may develop only one of the generating units and the related or supporting facilities ("Phase 1") or the two units of the energy facility in two distinct phases ("Phase 1" and "Phase 2"). As referred to in this Site Certificate, the Certificate Holder would develop Phase 1 first if it develops the energy facility in phases. Phase 1 would consist of the southernmost generating unit ("Unit 1"), including a combustion turbine generator, heat recovery steam generator, steam generator, one step-up transformer bank, auxiliary transformer, and cooling tower. Phase 1 would also include all of the energy facility components common to the two units and the related or supporting facilities common to the two units. [Amendments No. 1, 3 & ~~3~~11]

Output. The net electric power output of the energy facility will be up to 650 MW, comprised of base load generation, power augmentation (i.e. duct burning), and non-base load generation. The power augmentation and non-base load generation provide flexible peaking, load-following, and wind integration services that are needed to maintain a reliable and stable utility system. [Amendments No. 1, 3 & 7]

The Certificate Holder proposes to operate Unit 1 with power augmentation technologies for 3,000 hours annually on average. The Certificate Holder proposes to operate Unit 2 as a non-base load power plant. [Amendments No. 1, 3 & 7]

Fuel Use. The energy facility will use natural gas as the only fuel to power the turbines, reciprocating engines, and the power augmentation technologies. It will use up to approximately 4,700 MMBtu per hour of natural gas at full load with the duct burners in operation at the average annual site condition. [Amendments No. 1, 3, 7 & ~~7~~11]

Water Use. The energy facility will obtain water to generate steam and to cool the steam process from an existing PGE intake structure on the Bradbury Slough of the Columbia River. For Unit 1, the Certificate Holder obtained a permanent transfer of 5.4 cfs of a water right associated with PGE's Trojan Nuclear Plant, Certificate No. 81969. For Unit 2, PGE will obtain a permanent transfer of an additional 3.0 cfs under the same water right.[1] [Amendments No. 1, 3 &7]

[1] WRD will issue the transferred water right a new number, replacing #81969

Average water demand over at the energy facility will be about 2,800 gallons per minute ("gpm"), or 4.03 ~~-~~million gallons per day ("gpd"). Peak water demand will be about 3,770 gpm, 5.4 million gpd, or 8.4 cubic feet per second ("cfs"). [Amendments No.1, 3 & 7]

PGE owns and operates an existing intake structure on the Bradbury Slough, which will be the authorized point of diversion for surface water rights transferred for use at the energy facility site. To serve the energy facility, PGE will place additional pumps within the existing intake facility. PGE will employ fish screens compliant with National Marine Fisheries Service ("NMFS") screening criteria and Oregon Department of Fish and Wildlife ("ODFW") criteria. [Amendments No. 1& 7]

Wastewater. Process blowdown is washdown water, filter backwash or other non-sanitary liquid waste produced within the energy facility. The average volume of process blowdown for both units combined will be about 30 gpm. Cooling system blowdown is water withdrawn from the cooling system to control the buildup of dissolved salts. The average volume of cooling system blowdown for both units combined will be about 970~~-~~ gpm, but it could vary depending on the quality of the river water supply. The energy facility will discharge its process and cooling system blowdown to the Columbia River under a National Pollution Discharge Elimination System ("NPDES") permit that the Port of St. Helens has requested from DEQ. [Amendments No. 1 & 7].

The Certificate Holder will discharge sanitary sewage to an engineered septic tank and drain field at a rate of about 500 gallons per day, ~~as permitted by a Water Pollution Control Facilities permit~~under the oversight of Columbia County. The Certificate Holder will route storm water from roofs and paved areas to pervious areas to percolate into the shallow groundwater.

C.1.b. Related or Supporting Facilities

The energy facility will include the following related or supporting facilities:

Natural Gas Pipelines. Natural gas will fuel the combustion turbine generators, reciprocating engines, and duct burners. The energy facility will be served by the Kelso-Beaver Pipeline, an existing FERC-regulated interstate pipeline with a current capacity of ~~193~~200,~~000~~913 decatherms per day. PGE owns the pipeline jointly with two other parties. To create the additional capacity that will be required to serve the energy facility, PGE will add 1,000 to 7,000 compressor horsepower to the Port Westward site and/or up to 8,000 compressor horsepower to the Kelso-Beaver Pipeline. All work on the existing pipeline will be subject to FERC approval. The addition of compressor horsepower is intended to ensure 300 to 1000 psig gas pressure at the Port Westward Industrial Area with total capacity of 310 million standard cubic feet/day. [Amendments No. 1, 7 & ~~7~~11]

The interconnecting pipeline, about 18 inches in diameter, between the existing Kelso-Beaver Pipeline and the energy facility will be about 1,000 feet long and will be installed below grade with appropriate cathodic protection.

In addition, the facility will include as a related or supporting facility a secondary natural gas pipeline that will connect the energy facility to an extension of the existing 20-inch NW Natural Beaver Lateral. The connecting pipeline will be approximately 2,000 feet long and about 12 inches in diameter. The new pipeline will be installed below grade with appropriate cathodic protection. The new pipeline will be owned and operated by NW Natural. [Amendment No. 5]

Water Supply Pipeline. Water supply for the energy facility will be drawn from Bradbury Slough at about River Mile 53.8 of the Columbia River from an existing PGE intake facility for the PGE Beaver Generating Plant. The pump capacity of the existing intake facility will be expanded. No major structural improvements or modifications to the intake facility will be required. However, PGE will upgrade the fish screens to comply with NMFS and ODFW criteria regardless of whether it builds the Port Westward Generating Project. The Certificate Holder will install a water supply pipeline about 20 inches in diameter and 6,000 feet long to convey water from the intake facility to the energy facility. The water supply pipeline will traverse upland areas and will avoid wetlands. [Amendment No. 1]

Chlorination and Electrical Control Buildings. Two small structures will be constructed on upland south of the intake facility. One structure, with a footprint of about 600 square feet, will be for chlorination. The other structure, with a footprint of about 150 feet, will be for electrical control. Underground lines in a 25-foot wide corridor will connect these structures to the intake structure. [Amendment No. 3]

Wastewater Pipeline. Process and cooling wastewater discharged from the energy facility will be collected in a settling basin and returned to the Columbia River about one-half mile northwest of the energy facility, pursuant to the Port of St. Helens' NPDES permit. [Amendment No. 1]

Battery Energy Storage System

The Battery Energy Storage System (BESS) will add 4 to 6 MW of battery energy storage at PWGP as a related or supporting facility to Unit 2. The BESS will be factory built with batteries, enclosures, power conversion systems (inverters), an interconnection system, and step-up transformers. The point of interconnect will be the switchgear in the existing switchyard.

Utility Lines Between the Energy Facility Site and the PGE Beaver Generating Plant. The Certificate Holder will construct water, backup electricity and communications lines between the existing PGE Beaver Generating Plant and the energy facility. The Certificate Holder will install the lines below ground within existing roadways. Potable water may be conveyed to the energy facility in a pipeline from the potable water storage tank located in the vicinity of the PGE water intake facility that currently serves the PGE Beaver Generating Plant. The potable water pipeline will be about two inches in diameter. The Certificate Holder will install the

potable water line underground. The potable water line will join the energy facility's water supply pipeline corridor at their intersection as shown on revised Figure B-2. [Amendment No. 1]

The Certificate Holder may also construct a demineralized water pipeline about six inches in diameter from the PGE Beaver Generating Plant to the energy facility. If the Certificate Holder constructs the demineralized water pipeline, it will not construct a water treatment building as part of the energy facility. The Certificate Holder will install a backup 13.8 kV electrical distribution line and a communications line in a conduit from the PGE Beaver Generating Plant to the energy facility. The demineralized water line, communications line, and backup electricity lines will be about 1,~~-~~200 feet long, and the portion of the potable water line between the potable water storage tank and the water supply pipeline corridor will be about 1,700 feet long [Amendments No. 1 & 3]

Temporary Construction Staging and Laydown Areas. Temporary construction staging and laydown areas totaling approximately 12.4 acres will be located around the energy facility site. Another laydown area of about 6 acres will be located on upland south of the existing PGE water intake structure. The areas will be used for storing equipment and materials and as staging areas for constructing the power plant. Construction laydown and staging areas are as depicted on Figure B-2 rev.1, submitted with the Fourth Request for Amendment on January 18, 2006. [Amendment No. 4]

In addition to the temporary construction staging and laydown areas approved through RFA #4 and through the Change Order issued April 29, 2013, which allows the Certificate Holder to use a 9.13-acre graveled area within the fence line of the adjacent Beaver Generating Plant for laydown and staging area used in the construction of Unit 2, the Certificate Holder is authorized to use an additional approximately 10.9 acres for temporary laydown, as depicted in Figures 1-3 of the Final Order approving Amendment #10. Specifically, the previously approved laydown area north of the energy facility site is expanded by approximately 1.9 acres; the previously approved laydown area to the south, in the vicinity of the water intake structure, is expanded by approximately 5.7 acres; and the Certificate Holder is authorized to use approximately 3.3 acres within the fence line of the Beaver Generating Plant. [Amendment No. 10]

Spoils Disposal Area. Excess soils from construction at the energy facility site will be spread across the spoils disposal site of about 11.6 acres, which will be located southeast of the PGE Beaver Generating Plant. [Amendment No. 3].

Electric Transmission Line. The energy facility will deliver electric power to the regional grid by means of a new transmission line consisting of one 230 kV circuit on monopole towers (up to 120 feet high) routed along existing power line easements. There ~~are~~ were two transmission line alternatives routes under consideration, with two other short alternative segments in the vicinity of the BPA Allston Substation:

Alternative One. The first alternative will entail routing the transmission line from the energy facility to the Bonneville Power Administration ("BPA") Allston Substation near Alston, Oregon (a distance of about 10 miles).

Alternative Two. The second alternative will entail routing the transmission line from the energy facility to the PGE Trojan Substation near Goble, Oregon (a distance of about 20 miles).

PWGP and the Summit Project present a unique situation regarding the transmission lines for their facilities. The two proposed energy projects will be located close to each other and will use the same existing transmission corridor and the same towers from Port Westward to the vicinity of the BPA Allston Substation, Alternative One. The towers will be double-circuited, with PWGP on one side and the Summit Project on the other.

The Portland General Electric Transmission Group will build the transmission lines for either or both projects, depending on which energy facilities are eventually constructed. The transmission line for each project is a related or supporting facility for that project, and therefore, must be built to Council standards. However, because the Council is reviewing the applications for both projects simultaneously, because they will use the same towers, and because the same company will build and operate the transmission lines, the Council has consolidated the reviews within the PWGP proceeding and is placing conditions for the transmission lines in the site certificate for the Port Westward Generating Project.

Some conditions account for the possibility that the Certificate Holder may construct the Port Westward to BPA Allston Substation Transmission Line separately from constructing the energy facility. Additionally, if the Certificate Holder for PWGP does not construct the energy facility within the time specified in its Site Certificate or if it terminates its Site Certificate, the Council intends that the Certificate Holder of the Summit Project must amend its Site Certificate to include the 230 kV transmission line from the Summit Project to the BPA Allston Substation.

C.2. LOCATION OF THE FACILITY

C.2.a. The Energy Facility Site

The energy facility will be located about seven miles by road northeast of the city of Clatskanie in Columbia County, Oregon. The energy facility site will be located on an approximately 852-acre parcel leased to PGE by the Port of St. Helens in Section 15, Township 8 North, Range 4 West, Willamette Meridian. The energy facility site will be fenced and will comprise about 26 acres of the larger parcel [Amendments No. 1, 2 & 7]

Bradbury Slough of the Columbia River lies to the northeast of the energy facility site. Access to the energy facility site will be by traveling about 1.5 miles north on Kallunki Road from its intersection with Alston-Mayger Road. The existing PGE Beaver Generating Plant is located about one-half mile southwest of the energy facility site.

C.2.b. Related or Supporting Facility Sites

Natural Gas Pipeline Corridors. The primary natural gas pipeline will be about 18 inches in diameter and will interconnect with the existing Kelso-Beaver Pipeline about 1,000 feet west of the energy facility site. The natural gas pipeline corridor will lie within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Section 15, Township 8 North, Range 4 West, Willamette Meridian.

The secondary natural gas pipeline will be about 12 inches in diameter, extending from the energy facility to an extension of the existing NW Natural Beaver Lateral, near the northeast corner of the Beaver Generating Plant. The related or supporting portion of the new natural gas pipeline corridor will be approximately 2,000 feet long and will lie within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Sections 15 and 16, Township 8 North, Range 4 West, Willamette Meridian. [Amendment No. 5]

Water Supply Pipeline Corridor. The proposed water supply pipeline will supply raw water to the energy facility from the existing PGE Beaver Generating Plant water intake structure in Bradbury Slough of the Columbia River. The pipeline right-of-way will be about 50 feet wide and 6,000 feet long, will cover an area of about 7 acres, and will lie within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Section 15, Township 8 North, Range 4 West, Willamette Meridian.

Chlorination and Electrical Control Buildings. Two small structures will be constructed on upland south of the existing PGE Beaver Generating Plant water intake structure in Bradbury Slough. The two structures, with a combined footprint of about 750 square feet, will lie within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Section 15, Township 8 North, Range 4 West, Willamette Meridian. [Amendment No. 3].

Wastewater Pipeline Corridor. Water discharged from the energy facility will be returned to the Columbia River about one-half mile northwest of the energy facility. The wastewater pipeline corridor will be about 100 feet wide and 2,400 feet long, will cover an area of about 6 acres, and will lie primarily within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Section 15 and 16, Township 8 North, Range 4 West, Willamette Meridian. [Amendment No. 1]

Battery Energy Storage System

The BESS will be installed within the energy facility site described in Section C.2.a.

Utility Line Corridor Between the Energy Facility Site and the PGE Beaver Generating Plant. The Certificate Holder will construct a potable water pipeline, backup electricity line, communications line and possibly a demineralized water pipeline from the PGE Beaver Generating Plant or the potable water tank to the energy facility site. It will install the lines a minimum depth of three feet below grade in existing roadways entirely with the 825-acre

parcel that the Port of St. Helens has leased to PGE. The parcel is located within Section 15 and 22, Township 8 North, Range 4 West, Willamette Meridian. [Amendment No. 1]

Temporary Construction Staging and Laydown Areas. Temporary construction staging and laydown areas totaling approximately 12.4 acres will be located around the energy facility site, within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Sections 15 and 16, Township 8 North, Range 4 West, Willamette Meridian. Another laydown area of about 6 acres will be located on upland south of the existing PGE water intake structure within Section 15, Township 8 North, Range 4 West, Willamette Meridian. The areas will be used for storing equipment and materials and as staging areas for constructing the power plant. Construction laydown and staging areas are as depicted on Figure B-2 rev.1 as submitted with the Request for Fourth Amendment on January 18, 2006 [Amendment No. 4]

Spoils Disposal Area. Excess soils from construction at the energy facility site will be spread across the spoils disposal site of about 11.6 acres, which will be located southeast of the PGE Beaver Generating Plant, within the 852-acre parcel leased to PGE by the Port of St. Helens and situated within Sections 15 and 22, Township 8 North, Range 4 West, Willamette Meridian. [Amendment No. 3]

Transmission Line Corridor. The transmission line will follow one of two alternative routes:

Alternative One. Under this alternative, the energy facility will deliver electric power to the BPA Allston Substation near Alston, Oregon, by means of a new 230-kV circuit on monopole steel structures, except where it will have to cross the existing BPA lines. A separate 230 kV circuit will carry the output of the Summit Project on the same structures, as noted above. The new transmission line will be routed on an existing PGE right-of-way that is 250 feet wide, except at the BPA Allston Substation where a new right-of-way may be required. The structures will be placed on or near the centerline of the unused north half of the right-of-way. The transmission line corridor will be about 125 feet wide and 10 miles long, will occupy an area of about 300 acres, and will pass through Sections 15, 22, 23, 26, 35 and 36, Township 8 North, Range 4 West, and Sections 31, 5, 6, 4, 3 and 10, Township 7 North, Range 3 West, Willamette Meridian.

Alternative Two. Under this alternative, the energy facility will deliver electric power to Trojan near Goble, Oregon, by means of a new 230-kV circuit on monopole steel structures. Between PWGP and the BPA Allston Substation, the new transmission line will be routed on an existing PGE right-of-way 250 feet wide as described in Alternative One. The structures will be placed on or near the centerline of the unused north half of the right-of-way. Between the BPA Allston Substation and Trojan, the new transmission line will run parallel to an existing BPA transmission line. This section of the transmission line corridor will be about 125 feet wide and ten miles long, will occupy an area of about 300 acres, and will pass through Sections 10, 11, 15, 14, 23 and 24, Township 7 North, Range 3 West, and Sections 19, 30, 29, 28, 33 and 34, Township 7 North, Range 2 West, and Sections 3 and 2, Township 6 North, Range 2 West, Willamette Meridian.

Alternates 3 and 4. These short alternate segments are in the vicinity of the BPA Allston Substation. They provide flexibility for interconnecting with the substation.

Unanalyzed Options. As shown on Figure C-2 of the ASC, and in particular the enlarged detail of the BPA Allston Substation, there is a segment of Alignment 1 identified as "2nd (future) circuit." This Site Certificate does not address that proposed segment of Alignment 1.

D. COUNCIL SITING STANDARDS

D.1. [PLACEHOLDER]

[No Conditions]

D.2. ORGANIZATIONAL EXPERTISE

(1) The Certificate Holder shall report to the Department of Energy ("Department") in a timely manner any change in the ownership of Portland General Electric Company ("PGE").

(2) Before beginning construction of the energy facility, the Port Westward to Bonneville Power Administration ("BPA") Allston Substation Transmission Line, or other related or supporting facilities, the Certificate Holder shall identify to the Energy Facility Siting Council ("Council") whom it has chosen to act in the role of the engineering, procurement and construction ("EPC") contractor(s) for specific portions of the work.

(3) If the Certificate Holder chooses a third-party contractor to operate the facility, the Certificate Holder shall submit to the Council the identity of the contractor so the Council may review the qualifications and capability of the contractor to meet the standards of OAR 345-0022-0010. If the Council finds that a new contractor meets these standards, the Council shall not require an amendment to the Site Certificate for the Certificate Holder to hire the contractor.

(4) Any matter of non-compliance under this Site Certificate shall be the responsibility of the Certificate Holder. Any notice of violation issued under the Site Certificate will be issued to the Certificate Holder. Any civil penalties levied shall be levied on the Certificate Holder.

(5) The Certificate Holder shall contractually require the EPC contractor(s) and all independent contractors and subcontractors involved in the construction and operation of the facility to comply with all applicable laws and regulations and with the terms and conditions of the Site Certificate. Such contractual provision shall not operate to relieve the Certificate Holder of responsibility under the Site Certificate.

(6) The Certificate Holder shall obtain necessary state and local permits or approvals required for the construction, operation and retirement of the facility or ensure that its contractors obtain the necessary state and local permits or approvals.

(7) [Deleted]. [Amendments No. 1 & 7]

(8) Before beginning construction of the energy facility, the Certificate Holder shall deliver to the Department evidence that the Oregon Department of Environmental Quality has issued to the Port of St. Helens a National Pollutant Discharge Elimination System ("NPDES") permit that provides for the discharge of non-sanitary wastewater from the Port Westward Industrial Site, including all non-sanitary wastewater produced by the energy facility.

(9) Before beginning construction of the energy facility, the Certificate Holder shall deliver to the Department a copy of the agreement between the Certificate Holder and the Port of St. Helens that provides for discharge of non-sanitary wastewater from the energy facility by means of the NPDES permit issued to the Port of St. Helens.

D.3. RETIREMENT AND FINANCIAL ASSURANCE

(1) The Certificate Holder shall retire the facility if the Certificate Holder permanently ceases construction or operation of the facility. The Certificate Holder shall retire the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110, and prepared pursuant to Condition D.3(2).

(2) Two years before closure of the energy facility, the Certificate Holder shall submit to the Department a proposed final retirement plan for the facility and site, pursuant to OAR 345-027-0110, including:

(a) A plan for retirement that provides for completion of retirement within two years of permanent cessation of operation of the energy facility and that protects the public health and safety and the environment;

(b) A description of actions the Certificate Holder proposes to take to restore the site to a useful, non-hazardous condition; and,

(c) A detailed cost estimate, a comparison of that estimate with the dollar amount secured by a bond or letter of credit and any amount contained in a retirement fund, and a plan for assuring the availability of adequate funds for completion of retirement.

(3) The Certificate Holder shall prevent the development of any conditions on the site that would preclude restoration of the site to a useful, non-hazardous condition to the extent that prevention of such site conditions is within the control of the Certificate Holder.

(4) A retirement plan that the Certificate Holder submits may provide transmission lines constructed and operated under this Site Certificate remain in operation to serve other energy facilities. [Amendment No. 3]

(5) The Certificate Holder shall submit to the State of Oregon, through the Council, a bond or letter of credit in the amount described below, naming the State of Oregon, acting by and through the Council, as beneficiary or payee [Amendments No. 3 & 7]

(a) Before beginning construction of Unit 1, the Certificate Holder submitted a bond or letter of credit in the amount of $3,698,000 (in 2004 dollars as of the fourth quarter). Upon execution of the Seventh Amended Site Certificate**,** the Certificate Holder shall adjust the amount of the bond or letter of credit to $5,201,000 (in 1st Quarter 2010 dollars)**.** [Amendments No. 1, 3 & 7**]**

~~-~~(b) Before beginning construction of Unit 2, the Certificate Holder shall submit a bond or letter of credit in an amount equal to the sum of (i) $5,201,000 (in 1st Quarter 2010 dollars) for Unit 1, plus (ii) an amount for Unit 2 determined by application of the Department's Facility Retirement Cost and Estimating Guide[2] subject to review and approval by the Department. [Amendments No. 3 & 7]

(c) [Deleted]. [Amendments No. 1 & 3]

(d) The form of the bond or letter of credit and identity of the issuer shall be subject to approval by the Council.

(e) The Certificate Holder shall maintain a bond or letter of credit in effect at all times until the energy facility or the Port Westward to BPA Allston Substation Transmission Line has been retired, as appropriate.

(f) The calculation of ~~-~~1st quarter 2010 dollars or X quarter 2019 dollars (or 2002 dollars for purposes of any five year supplemental payments for carbon dioxide offsets for power augmentation on Unit 1) shall be made using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast," or by any successor agency (the "Index")[3]. If at any time the Index is no longer published, the Council shall select a comparable calculation of 2002, 2004, 2010 and ~~2010~~ 2019 dollars. [Amendments No. 3, 6, 7 and ~~7~~11]

[2] The Department's Facility Retirement Cost and Estimating Guide is available from the Oregon Department of Energy

[3] DAS maintains the Index and places it on line at http://www.oregon.gov/DAS/OEA/docs/economic/econdata/other-quarterly.xls

(g) The amount of the bond or letter of credit account shall increase annually by the percentage increase in the Index.

(h) The Certificate Holder shall not revoke or reduce the bond or letter of credit before retirement of the facility without approval by the Council.

(6) The Certificate Holder shall describe in the annual report submitted to the Council, pursuant to OAR 345-026-0080, the status of the retirement fund or other instrument to ensure it has adequate funds to restore the site.

(7) Before beginning construction of the energy facility or BESS, the Certificate Holder shall prepare and submit to the Department a materials management and monitoring plan that addresses the handling of hazardous substances, the measures it will implement to prevent site contamination, and how it will document implementation of the plan during construction. The materials management and monitoring plan shall be subject to approval by the Department. For the purpose of this condition and Conditions D.3(8), D.3(10), D.3(11), and D.3(12) below, the terms "release" and "hazardous substances" shall have the meanings set forth at ORS 465.200. [Amendment No. 11]

(8) Before beginning operation of the energy facility or BESS, the Certificate Holder shall prepare and submit to the Department a materials management and monitoring plan that addresses the handling of hazardous substances, the measures it will implement to prevent site contamination, and how it will document implementation of the plan during operation. The materials management and monitoring plan shall be subject to approval by the Department. [Amendment No. 11]

(9) Not later than 10 years after the date of commercial operation of Phase 1 of the energy facility, and each 10 years thereafter during the life of the energy facility, the Certificate Holder shall complete an independent Phase I Environmental Site Assessment of the energy facility site. Within 30 days after its completion, the Certificate Holder shall deliver the Phase I Environmental Site Assessment report to the Department. [Amendment No. 1]

(10) In the event that any Phase I Environmental Site Assessment identifies improper handling or storage of hazardous substances or improper record keeping procedures, the Certificate Holder shall correct such deficiencies within six months after completion of the corresponding Phase I Environmental Site Assessment. It shall promptly report its corrective actions to the Department. The Council shall determine whether the corrective actions are sufficient.

(11) The Certificate Holder shall report any release of hazardous substances, pursuant to DEQ regulations, to the Department within one working day after the discovery of such release. This obligation shall be in addition to any other reporting requirements applicable to such a release.

(12) If the Certificate Holder has not remedied a release consistent with applicable Oregon Department of Environmental Quality standards or if the Certificate Holder fails to correct deficiencies identified in the course of a Phase I Environmental Site Assessment within six months after the date of the release or the date of completion of the Phase I Environmental Site Assessment, the Certificate Holder shall submit within such six-month period to the Council for its approval an independently prepared estimate of the additional cost of remediation or correction.

(a) Upon approval of an estimate by the Council, the Certificate Holder shall increase the amount of its bond or letter of credit by the amount of the estimate.

(b) In no event, however, shall the Certificate Holder be relieved of its obligation to exercise all due diligence in remedying a release of hazardous substances or correcting deficiencies identified in the course of a Phase I Environmental Site Assessment.

(13) All funds received by the Certificate Holder from the salvage of equipment and buildings during retirement of the facility shall be committed to the restoration of the energy facility site to the extent necessary to fund the approved site restoration and remediation. [Amendment No. 11]

(14) The Certificate Holder shall pay the actual cost to restore the site to a useful, non-hazardous condition at the time of retirement, notwithstanding the Council's approval in the Site Certificate of an estimated amount required to restore the site.

(15) If the Council finds that the Certificate Holder has permanently ceased construction or operation of the facility without retiring the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110 and prepared pursuant to Condition D.3(2), the Council shall notify the Certificate Holder and request that the Certificate Holder submit a proposed final retirement plan to the Department within a reasonable time not to exceed 90 days.

(a) If the Certificate Holder does not submit a proposed final retirement plan by the specified date or if the Council rejects the retirement plan that the Certificate Holder submits, the Council may direct the Department to prepare a proposed a final retirement plan for the Council's approval.

(b) Upon the Council's approval of the final retirement plan prepared pursuant to subsection (a), the Council may draw on the bond or letter of credit described in Condition D.3(5) and shall use the funds to restore the site to a useful, non-hazardous condition according to the final retirement plan, in addition to any penalties the Council may impose under OAR Chapter 345, Division 29.

(c) If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, the Certificate Holder shall pay any additional cost necessary to restore the site to a useful, non-hazardous condition.

(d) After completion of site restoration, the Council shall issue an order to terminate the Site Certificate if the Council finds that the facility has been retired according to the approved final retirement plan.

(16) In the event that soils are removed from the temporary laydown areas approved through Amendment #10, the site certificate holder shall manage and dispose of the soil in a manner consistent with the *Hazardous Materials Management and Monitoring Plan* for Unit 2, and in accordance with state cleanup and solid waste statutes and rules. [Amendment No. 10]

(17) Before beginning construction of the BESS authorized by the Eleventh Amended Site Certificate the Certificate Holder shall submit a new bond or letter of credit, or increase the existing bond or letter of credit, in the amount of $136,736 for a lithium-ion BESS and $637,635 for a flow BESS, adjusted as described under D.3.5(f) and D.3.5(g). [Amendment No. 11]

D.4. LAND USE

(1) Before beginning construction of the energy facility, the Certificate Holder shall submit a landscaping plan for the energy facility to Columbia County as part of its building permit application for the energy facility. The landscaping plan shall be subject to County approval, provided that the plan is consistent with this Site Certificate and the Final Order. The Certificate Holder shall implement the landscaping plan.

(2) Before beginning construction of the energy facility, the Certificate Holder shall submit a site plan to Columbia County as part of its building permit application. Before beginning construction of the BESS, the Certificate Holder shall submit an updated site plan to Columbia County to reflect the addition of the BESS as a related or supporting facility. [Amendment No. 11]

(3) Before beginning construction of the energy facility, the Certificate Holder shall submit to Columbia County as part of its building permit application for the energy facility a final parking lot plan that complies with Section 1400 of the Columbia County Zoning Ordinance. The parking plan shall be consistent with this Site Certificate and Attachment D of the Final Order. The Certificate Holder shall implement the parking lot plan.

(4) Before beginning construction of the energy facility or the Port Westward to BPA Allston Substation Transmission Line, as appropriate, the Certificate Holder shall apply for and obtain all appropriate land use permits from Columbia County and the City of

Rainier.

(5) Before beginning construction of the energy facility, the Certificate Holder shall enter into a written contract with Columbia County that recognizes the rights of land owners who are adjacent to and nearby the corridor for the transmission line from the BPA Allston Substation to the Trojan Nuclear Plant where it crosses PF-76 and FA-19 zones to conduct forest operations consistent with the Forest Practices Act and Rules for uses authorized in OAR 660-006-0025, subsections (4)(e), (m), (s), (t), and (w).

D.5. STRUCTURAL STANDARD

(1) The Certificate Holder shall design, engineer and construct the facility to avoid dangers to human safety presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. In no event shall the recommended seismic design parameters be any less than those prescribed by the Oregon Uniform Building Code. As used in this condition, "seismic hazard" includes ground shaking, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement, and subsidence.

(2) If the Certificate Holder does not have subsurface information for design of the transmission lines that is acceptable to the Department and the Oregon Department of Geology and Mineral Industries ("DOGAMI"), then the Certificate Holder shall drill exploratory borings at critical locations during final design of the proposed transmission lines.

(3) Before beginning construction of the facility, the Certificate Holder shall provide the Department and DOGAMI with a report containing results of geotechnical investigations and recommendations for the design of the energy facility, transmission lines and other related or supporting facilities.

(a) The Certificate Holder shall prepare the report consistent with the study designs detailed in the Section D.5 of the Final Order and Section H.3 -the Application for a Site Certificate ("ASC").

(b) If DOGAMI is not able to review the reports, the Department shall arrange, in consultation with DOGAMI, for an independent review of the report by a qualified registered geologist.

(c) If the Certificate Holder begins construction of the Port Westward to BPA Allston Substation Transmission Line before beginning construction of other parts of the facility, Condition D.5(3) shall apply only to the Port Westward to BPA Allston Substation Transmission Line as long as it is the only part of the facility under construction.

(4) In addition to, or concurrent with Condition D.5(3), before beginning construction within the City of Rainier's Watershed zone, the Certificate Holder shall submit to the City of Rainier, the Department and DOGAMI a geotechnical report prepared by a registered engineer establishing that it can safely accomplish any construction in a known slide hazard area, flood hazard area, or drainage way, or on slopes exceeding 20 percent in that zone.

(5) If the geotechnical investigation reveals evidence that is not described in the ASC, the Certificate Holder shall revise the facility design parameters to comply with appropriate Uniform Building Code requirements.

(6) The Certificate Holder shall notify the Department, the State Building Codes Division and DOGAMI promptly if site investigations or trenching reveals that subsurface conditions differ significantly from those described in the ASC. After the Department receives the notice, the Council may require the Certificate Holder to consult with DOGAMI and the Building Codes Division and to propose mitigation actions.

(7) The Certificate Holder shall notify the Department, the Building Codes Division and DOGAMI promptly if shear zones, artesian aquifers, deformations, or clastic dikes are found at or in the vicinity of the facility site.

(8) The Certificate Holder shall design, engineer and construct the facility to avoid dangers to human safety presented by non-seismic or aseismic hazards affecting the site. As used in this condition, “non-seismic or aseismic hazards” includes settlement, landslides, groundwater, flooding, and erosion.

(9) The secondary gas supply pipeline constructed and operated by NWN shall be designed to accommodate the potential for different settlement and seismic induced differential deformation, particularly where the pipeline connects to the existing supply line.

(10) If additional geotechnical investigations are performed for the design of the BESS, the Certificate Holder shall provide the Department and DOGAMI with a report containing the results of the investigation. The report shall conform to Oregon State Board of Geologist Examiners Guideline for Preparing Engineering Geologic Reports. [Amendment No. 11]

D.6. SOIL PROTECTION

(1) Upon completion of construction in an area, the Certificate Holder shall use native seed mixes to restore vegetation to the extent practicable and shall landscape portions of the site disturbed by construction in a manner compatible with the surroundings and proposed use. Conditions D.6(1) through D.6(6) shall apply to all soil disturbing

activities, including maintenance, repair, reconstruction, and retirement of facilities. [Amendment No. 1]

(2) The Certificate Holder shall employ the following measures to control soil erosion and sediment runoff by water and wind erosion:

(a) Avoid excavation and other soil disturbances beyond that necessary for construction of the facility or confine equipment use to specific areas.

(b) Remove vegetation only as necessary.

(c) Apply water or mulch, as necessary, for wind erosion control during construction.

(d) Revegetate those construction areas that will no longer be used.

(e) Use temporary erosion and sediment control measures, such as sediment fences, straw wattles, bio-filter bags, mulch, permanent and temporary seeding, sediment traps and/or basins, rock check dams or gravel filter berms, and gravel construction entrances, and maintain these features throughout construction and restoration to reduce the potential for soil erosion and sediment runoff.

(f) Protect soil stockpiles with mulch and plastic sheeting.

(3) If excessively wet conditions occur during construction, the Certificate Holder shall limit construction activities during such periods to the degree practicable in areas susceptible to soil compaction.

(4) After completing construction in an area, the Certificate Holder shall monitor the construction area for a period of 12 months to evaluate whether construction-related impacts to soils are being adequately addressed by the mitigation procedures described in the Sediment Erosion and Control Plan. It shall submit its quality assurance measures to the Department for approval before beginning monitoring.

(5) After completing construction in an area, the Certificate Holder shall use the results of the monitoring program in Condition D.6(4) to identify remaining soil impacts associated with construction that require mitigation. As necessary, the Certificate Holder shall implement follow-up restoration measures to address those remaining impacts and shall report in a timely manner to the Department what measures it has taken.

(6) The Certificate Holder shall remove trapped sediment when the capacity of the sediment trap has been reduced by 50 percent and shall place such sediment in an upland area certified by a qualified wetland specialist.

(7) The Certificate Holder shall contain all fuel and chemical storage in paved spill containment areas with a curb or appropriately sized and compatible secondary containment. [Amendment No. 11]

(8) The Certificate Holder shall design all inside spill containment areas to hold at least 110 percent of the volume of liquids stored within them.

(9) The Certificate Holder shall design all spill containment areas located outdoors to hold at least 110 percent of the volume of liquids stored within them, together with the volume of precipitation that might accumulate during the 100-year return frequency storm.

(10) During operation, the Certificate Holder shall minimize drift from the cooling towers through the use of high efficiency drift eliminators that allow no more than 0.002 percent drift.

D.7. PROTECTED AREAS

[No Conditions]

D.8. FISH AND WILDLIFE HABITAT

(1) The Certificate Holder shall, to the extent practicable, avoid and, where avoidance is not possible, minimize construction and operation disturbance to areas of native vegetation and areas that provide important wildlife habitat. With respect to construction of the facility, the Certificate Holder shall mitigate possible impacts to wildlife by measures including, but not limited to, the following:

(a) Posting speed limit signs throughout the energy facility construction zone.

(b) Instructing construction personnel, including construction contractors and their personnel, on sensitive wildlife of the area and on required precautions to avoid injuring or destroying wildlife.

(c) Instructing construction personnel, including construction contractors and their personnel, to watch out for wildlife while driving through the facility site, to maintain reasonable driving speeds so as not to harass or strike wildlife accidentally, and to be cautious and drive at slower speeds in a period from one hour before sunset to one hour after sunrise when some wildlife species are the most active.
(d) Requiring construction personnel, including construction contractors and their personnel, to report any injured or dead wildlife detected at the facility site.

(2) The Certificate Holder shall construct, operate and retire the facility to minimize impacts to vegetation and habitat.

(a) The energy facility shall be located within previously disturbed Habitat Category 6, non-native grassland Habitat Category 4, and palustrine emergent and forested/scrub-shrub wetlands Habitat Category 3.

(b) The Certificate Holder shall limit Habitat Category 3 impacts to 0.43 acres of permanent impact within palustrine emergent and forested/scrub-shrub wetlands.

(3) The Certificate Holder shall site transmission towers outside wetlands and waterways to the greatest extent practicable. If the Certificate Holder must site transmission towers in riparian zones or wetlands, the Certificate Holder shall use a monopole design for the transmission towers to minimize ground impacts and vegetation control, except where it would have to cross the existing BPA lines.

(4) The Certificate Holder shall prohibit construction and maintenance equipment from entering perennial and intermittent streams, except as follows:

(a) Construction equipment may cross a stream if it is dry;

(b) Construction equipment may cross streams that are not dry by using temporary structures to bridge the stream in a manner that minimizes disturbance to the bed, banks and water of the stream;

(c) Construction equipment may cross a wet stream if the Certificate Holder notifies the Division of State Lands, the Oregon Department of Fish and Wildlife ("ODFW") and the Department of its intent to cross the stream prior to the crossing and these agencies concur that the crossing is acceptable.

(A) The Certificate Holder shall return any stream bed or bank that it disturbs during construction or maintenance to conditions that are comparable to pre-disturbed conditions, including stabilizing the bed and banks and revegetating the riparian area with appropriate plant species.

(B) The Certificate Holder shall construct wet stream crossings within the ODFW-designated in-water work period.

(C) The Certificate Holder shall keep the wet stream crossing width to the minimum needed.

(5) The Certificate Holder shall take advantage of existing roads to the extent practicable.

(6) Before beginning construction of the energy facility or beginning construction of the transmission lines, and in the appropriate season, the Certificate Holder shall conduct wildlife surveys within 0.25 miles of the site to locate great blue heron rookeries. Should

it locate rookeries, the Certificate Holder shall consult with ODFW and the Department to determine the action necessary to avoid adverse impacts. If it cannot avoid impacts, the Certificate Holder shall suspend construction in the affected areas during the critical nesting period of the species, as determined by the Department in consultation with ODFW.

(7) The Certificate Holder will confirm breeding status and nest location of the Crims Island bald eagles each year and consult with the Department and ODFW concerning the need for monitoring and/or modifications to construction activities if:

a) the project scope changes in a manner that may affect the bald eagles; and/or,

b) the location(s) of bald eagle nests on Crims Island changes (e.g. moves closer ~~-~~to the project construction site). [Amendment No. 7]

(8) As possible and practicable, the Certificate Holder shall conduct site preparation for construction of the PW2 facility, or the BESS, ~~-~~ in a manner that minimizes potential for impacting nesting native birds protected by the Migratory Bird Treaty Act (MBTA), such as conducting initial site clearing outside of the breeding season for most birds (generally March-July). Prior to commencement of construction activity during the breeding season, a qualified biologist will conduct a walk-down of the construction site to determine the presence of any active bird nests and to rescue and relocate any nongame protected wildlife (OAR 635-045-0002) that may be encountered according to the methods provided by ODFW. Surveys will be conducted by a qualified wildlife biologist and will include complete coverage of all areas to be disturbed using systematic transects spaced a maximum of 5 meters apart. As applicable considering construction schedule, PGE will also conduct a survey beginning in March prior to construction to detect any streaked horned larks that could be using the very limited amount of potential breeding habitat on site. PGE's survey protocol methods will be coordinated with ODFW. Construction personnel will be trained regarding avian awareness issues and reporting of bird nests and dead birds found at the construction site (also see Condition D.8(1) for wildlife awareness requirements). The Certificate Holder will consult with USFWS and ODFW regarding any active bird nests found within the construction disturbance area. [Amendments No. 7, 9 & ~~9~~11]

(9) The Certificate Holder shall schedule construction at the existing raw water intake pump station to avoid the purple martin nesting season (April 1 through June 30). Before beginning construction at the existing raw water intake pump station, the Certificate Holder shall conduct a survey to determine the exact location of any purple martin nests. Should the Certificate Holder cause unavoidable impacts to occur to any purple martin nest, it shall construct, install and maintain an artificial nest site at a nearby location. It shall pick an appropriate location in consultation with ODFW and the Department.

(10) When working around riparian areas or waterways, the Certificate Holder shall use only herbicide labeled for use in those areas. The Certificate Holder shall abide by all labeling instructions when using herbicides for vegetation maintenance associated with the energy facility and transmission lines rights-of-way.

(11) The Certificate Holder shall locate chemical storage, servicing of construction and maintenance equipment and vehicles, and overnight storage of wheeled vehicles associated with construction and maintenance of the transmission line at least 330 feet from any wetland or waterway. [Amendment No. 11].

(12) The Certificate Holder shall not construct any structure other than fences, signs and the water supply pipeline within 50 feet of any Class I river, stream or the emergent vegetation adjacent to such a river or stream or within 25 feet of any other rivers, streams, and sloughs or the emergent vegetation adjacent to such a river, stream, or slough or within the riparian corridors established under Columbia County Zoning Ordinance Section 1172, as appropriate for the local jurisdiction. [Amendment No. 2]

(13) To mitigate for impacts to 19 acres of non-native grassland, the Certificate Holder shall protect 19 acres of on-site emergent wetland habitat identified in the ASC by execution of a conservation easement for the life of the energy facility. Before beginning construction of Phase 1 of the energy facility, the Certificate Holder shall provide a copy of the conservation easement or similar conveyance to the Department. [Amendment No. 1]

(14) The Certificate Holder shall restore temporary upland and wetland disturbance areas by returning the areas to their original grade and seeding, with appropriate seed mixes as recommended by ODFW and as described in ~~Exhibit P, Section P.8.1, of Certificate Holder's Request for Amendment No. 7,~~[4]the Revegetation and Noxious Weed Control Plan included as Attachment 4b of Amendment Request No. 11~~ and by mulching the areas with straw~~. [Amendment No. 7 & 11]

(15) The Certificate Holder shall not clear any more riparian vegetation than is necessary for the permitted land use, including clearing required for safety purposes, during construction or operation of the facility.

(16) During construction of the transmission line(s) and maintenance of the rights-of-way, the Certificate Holder shall limit clearing of vegetation in riparian areas and

~~[4] PGE submitted revised Exhibit P of its request for amendment 7 in a November 19, 2009 letter from Rick Tetzloff to Adam Bless "Port Westward Generating Project – Revisions to Request to Amend Site Certificate (Amendment 7) to address ODFW comments." Revised section P.8.1 is attached to this Site Certificate as Attachment D.~~

wetlands to that needed to prevent contact with the transmission line and to meet clearance standards for safety and transmission line reliability, as provided in the appropriate sections of the National Electrical Code. [Amendment No. 2]

(17) The Certificate Holder shall mitigate for impacts to riparian shrub and forest habitat that result in canopy cover of less than 25 percent by revegetating these areas with appropriate native woody species according to the Typical Revegetation Plan (ASC, Exhibit Q, page Q-6.1).

(18) The Certificate Holder ~~1~~ shall, as soon as practicable and appropriate after completing construction in an area, implement the mitigation measures specified in Conditions D.8(13), D.8(14) and D.8(17).

(19) [Deleted]~~The Certificate Holder shall monitor revegetated areas for a period of five years and shall ensure that new vegetation has an 80 percent survival rate~~. [Amendment No. 11]

(20) ~~The Certificate Holder shall monitor and control nuisance and invasive plant species annually for a period of five years in areas where vegetation removal and/or revegetation has occurred in (1) riparian areas and wetlands along the transmission line rights-of-way, and (2) in areas temporarily disturbed by construction of the raw water, gas, and process water discharge lines, in all temporary construction staging and laydown areas, and in the spoils disposal site~~[Deleted. [Amendments No. 3, 10 & ~~10~~11]

(21) ~~The Certificate Holder shall submit an annual monitoring report to ODFW and the Department during the five-year monitoring period specified in Condition D.8(20)~~[Deleted].[Amendment No.11]

(22) ~~Within one year after completion of construction of the facility or the Port Westward to BPA Allston Substation Transmission Line, if constructed separately, the Certificate Holder shall provide a summary report to ODFW and the Department that identifies the revegetation actions it took and the results of revegetation monitoring conducted to that time. If the Certificate Holder constructs the energy facility in phases, the Certificate Holder shall provide the summary report to ODFW and the Department within one year after completion of each phase~~[Deleted]. [Amendment No. 1 & 11]

(23) ~~Within three months after completion of the final annual monitoring survey, the Certificate Holder shall provide a report to ODFW and the Department that presents the results of its revegetation monitoring~~[Deleted].[Amendment No. 11]

(24) ~~If revegetation is not successful at establishing appropriate plant cover and controlling erosion, the Certificate Holder shall take remedial actions as the Department directs~~[Deleted].[Amendment No. 11]

(25) To mitigate for impacts to 8.5 acres of non-native grassland, the Certificate Holder shall protect and enhance at least 8.5 acres of on-site emergent wetland habitat identified in Certificate Holder's Request for Amendment No. 7 by execution of a conservation easement for the life of the energy facility. Habitat enhancement measures will include planting of trees and shrubs and controlling invasive plant species as described in revised Exhibit P, Section P.8.1 of Certificate Holder's Request for Amendment No. 7, November 19, 2009 revision (Attachment D of the Site Certificate). Before beginning construction of Unit 2 of the energy facility, the Certificate Holder shall provide a copy of the conservation easement or similar conveyance to the Department. [Amendment No. 7]

(26) [Delete]. [Amendment No. 10 & 11] ~~Within 120 days of completing construction of Unit 2, the Certificate Holder shall initiate restoration of all temporarily disturbed construction laydown areas by implementing the following measures:~~

~~(1) Removal of gravel and fabric~~

~~(2) Ground decompaction~~

~~(3) Revegetation with an ODFW-approved native seed mix.~~

~~The Certificate Holder shall maintain and monitor revegetated areas and report on the status of revegetation efforts until the Department determines that the each revegetated area has demonstrated successful uplift for two consecutive years. The Department shall determine successful uplift in consultation with ODFW, based on the following percent cover targets:~~

~~60% cover by native grasses~~
~~10% cover by native forbs~~
~~10% cover by bare ground~~
~~Not to exceed 20% cover by non-native plants.~~
~~[Amendment No. 10]~~

(27) The Certificate Holder shall not use the South Laydown Area prior to October 1, 2013, unless a qualified biologist has determined that the adjacent osprey nest is inactive, and the Department has concurred with that determination in writing. [Amendment No. 10]

(28) The Certificate Holder shall implement the Revegetation and Noxious Weed Control Plan included as Attachment 4b to RFA No.11. The Revegetation and Noxious Weed Control Plan may be amended from time to time by agreement of the certificate holder and the Council. Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan. The Department shall notify the Council of all amendments, and the Council retains the

authority to approve, reject, or modify any amendment of this plan agreed to by the Department.

D.9. THREATENED AND ENDANGERED SPECIES

(1) Before beginning construction of the transmission line between the BPA Allston Substation and the Trojan Nuclear Plant, the Certificate Holder shall direct qualified personnel to conduct species ground surveys along the transmission line corridor and within 150 feet on either side of the transmission line corridor at the appropriate time of year to determine the presence of listed plant species. If listed plant species are identified in the course of the species ground surveys, their presence shall be noted on maps, and PGE shall provide copies of the maps to the Department and the Department of Agriculture.

(2) During construction of the transmission lines, the Certificate Holder shall manipulate construction equipment and site poles, towers and access roads to avoid impacts, except as provided in Condition D.9(4), to known populations of state- or federally-listed plant species.

(3) The Certificate Holder shall ensure that all maintenance practices along the transmission line corridor minimize impacts to known populations of listed plant species.

(4) In the event the Certificate Holder determines that it cannot avoid known populations of listed plant species, the Certificate Holder shall engage qualified personnel to determine whether the proposed action has the potential to reduce appreciably the likelihood of the survival or recovery of the listed species, notify the Department of its findings, and obtain approval from the Oregon Department of Agriculture before proceeding with construction activities that affect the listed plant species. (OAR 603-073-0090).

(5) Before beginning construction of the transmission line, the Certificate Holder shall employ measures to protect raptors in the design and construction of transmission lines. It shall design all energized transmission conductors with either a minimum separation of nine feet or other measures to reduce the potential for electrocution of raptors or other birds.

(6) The Certificate Holder shall not conduct construction activities at the transmission line terminus at the Trojan Nuclear Plant that generate extreme noise or high levels of visual disturbance during the peregrine falcon critical nesting period from January 1 to June 30. Such activities include pile driving, excavation, and grading for ground stabilization purposes and site preparation. Construction activities involving lower levels of visible activity and less noise are allowed throughout the year. These include such activities as excavating and setting forms, pouring footings, erecting power line towers and bus duct, hanging conductor wires, installing control wires, and testing.

(a) Prior to beginning construction at the terminus site, the Certificate Holder shall provide the Department and ODFW with a final construction schedule that lists various construction activities, and time periods when specific work will be conducted. The schedule shall include information on the types of heavy construction equipment that will be used and the approximate number of workers and shall demonstrate that the construction activities are consistent with the limitations of this condition. The Certificate Holder shall provide scheduling updates as necessary to alert the Department and ODFW ahead of time of any proposed changes in the work schedule should the changes occur during the critical nesting period.

(b) The Certificate Holder shall monitor peregrine falcon activity at the transmission line terminus at the Trojan Nuclear Plant between January 1 to June 30 of construction years. Before beginning construction at the transmission line terminus at the Trojan Nuclear Plant, the Certificate Holder shall coordinate with ODFW and the Department and shall consequently prepare a peregrine falcon contingency plan. This contingency plan shall address actions that the Certificate Holder would undertake in the event that the Department and ODFW determine that monitoring shows the peregrine falcon pair's nesting activities are negatively affected by the transmission line construction activities.

(c) The Certificate Holder shall not proceed with construction activity at the transmission line terminus at the Trojan Nuclear Plant during the peregrine falcon critical nesting period from January 1 to June 30 to the extent that ODFW or the Department determines that the activity is not consistent with the limitations of this condition. [Amendment No. 3]

(7) The Certificate Holder shall plant suitable vegetative species for deer forage and cover within the wetland mitigation/enhancement area.

(8) The Certificate Holder shall coordinate with ODFW about whether to conduct site-specific fish sampling at waterways that do not have confirmation of species presence or absence along the transmission line corridor. If ODFW recommends that the Certificate Holder conduct site-specific sampling, the Certificate Holder shall do so and report the results to ODFW and the Department.

(9) [Deleted]]. [Amendments No. 11]~~The Certificate Holder shall not undertake construction at the energy facility site during the bald eagle nesting season unless it obtains a final Biological Opinion and Incidental Take Statement issued by the U.S. Fish and Wildlife Service that addresses potential impacts to the bald eagle nest site on the northwest tip (downstream end) of Crims Island.~~

~~(a) The Certificate Holder shall construct and operate the energy facility consistent with the final Biological Opinion and Incidental Take Statement issued by the U.S. Fish and Wildlife Service.~~

~~(b) If the requirements of the Biological Opinion and Incidental Take Statement conflict with any conditions imposed in this Site Certificate, the Certificate Holder shall consult with the Department and ODFW to resolve the conflicts prior to taking any action in reliance on the Biological Opinion and Incidental Take Statement. [Amendment No. 3]~~

D.10. SCENIC AND AESTHETIC VALUES

(1) During construction of the facility, the Certificate Holder shall ensure that contractors move equipment out of the construction area when it is no longer expected to be used. To the extent practical, contractors shall lower equipment with long arms, such as cranes, bucket trucks, backhoes, when not in use in order to minimize visibility.

(2) During construction of the facility, the Certificate Holder shall control dust through the application of water.

(3) During construction of the energy facility, the Certificate Holder shall use directing and shielding devices on lights to minimize off-site glare. When there is no nighttime construction activity, the Certificate Holder shall minimize night lighting consistent with safety and security requirements.

(4) During operation of the energy facility, the Certificate Holder shall use directing and shielding devices on lights to minimize off-site glare, consistent with safety and security requirements.

(5) Before beginning construction of the energy facility, the Certificate Holder shall submit to Columbia County and the Department an outdoor lighting plan that shows how it will minimize glare from the energy facility site, consistent with Conditions D.10(3) and D.10(4).

(6) The Certificate Holder shall paint structures with low-glare paint in colors selected to complement the surrounding foreground and background colors.

(7) After completion of construction of related and supporting pipelines in an area, the Certificate Holder shall re-vegetate any undeveloped areas disturbed by construction activities using native species, including grasses, shrubs, and trees. If necessary, the Certificate Holder shall water re-vegetated areas on a regular basis until the plant species have been successfully established.

D.11. HISTORIC, CULTURAL AND ARCHAEOLOGICAL RESOURCES

(1) Before beginning construction of the Port Westward to BPA Allston Substation Transmission Line or the BPA Allston Substation to Trojan Transmission Line, the

Certificate Holder shall complete an archaeological survey of the approved transmission line corridors in consultation with the Oregon Historic Preservation Office ("SHPO"), the Confederated Tribes of the Warm Springs Indian Reservation of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indian Reservation of Oregon, the Chinook Tribe in Washington, and appropriate federal agencies. The Certificate Holder shall ensure that a qualified archaeologist evaluates all cultural resources identified during the cultural resources survey. The Certificate Holder shall report to SHPO and the Department about whether its archaeologist recommends that a discovery is significant or not significant. If SHPO determines that a discovery is significant, the Certificate Holder shall make recommendations to the Council for mitigation in consultation with SHPO, the Department, the tribes, and other appropriate parties. Mitigation measures shall include avoidance or data recovery. [Amendment No. 1]

(2) During construction of the facility, the Certificate Holder shall ensure that a qualified person instructs construction personnel in the identification of cultural materials.

(3) During construction of the facility, in the event any artifacts or other cultural materials are identified, the Certificate Holder shall cease all ground-disturbing activities until a qualified archaeologist can evaluate the significance of the find. The Certificate Holder shall report to SHPO and the Department about whether its archaeologist recommends the artifacts or cultural materials are significant or not significant. If SHPO determines that the materials are significant, the Certificate Holder shall make recommendations to the Council for mitigation in consultation with SHPO, the Department, the tribes, and other appropriate parties. Mitigation measures shall include avoidance or data recovery. The Certificate Holder shall not restart work in the affected area until it has demonstrated to the Department that it has complied with the archaeological permit requirements administered by SHPO. [Amendment No. 1]

(4) The Certificate Holder shall allow monitoring by the Confederated Tribes of the Warm Springs Indian Reservation of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indian Reservation of Oregon, and the Chinook Tribe in Washington of earth-moving activities within any areas with a potential for containing archaeological remains.

(5) Before beginning construction of the facility or of the Port Westward to BPA Allston Substation Transmission Line separately, the Certificate Holder shall notify the Confederated Tribes of the Warm Springs Indian Reservation of Oregon, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indian Reservation of Oregon, and the Chinook Tribe in Washington and provide their representatives the opportunity to be available for periodic on-site monitoring during construction activities. If the Certificate Holder constructs the energy facility in phases, the Certificate Holder shall notify the Tribes prior to construction of each phase. [Amendment No. 1]

(6) If construction activities for the secondary gas pipeline occur at a level below the sandy dredge fill (a depth of 10 feet), then the Site Certificate holder or NW Natural shall immediately contact the State Historic Preservation Officer. [Amendment 5]

D.12. RECREATION

[No Conditions]

D.13. PUBLIC SERVICES

(1) During construction, the Certificate Holder shall hire a contractor to provide chemical toilet services or other appropriate facilities for construction personnel.

(2) Prior to applying for construction permits for the second power generation unit, the Certificate Holder shall enter into an Amended Traffic Improvement Agreement and pay a new Traffic Improvement Contribution to Columbia County according to the Amended Traffic Improvement Agreement and consistent with a Traffic Impact Analysis Study for the second power generation unit performed according to parameters agreed to by Columbia County and the Certificate Holder. [Amendment No. 8]

(3) The Certificate Holder shall not agree to amend the Agreement with Columbia County to reduce, revoke or waive the requirement for payment of the appropriate TIC without prior approval of the Council; however, such approval by the Council shall not require an amendment to the Site Certificate.

(4) Before beginning construction of the energy facility, the Certificate Holder shall coordinate with Columbia County the improvement and maintenance of signage and striping at the mainline rail crossing on Kallunki Road, including the installation of "DO NOT STOP ON TRACKS" signs.

(5) If construction of the energy facility occurs concurrently with construction of other projects in the Port Westward Industrial Area, the Certificate Holder shall coordinate with other users of the Port Westward Industrial Area to provide a carpooling program that identifies and/or creates park-and-ride locations to facilitate carpooling.

(6) If construction of the energy facility occurs concurrently with construction of other projects in the Port Westward Industrial Area, the Certificate Holder shall coordinate with Columbia County and other users of the Port Westward Industrial Area on the implementation of a staggered shift schedule if Columbia County determines that traffic conditions warrant it.

(7) During construction of the energy facility, the Certificate Holder shall use barge and railroad deliveries of bulk materials to the extent practicable to minimize the number of freight truck deliveries on local roads.

(8) The Certificate Holder shall construct a fire protection system within the buildings and yard areas of the energy facility site that meets the requirements of the Uniform Fire Code, as amended by Oregon and the National Fire Protection Association standards, and all other applicable fire protection standards in effect at the time of construction.

(9) The Certificate Holder shall provide a dedicated reserve capacity of 180,000 gallons in the raw water storage tank to serve as the fire suppression water source.

(10) For fire truck access, the minimum inside turning radius of curves in the road system on the energy facility site shall be 40 feet.

(11) Prior to start of construction of Unit 2 of the energy facility, the certificate holder shall obtain from the Water Resources Department (WRD) a permanent water right transfer subject to the following conditions:

a. the right to the use of the water is restricted to beneficial use at the place of use described in transfer application T-10955, and is subject to all other conditions and limitations contained in Certificate 81969 and any related decree.

b. The quantity of water diverted at the new point of diversion, shall not exceed the quantity of water (3.0 cfs) lawfully available at the original point of diversion.

c. WRD may require the water user to install a headgate, a totalizing flow meter, or other suitable measuring devices at the point of diversion. If WRD notifies the water user to install a headgate, a totalizing flow meter, or other measuring devices, the water user shall install such devices specified by WRD within the period allowed in the notice. Once installed, the water user shall maintain the meters or measuring devices in good working order and shall allow the Watermaster access to the meters or measuring devices.

d. The water user shall maintain and operate a fish screening and/or by-pass device, as appropriate, at the point of diversion consistent with the Oregon Department of Fish and Wildlife's operational and maintenance standards.

e. The approved changes shall be completed and full beneficial use of the water shall be made on or before October 1, 2015. A Claim of Beneficial Use prepared by a Certified Water Rights Examiner shall be submitted by the Certificate Holder to the Department within one year after the deadline for completion of the changes and full beneficial use of the water.

f. Prior to issuance of the permanent transfer, the certificate holder shall provide to ODOE and WRD a report of land ownership for the lands to which the water right is appurtenant (the FROM lands). The report must be prepared by a title company. The title company's report must either be: 1) prepared within three months of the Energy Facility Siting Council's Final Order on PWGP Amendment 7, or 2) reflect ownership information within three months of the recording of any water right conveyance agreements for the property in the county deed records. The ownership report shall include:

(A) Date reflected by the ownership information

(B) List of owners at that time

(C) Legal description of the property to which the water right involved in the transfer is currently appurtenant, and

(D) A notarized statement of consent from any landowner listed in the ownership report who is not already included in the transfer application, or other information such as a water right conveyance agreement, if applicable. [Amendments No. 7 & 9]

D.14. WASTE MINIMIZATION, OAR 345-022-0120

(1) During construction, operation and retirement of the energy facility, the Certificate Holder shall separate recyclable materials from the solid waste stream to the extent practicable, store those materials on site until sufficient quantities exist to make recycling economic, and periodically deliver or sell those materials to a recycling facility.

(2) During construction, operation and retirement of the energy facility, the Certificate Holder shall segregate all used oil, mercury-containing lights~~,~~; and lead-acid, lithium-ion, and nickel-cadmium batteries, store such materials on site, and deliver such materials to a recycling firm specializing in the proper disposal of such materials.

(3) Upon completion of construction, the Certificate Holder shall dispose of all temporary structures not required for facility operation and all timber, brush, refuse, and flammable or combustible material resulting from clearing of land and construction of the facility.

(4) During operation of the energy facility, the Certificate Holder shall convey all storm water and water discharges other than sanitary sewage to pervious areas to allow for percolation into the shallow groundwater.

(5) During operation of the energy facility, the Certificate Holder shall use internal recycling of aqueous streams whereby water shall be recycled several times in the cooling system before being discharged.

D.15. CARBON DIOXIDE STANDARD

(1) Before beginning construction of Phase 1 and Phase 2 of the energy facility, respectively, the Certificate Holder shall submit to The Climate Trust a bond or letter of credit in the amount of the monetary path payment requirement (in 2002 dollars for Phase 1 and in 1st quarter 2010 dollars for Phase 2) as determined by the calculations set forth in Condition D.15(3) and based on the estimated heat rates and capacities certified pursuant to Condition D.15(4) and as adjusted in accordance with the terms of this Site Certificate pursuant to Condition D.15(3)(c). For the purposes of this Site Certificate, the "monetary path payment requirement" means the offset funds determined pursuant to OAR 345-024-0550 and -0560 and the selection and contracting funds that the Certificate Holder must disburse to The Climate Trust, as the qualified organization, pursuant to OAR 345-024-0710 and this Site Certificate. The offset fund rate for the monetary path payment requirement shall be $0.85 per ton of carbon dioxide (in 2002 dollars) for Phase 1 and $1.27 per ton of carbon dioxide (in 1st quarter 2010 dollars) for Phase 2. The calculation of 2002 and 1st quarter 2010 dollars shall be made using the Index set forth in Condition D.3(5) and as required below in subsection (g). [Amendments No. 1, 6 & 7]

(a) The form of the bond or letter of credit and identity of the issuer shall be subject to approval by the Council.

(b) The form of the Memorandum of Understanding "MOU") between the Certificate Holder and the Climate Trust establishing the disbursement mechanism to transfer selection and contracting funds and offset funds to The Climate Trust shall be substantially in the form of Attachment A to this Site Certificate.

(c) Either the Certificate Holder or The Climate Trust may submit to the Council for the Council's resolution any dispute between the Certificate Holder and The Climate Trust that concerns the terms of the bond, letter of credit, or MOU concerning the disbursement mechanism for the monetary path payments, or any other issues related to the monetary path payment requirement. The Council's decision shall be binding on all parties.

(d) The bond or letter of credit shall remain in effect until such time as the Certificate Holder has disbursed the full amount of the monetary path payment requirement to The Climate Trust. The Certificate Holder may reduce the amount of the bond or letter of credit commensurate with payments it makes to The Climate Trust. The bond or letter of credit shall not be subject to revocation before disbursement of the full monetary path payment requirement.

(e) In the event that the Council approves a new Certificate Holder for the energy facility:

(A) The new Certificate Holder shall submit to the Council for the Council's approval the form of a bond or letter of credit that provides comparable security to the bond or letter of credit of the current Certificate Holder. The Council's approval of a new bond or letter of credit shall not require a site certificate amendment.

(B) The new Certificate Holder shall submit to the Council for the Council's approval the form of an MOU between the new Certificate Holder and The Climate Trust that is substantially in the form of Attachment A to this Site Certificate. In the case of a dispute between the new Certificate Holder and The Climate Trust concerning the disbursement mechanism for monetary path payments or any other issues related to the monetary path payment requirement, either party may submit the dispute to the Council for the Council's resolution as provided in Condition D.15(1)(c). Council approval of a new MOU shall not require a site certificate amendment.

(f) If calculations pursuant to Condition D.15(5) demonstrate that the Certificate Holder must increase its monetary path payments, the Certificate Holder shall increase the bond or letter of credit sufficiently to meet the adjusted monetary path payment requirement within the time required by Condition D.15(3)(c). Alternately, the Certificate Holder may disburse any additional required funds directly to The Climate Trust within the time required by Condition D.15(3)(c).

(g) The amount of the bond or letter of credit shall increase annually by the percentage increase in the Index, and the disbursement of funds shall be pro-rated within the year to the date of disbursement to The Climate Trust from the calendar quarter of Council approval of the Site Certificate.

(2) The Certificate Holder shall disburse to The Climate Trust offset funds and selection and contracting funds as requested by The Climate Trust. The Certificate Holder shall make disbursements in response to requests from The Climate Trust in accordance with subsections (a), (b), and (c).

(a) The Certificate Holder shall disburse all selection and contracting funds to The Climate Trust before beginning construction.

(b) Upon notice pursuant to subsection (c), The Climate Trust may request from the issuer of the bond or letter of credit the full amount of all offset funds available or it may request partial payment of offset funds at its sole discretion. Notwithstanding the specific amount of any contract to implement an offset project, The Climate Trust may request up to the full amount of offset funds the Certificate Holder is required to provide to meet the monetary path payment requirement.

(c) The Climate Trust may request disbursement of offset funds by providing notice to the issuer of the bond or letter of credit that The Climate Trust has executed a letter of intent to acquire an offset project. The Certificate Holder shall provide that the issuer of the bond or letter of credit disburse offset funds to The Climate Trust within three business days of a request by The Climate Trust for the offset funds in accordance with the terms of the bond or letter of credit.

(3) The Certificate Holder shall submit all monetary path payment requirement calculations to the Department for verification in a timely manner before submitting a bond or letter of credit for Council approval and before entering into an MOU with The Climate Trust. The Certificate Holder shall use the contracted design parameters for capacities and heat rates that it reports pursuant to Condition D.15(4) to calculate the estimated monetary path payment requirement, along with the estimated annual hours of operation of power augmentation technologies and of non-base load power plants for Unit 2. The Certificate Holder shall use the Year One Capacities and Year One Heat Rates that it reports for the facility pursuant to Condition D.15(5) to calculate whether it owes additional monetary path payments**.** [Amendment No. 7]

(a) The net carbon dioxide emissions rate for the base load gas plant shall not exceed 0.675 pounds of carbon dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions and net electric power output measured on a new and clean basis, as defined in OAR 345-001-0010.

(b) The net carbon dioxide emissions rate for Unit 2, and for incremental emissions of Unit 1 operating with power augmentation technologies that increase the capacity and heat rate of the facility above the capacity and heat rate that it can achieve as a base load gas plant on a new and clean basis ("power augmentation technologies") shall not exceed 0.675 pounds of carbon dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions and net electric power output measured on a new and clean basis, as the Department may modify such basis pursuant to Condition D.15(4)(d) and (g). [Amendment No. 7]

(c) When the Certificate Holder submits the Year One Test reports required in Condition D.15(5), it shall increase its monetary path payments if the calculation using reported data shows that the adjusted monetary path payment requirement exceeds the monetary path payment requirement for which the Certificate Holder had provided a bond or letter of credit before beginning construction, pursuant to Condition D.15(1). The Certificate Holder shall submit its calculations to the Department for verification.

(A) The Certificate Holder shall make the appropriate calculations and fully disburse any increased funds directly to The Climate Trust within 30 days of filing the Year One Test reports.

(B) In no case shall the Certificate Holder diminish the bond or letter of credit it provided before beginning construction or receive a refund from The Climate Trust based on the calculations made using the Year One Capacities and the Year One Heat Rates.

(4) The Certificate Holder shall include an affidavit certifying the heat rates and capacities reported in subsections (a**)**, (b), (e) and (f).

(a) Before beginning construction of the energy facility, the Certificate Holder shall notify the Council in writing of its final selection of a gas turbine vendor and heat recovery steam generator vendor and shall submit written design information to the Council sufficient to verify the base-load gas plant's designed new and clean heat rate (higher heating value) and its net power output at the average annual site condition.

(b) Before beginning construction of the energy facility, the Certificate Holder shall submit written design information to the Council sufficient to verify the facility's designed new and clean heat rate and its net power output at the average annual site condition when operating with power augmentation technologies.

(c) Before beginning construction of the energy facility, the Certificate Holder shall specify the estimated annual average hours that it expects to operate the power augmentation technologies.

(d) Upon a timely request by the Certificate Holder, the Department may approve modified parameters for testing the power augmentation technologies on a new and clean basis, pursuant to OAR 345-024-0590(1). The Department's approval of modified testing parameters for power augmentation technologies shall not require a site certificate amendment.

(e) Before beginning construction of Unit 2, the Certificate Holder shall notify the Council in writing of its final selection of the quantities and vendors for reciprocating engines and combustion turbine generators and shall submit written design information to the Council sufficient to verify the non-base load power plant's designed new and clean heat rate (higher heating value) and its net power output at the average annual site condition. [Amendment No. 7]

(f) Before beginning construction of Unit 2, the Certificate Holder shall specify the estimated annual average hours that it expects to operate each type of generating unit. The Certificate Holder may estimate annual average hours of operation in a manner consistent with OAR 345-001-0010(38). [Amendment No. 7]

(g) Upon a timely request by the Certificate Holder, the Department may approve modified parameters for testing the non-base load power plants of Unit 2 on a new and clean basis, pursuant to OAR 345-024-0590(1). The Department's approval of modified

testing parameters for non-base load power plants shall not require a site certificate amendment. [Amendment No. 7]

(5) Within the first 12 months of commercial operation of each phase of the energy facility, the Certificate Holder shall conduct a 100-hour test at full power without power augmentation technologies ("Year One Test-1") and a test at full power with power augmentation technologies for Unit 1 ("Year One Test-2"). A 100-hour test performed for purposes of the Certificate Holder's commercial acceptance of the facility shall suffice to satisfy this condition in lieu of testing after beginning commercial operation. [Amendments No. 6 & 7]

(a) Year One Test-1 shall determine the actual heat rate ("Year One Heat Rate-1") and the net electric power output ("Year One Capacity-1") on a new and clean basis, without degradation, with the results adjusted for the average annual site condition for temperature, barometric pressure, and relative humidity, and using a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel pursuant to OAR 345-001-0010(35).

(b) Year One Test-2 shall determine the actual heat rate ("Year One Heat Rate-2") and net electric power output ("Year One Capacity-2") for the facility operating with power augmentation technologies, without degradation, with the results adjusted for the average annual site condition for temperature, barometric pressure and relative humidity, and using a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel pursuant to OAR 345-001-0010(35). The full power test shall be 100 hours duration unless the Department has approved a different duration pursuant to Condition (4)(d**)** or (4)(g). [Amendment No. 7]

(c) The Certificate Holder shall notify the Department at least 60 days before conducting the tests required in subsections (a) and (b) unless a shorter time is mutually agreed upon.

(d) Before conducting the tests required in subsections (a) and (b), the Certificate Holder shall, in a timely manner, provide to the Department a copy of the protocol for conducting the tests.

(e) Within two months after completing the Year One Tests, the Certificate Holder shall provide to the Council a report of the results of the Year One Tests.

(f) If the certificate holder elects to report all carbon dioxide emissions based on direct measurements pursuant to OAR 345-024-0590(5)(b), then the Year One Test for Unit 2 is not required. However, if the Year One test is not performed, then the certificate holder must continue to report carbon dioxide emissions using actual measured emissions as reported to the Department of Environmental Quality or the U.S. Environmental Protection Agency for all subsequent five year periods over the life of

Unit 2, and may not change its election to report based on new and clean heat rate in any subsequent five year period. [Amendment No. 7]

(g) If the Year One test is not performed for Unit 2 pursuant to subsection (f) of this condition, then the certificate holder shall report its net kWh generation and actual measured carbon dioxide emissions for the 12 month period following start of commercial operation of Unit 2. The certificate holder shall report the net kWh generation and actual carbon dioxide emissions for this period to the Department within two months of the end of the first 12 month period. The certificate holder shall use the net kWh generation and measured carbon dioxide emissions to perform the calculations to determine if supplemental monetary path payments are needed as set forth in Condition D.15(6). The certificate holder shall submit these calculations to the Department for verification as set forth in Condition D.15(7). [Amendment No. 7]

(6) If calculations pursuant to Condition D.15(7) demonstrate that the Certificate Holder must supplement its monetary path payments ("supplemental monetary path payment requirement"), the Certificate Holder shall provide a bond or letter of credit sufficient to meet the supplemental monetary path payment requirement within the time required by Condition D.15(7)(b). The bond or letter of credit shall not be subject to revocation before disbursement of the supplemental monetary path payment requirement. Alternately, the Certificate Holder may disburse in cash any such supplemental monetary path payments directly to The Climate Trust within the time required by Condition D.15(7). [Amendment No. 7]

(7) The Certificate Holder shall submit all supplemental monetary path payment requirement calculations and data to the Department for verification. [Amendment No. 7]

(a) Each five years after beginning commercial operation of Unit 1 ("Unit 1 five-year reporting period"), the Certificate Holder shall report to the Department the annual average hours Unit 1 operated with power augmentation technologies during that Unit 1 five-year reporting period, pursuant to OAR 345-024-0590(6). The Certificate Holder shall use the Year One Capacity-2 and Year One Heat Rate-2 that it reports for Unit 1 pursuant to Condition D.15(5)(b) to calculate whether it owes supplemental monetary path payments. The Certificate Holder shall submit Unit 1 five-year reports to the Department within 30 days of the anniversary date of beginning commercial operation of Unit 1. [Amendment No. 7]

(b) If the Department determines that Unit 1 exceeds the projected net total carbon dioxide emissions calculated pursuant to Conditions D.15(4) and D.15(5), prorated for five years, during any Unit 1 five-year reporting period described in subsection (a), the Certificate Holder shall offset excess emissions for the specific reporting period according to subsection (A) and shall offset the estimated future excess emissions according to subsection (B), pursuant to OAR 345-024-0600(4). The Certificate Holder

shall offset excess emissions using the monetary path as described in OAR 345-024-0710, except that contracting and selecting funds shall equal twenty (20) percent of the value of any offset funds up to the first $250,000 (in 2002 dollars) and 4.286 percent of the value of any offset funds in excess of $250,000 (in 2002 dollars). The Certificate Holder shall disburse the funds to The Climate Trust within 30 days after notification by the Department of the amount that the Certificate Holder owes. [Amendment No. 7]

(A) In determining the excess carbon dioxide emissions that the Certificate Holder must offset for a Unit 1 five-year period, the Department shall apply OAR 345-024-0600(4)(a). The Certificate Holder shall pay for the excess emissions at $0.85 per ton of carbon dioxide emissions (in 2002 dollars). The Department shall notify the Certificate Holder and The Climate Trust of the amount of payment required, using the monetary path, to offset excess emissions. [Amendments No. 6 & 7]

(B) The Department shall calculate estimated future excess emissions and notify the Certificate Holder of the amount of payment required, using the monetary path, to offset them. To estimate excess emissions for the remaining period of the deemed 30-year life of the facility, the Department shall use the parameters specified in OAR 345-024-0600(4)(b). The Certificate Holder shall pay for the estimated excess emissions at $ 0.85 per ton of carbon dioxide (in 2002 dollars). The Department shall notify the Certificate Holder of the amount of payment required, using the monetary path, to offset future excess emissions. [Amendments No. 6 & 7]

(c) At the time the Certificate Holder submits to the Department the information required by Condition D.15(4)(e) and (f), the Certificate Holder shall make the election required by OAR 345-024-0590(5)(b). The election shall apply for each reporting period required pursuant to subsections (d) and (e). [Amendment No. 7]

(d) Each five years after beginning commercial operation of Unit 2 ("Unit 2 five-year reporting period"), the Certificate Holder shall report to the Department the information required by either subsection A or B. The Certificate Holder shall submit Unit 2 five-year reports to the Department within 30 days of the anniversary date of beginning commercial operation of Unit 2. [Amendment No. 7]

(A) If the Certificate Holder has elected to calculate any excess emissions using annual average hours of operation and new and clean heat rates, the Certificate Holder shall report the annual average hours of operation of each generating unit within Unit 2 during that Unit 2 five-year reporting period, pursuant to OAR 345-024-0590(6). The Certificate Holder shall use the Year One Capacity-1 and Year One Heat Rate-1 that it reports for the corresponding generating units of Unit 2 pursuant to Condition D.15(5)(a) to calculate whether it owes supplemental monetary path payments. [Amendment No. 7]

(B) If the Certificate Holder has elected to calculate any excess emissions using actual or measured carbon dioxide emissions as reported to either the Oregon Department of Environmental Quality or the U.S. Environmental Protection Agency pursuant to a mandatory carbon dioxide reporting requirement, the Certificate Holder shall submit to the Department the carbon dioxide reporting data and net kWh generation for that Unit 2 five-year reporting period and shall use that data to determine whether it owes supplemental monetary path payments. [Amendment No. 7]

(e) If the Department determines that Unit 2 exceeds the projected net total carbon dioxide emissions calculated pursuant to Conditions D.15(4) and D.15(5), prorated for five years, during any Unit 2 five-year reporting period described in subsection (d), the Certificate Holder shall offset excess emissions for the specific reporting period according to subsection (A) and shall offset the estimated future excess emissions according to subsection (B), pursuant to OAR 345-024-0600(4). The Certificate Holder shall offset excess emissions using the monetary path as described in OAR 345-024-0710, except that contracting and selecting funds shall equal twenty (20) percent of the value of any offset funds up to the first $250,000 (in 1st quarter 2010 -dollars) and 4.286 percent of the value of any offset funds in excess of $250,000 (in 1st quarter 2010 dollars). The Certificate Holder shall disburse the funds to The Climate Trust within 30 days after notification by the Department of the amount that the Certificate Holder owes. [Amendment No. 7]

(A) In determining the excess carbon dioxide emissions that the Certificate Holder must offset for a Unit 2 five-year period, the Department shall apply OAR 345-024-0600(4)(a), unless the Certificate Holder has elected under OAR 245-024-0590(5) to utilize actual or measured carbon dioxide emissions as reported to either the Oregon Department of Environmental Quality or the U.S. Environmental Protection Agency pursuant to a mandatory carbon dioxide reporting requirement. The Certificate Holder shall pay for the excess emissions at $1.27 per ton of carbon dioxide emissions (in 1st Quarter 2010 dollars). The Department shall notify the Certificate Holder and The Climate Trust of the amount of payment required, using the monetary path, to offset excess emissions. [Amendment No. 7]

(B) The Department shall calculate estimated future excess emissions and notify the Certificate Holder of the amount of payment required, using the monetary path, to offset them. To estimate excess emissions for the remaining period of the deemed 30-year life of the facility, the Department shall use the parameters specified in OAR 345-024-0600(4)(b). The Certificate Holder shall pay for the estimated excess emissions at $1.27 per ton of carbon dioxide (in 1st quarter 2010 dollars). The Department shall notify the Certificate Holder of the amount of payment required, using the monetary path, to offset future excess emissions. [Amendment No. 7]

(8) The combustion turbine for the base-load gas plant and power augmentation technologies and any combustion turbines constructed as part of Unit 2 shall be fueled solely with pipeline quality natural gas or with synthetic gas with a carbon content per million Btu no greater than pipeline-quality natural gas. Any reciprocating engines constructed as part of Unit 2 shall be fueled solely with pipeline quality natural gas or with synthetic gas with a carbon content per million Btu no greater than pipeline-quality natural gas, except that distillate fuel may be used for micro-pilot systems. [Amendment No. 7]

(9) With respect to incremental capacity and fuel consumption increases for which the Certificate Holder has not previously complied with the carbon dioxide standard, the Certificate Holder shall comply substantially with Conditions D.15(1) through D.15(8) in lieu of the Council's requiring an amendment, provided that:

(a) The Council determines, pursuant OAR 345-027-0050, that the Certificate Holder does not otherwise require an amendment, and further provided that:

(b) The Certificate Holder shall meet the appropriate carbon dioxide emissions standard and monetary offset rate in effect at the time the Council makes its determination pursuant to OAR 345-027-0050.

(10) Notwithstanding Conditions D.15(1) through d.15(9), if the Certificate Holder begins construction of the Port Westward to BPA Allston Substation Transmission Line, but no other part of the energy facility or other related or supporting facilities, the Certificate Holder shall not be required to comply with Conditions D.15(1) through D.15(9). The Certificate Holder shall comply with Conditions D.15(1) through D.15(9) in connection with construction of any part of the energy facility or related or supporting facilities other than the Port Westward to BPA Allston Substation Transmission Line.

(11) If the Certificate Holder begins construction of Phase 1, but not Phase 2, the Certificate Holder shall comply with Conditions D.15(1) through D.15(9) for Phase 1. If the Certificate Holder later begins construction of Phase 2, the Certificate Holder shall comply with Conditions D.15(1) through D.15(9)for Phase 2. [Amendment No. 1]

E. OTHER APPLICABLE REGULATORY REQUIREMENTS

E.1. REQUIREMENTS UNDER COUNCIL JURISDICTION

E.1.a. Noise

(1) During construction of the facility, the Certificate Holder shall schedule most heavy construction to occur during daylight hours. Construction work at night shall be limited to work inside buildings and other structures when possible.

(2) During construction of the facility, the Certificate Holder shall require contractors to equip all combustion engine-powered equipment with exhaust mufflers.

(3) During construction of the energy facility, transmission lines or other related or supporting facilities, the Certificate Holder shall establish a complaint response system at the construction manager's office to address noise complaints.

(4) Within six months after the start of commercial operation of the energy facility, the Certificate Holder shall retain a qualified noise specialist to measure noise levels associated with the energy facility operation when environmental conditions are expected to result in maximum sound propagation between the source and the receivers and when the energy facility is operating in a typical operations mode that produces maximum noise levels.

(a) The specialist shall measure noise levels at sites (1), (2), (5) and (6), as described in Exhibit X of the ASC, to determine if actual noise are within the levels specified in the applicable noise regulations in OAR 345-035-0035(1)(b)(B)(i).

(b) The Certificate Holder shall report the results of the noise evaluation to the Department.

(c) If actual noise do not comply with applicable DEQ regulations, the Certificate Holder shall take those actions necessary to comply with the regulations as soon as practicable.

(d) If initial measurements show that actual noise levels at site (5) by 7 dBA or more, the Certificate Holder shall measure the noise levels as specified in this condition and shall repeat the process outlined in subsections (a), (b), and (c) for site (5) within six months after completion of the initial measurements.

(5) The Certificate Holder shall install silencers on short duration noise sources (e.g. steam vents) from the heat recovery steam generator.

(6) The certificate holder shall confirm the PW1 noise level estimate at receiver 7 prior to the final design of PW2 and propose mitigation measures as necessary to ensure that the total PWGP noise levels do not exceed the limits specified in Table N-2 of the Final Order on Port Westward Amendment 7. [Amendment No. 7]

(7) Within six months after the start of commercial operation of PW2, the Certificate Holder shall retain a qualified noise specialist to measure noise levels associated with the PWGP energy facility operation (the operation of PW1 and PW2) during late night hours when environmental conditions are expected to result in maximum sound propagation between the source and each receiver and when the entire energy facility is operating in a typical operations mode that produces maximum noise levels.

(a) The specialist shall measure noise levels at sites (1), (2), (5),(6), and (7), to determine

if actual noise levels generated by the PWGP are within the levels shown on Table N-2 of the Final Order on Amendment 7. The noise levels at sites 1 and 2 shall be measured when the wind is either calm or out of a northerly direction but blowing no more than 10 mph. The noise levels at sites 5, 6 and 7 shall be measured when the wind is either calm or out of a southerly direction but blowing no more than 10 mph.

(b) The Certificate Holder shall report the results of the noise evaluation to the Department.

(c) If actual noise levels do not comply with applicable DEQ regulations, the Certificate Holder shall take those actions necessary to comply with the regulations as soon as practicable.

(d) If initial measurements at site (5) show that the hourly L_{50} noise level is 48 dBA or more with the Beaver Plant in operation or 47 dBA or more without the Beaver Plant in operation, the Certificate Holder shall repeat the process outlined in subsections (a), (b), and (c) at site (5) and (7) within six months after completion of the initial measurements. [Amendment No. 7]

(7) To address the concern that noise from any other noise source not associated with the PWGP or Beaver Plant have contributed to the results of the compliance noise measurements, the Certificate Holder may measure noise levels to determine if the operation of any other source has contributed to the compliance results. The Certificate Holder shall report the results of the noise evaluation to the Department indicating any adjustments to applicable noise limits consistent with OAR 340-035-0035(1)(b)(B)(i). [Amendment No. 7]

E.1.b. Wetlands and Removal/Fill Permit

(1) Before beginning construction of Phase 1 of the energy facility or the Port Westward to BPA Allston Substation Transmission Line, as appropriate, the Certificate Holder shall obtain a U.S. Army Corps of Engineers and Oregon Division of State Lands Joint Removal/Fill Permit substantially in the form of the Removal/Fill Permit in Attachment C; provided, that mitigation required under the Removal/Fill Permit shall allow for accommodation of Corps of Engineers mitigation requirements, subject to the concurrence of the Department, in consultation with the Division of State Lands and affected federal agencies. [Amendment No. 1]

(2) The Certificate Holder shall comply with state laws and rules applicable to the Removal/Fill Permit that are adopted in the future to the extent that such compliance is required under the respective statutes and rules.

(3) The Certificate Holder shall clearly stake the wetland boundary adjacent to the spoils disposal area and the wetland number 4 boundary adjacent to the construction

laydown/staging areas in the vicinity of the energy facility and the wetland boundary adjacent to the Beaver Generating Plant laydown/staging area prior to any ground disturbing activity in corresponding areas, and shall maintain the staking until all ground-disturbing activities in the corresponding areas have been completed. The Certificate Holder shall instruct all contractors disposing of soil in the spoils disposal area and using the construction laydown/staging areas in the vicinity of the energy facility or at the Beaver Generating Plant laydown/staging area about the purpose of the staking and shall require them to avoid any impact to the wetlands. [Amendments No. 3 & 10]

E.1.c. Public Health and Safety

(1) If local public safety authorities notify the Certificate Holder and the Department that the operation of the energy facility is contributing significantly to ground level fogging or icing along public roads and is likely to pose a significant threat to public safety, the Certificate Holder shall cooperate with local public safety authorities regarding the posting of warning signs on affected roads and the implementation of other reasonable safety measures.

(2) The Certificate Holder shall design the transmission lines and backup electricity lines so that alternating current electric fields shall not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public. [Amendment No. 1]

(3) The Certificate Holder shall design the transmission lines and backup electricity lines so that induced currents and voltage resulting from the transmission lines are as low as reasonably achievable. [Amendment No. 1]

(4) The Certificate Holder shall develop and implement a program that provides reasonable assurance that all fences, gates, cattle guards, trailers, or other objects or structures of a permanent nature that could become inadvertently charged with electricity are grounded or bonded throughout the life of the transmission line.

(5) The Certificate Holder shall restore or mitigate the reception of radio and television at residences and commercial establishments in the primary reception area to the level present before operation of the transmission line at no cost to residents or businesses experiencing interference resulting from the transmission line.

(6) The Certificate Holder shall design, construct and operate the transmission lines and backup electricity lines in accordance with the requirements of the National Electrical Safety Code. [Amendment No. 1]

(7) The Certificate Holder shall take reasonable steps to reduce or manage exposure to electromagnetic fields (EMF), consistent with Council findings presented in the "Report of EMF Committee to the Energy Facility Siting Council," March 30, 1993, and subsequent findings. Effective on the date of this Site Certificate, the Certificate Holder shall provide

information to the public, upon request, about EMF levels associated with the energy facility and related transmission lines and backup electricity lines. [Amendment No. 1]

(8) At least 30 days before beginning preparation of detailed design and specifications for the electrical transmission line(s) and backup electricity line(s) or the natural gas pipelines, the Certificate Holder shall consult with the Oregon Public Utility Commission staff to ensure that its designs and specifications are consistent with applicable codes and standards. [Amendments No. 1 & 5]

(9) With respect to the related or supporting natural gas pipelines, the Certificate Holder shall design, construct and operate the pipeline in accordance with the requirements of the U.S. Department of Transportation as set forth in Title 49, Code of Federal Regulations, Part 192. [Amendment No. 5]

E.1.d. Water Pollution Control Facilities Permit

(1) Before beginning commercial operation of Phase 1 of the energy facility, the Certificate Holder shall demonstrate that the DEQ has issued to the Certificate Holder a Water Pollution Control Facilities Permit, substantially in the form of Attachment B.1, allowing for on-site sanitary waste disposal. [Amendment No. 1]

(2) The Certificate Holder shall comply with state laws and rules applicable to Water Pollution Control Facilities Permits that are adopted in the future to the extent that such compliance is required under the respective statutes and rules.

F. CONDITIONS REQUIRED OR RECOMMENDED BY COUNCIL RULES

F.1. MANDATORY CONDITIONS IN SITE CERTIFICATES

Amendment of Site Certificate

(1) The Council shall not change the conditions of the Site Certificate except in accordance with the applicable provisions of OAR 345, Division 27, in effect on the date of the Council action.

Legal Description

(2) Before beginning construction of Phase 1 of the energy facility, the Certificate Holder shall submit to the Department a legal description of the site, except as provided in OAR 345-027-0023(6). [Amendment No. 1]

(a) The legal description of the site for purposes of beginning construction of Phase 1 may exclude the 180-foot wide strip (50 feet south and 130 feet north of an existing road) immediately north of Phase 1.

(b) The Certificate Holder shall notify the Department in writing if it is exercising the option to exclude the 180-foot wide strip from Phase 1.

(c) If the Certificate Holder excludes the strip from the legal description during Phase 1, the Certificate Holder shall submit to the Office, before beginning construction of Phase 2 of the energy facility, a legal description indicating whether the energy facility site for Phase 2 includes the 180-foot wide strip. [Amendment No. 2]

General Requirements

(3) The Certificate Holder shall design, construct, operate, and retire the facility:

(a) Substantially as described in the Site Certificate;

(b) In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the time the Council issues the Site Certificate; and,

(c) In compliance with all applicable permit requirements of other state agencies.

Construction Rights on Site

(4) Except as necessary for the initial survey or as otherwise allowed for transmission lines or pipelines in this condition, the Certificate Holder shall not begin construction, as defined in OAR 345-001-0010, or create a clearing on any part of the site until the Certificate Holder has construction rights on all parts of the site. For the purpose of this condition, "construction rights" means the legal right to engage in construction activities. For transmission lines or pipelines, if the Certificate Holder does not have construction rights on all parts of the site, the Certificate Holder may nevertheless begin construction or create a clearing on a part of the site if:

(a) The Certificate Holder has construction rights on that part of the site; and,

(b) The Certificate Holder would construct and operate part of the facility on that part of the site even if a change in the planned route of the transmission line or pipeline occurs during the Certificate Holder's negotiations to acquire construction rights on another part of the site.

For purposes of this condition, the "site" for purposes of beginning construction of Phase 1 may exclude the 180-foot wide strip (50feet south and 130 feet north of an existing road) immediately north of Phase 1. [Amendment No. 2]

Beginning and Completing Construction

(5) The Certificate Holder shall begin construction of the energy facility by November 8, 2006. Beginning construction of the Port Westward to BPA Allston Substation Transmission Line shall not satisfy this requirement. [Amendment No. 2]

(a) The Certificate Holder shall report promptly to the Department the date that it began construction of the facility, as defined in OAR 345-001-0010. In reporting the beginning of construction, the Certificate Holder shall briefly describe all work on the site performed before beginning construction, including work performed before the Council issued the Site Certificate and work performed to construct the Port Westward to BPA Allston Substation Transmission Line, and shall state the cost of that work, pursuant to OAR 345-026-0048. If the Certificate Holder constructs the energy facility in phases, the Certificate Holder shall report the beginning of construction of each phase. [Amendment No. 1]

(b) If the Certificate Holder begins construction of the Port Westward to BPA Allston Substation Transmission Line, as defined in OAR 345-001-0010, prior to beginning construction of the energy facility, it shall promptly report to the Department the date it began construction of the transmission line.

(6) The Certificate Holder shall complete construction of the facility by May 8, 2015. The completion of construction date is the day by which (1) the facility is substantially complete as defined by the Certificate Holder's construction contract documents; (2) acceptance testing is satisfactorily completed; and, (3) the energy facility is ready to commence continuous operation consistent with the Site Certificate. Completion of construction of the Port Westward to BPA Allston Substation Transmission Line separately shall not satisfy this requirement. [Amendments No. 2, 6, 8 & 9]

(a) The Certificate Holder shall report promptly to the Department the date it completed construction of the facility. If the Certificate Holder constructs the energy facility in phases, the Certificate Holder shall report the date of completion of each phase. [Amendment No. 1]

(b) If the Certificate Holder completes construction of the Port Westward to BPA Allston Substation Transmission Line separately before completing construction of the facility, it shall promptly report that date to the Department.

(c) Separate completion of construction of Port Westward to BPA Allston Substation Transmission Line shall be the date that PGE makes it available to the Summit/Westward Project to transmit energy.

(7) The Certificate Holder shall begin construction of the BESS by [Insert Date 3 years from Effective Date].

(8) The Certificate Holder shall compete construction of the BESS by [Insert Date 6 years from Effective Date].

F.2 OTHER CONDITIONS BY RULE

Incident Reports

(1) With respect to the related or supporting natural gas pipelines, the Certificate Holder shall submit to the Department copies of all incident reports required under 49 CFR §192.709 that involve the pipeline.

Rights-of-Way

-(2) Before beginning operation of the energy facility, the Certificate Holder shall submit to the Department a legal description of the permanent right-of-way where the Certificate Holder has built a pipeline or transmission line within an approved corridor. The site of the pipeline or transmission line subject to the Site Certificate is the area within the permanent right-of-way. However, if the Certificate Holder completes construction of the Port Westward to BPA Allston Substation Transmission Line before beginning construction of the energy facility, the Certificate Holder shall submit to the Department a legal description of the permanent right-of-way for that segment of that transmission line, notwithstanding OAR 345-027-0023(6).

Monitoring Programs

(3) If the Certificate Holder becomes aware of a significant environmental change or impact attributable to the facility, the Certificate Holder shall, as soon as possible, submit a written report to the Department describing the impact on the facility and its ability to comply with any affected Site Certificate conditions.

Compliance Plans

(4) Before beginning construction of the facility, the Certificate Holder shall implement a plan that verifies compliance with all Site Certificate terms and conditions and applicable statutes and rules. The Certificate Holder shall submit a copy of the plan to the Department. The Certificate Holder shall document the compliance plan and maintain it for inspection by the Department or the Council. However, if the Certificate Holder begins construction of the Port Westward to BPA Allston Substation Transmission Line before beginning construction of the energy facility, the applicable compliance plan shall relate to that phase of construction.

Reporting

(5) Within six months after beginning any construction, and every six months thereafter during construction of the energy facility and related or supporting facilities, the Certificate Holder shall submit a semi-annual construction progress report to the Council. In each construction progress report, the Certificate Holder shall describe any significant changes to major milestones for construction. When the reporting date coincides, the Certificate Holder may include the construction progress report within the annual report described in Condition F.2(6).

(6) The Certificate Holder shall, within 120 days after the end of each calendar year after beginning construction, submit an annual report to the Council that addresses the subjects listed in OAR 345-026-0080(2). The Council secretary and the Certificate Holder may, by mutual agreement, change the reporting date.

(7) To the extent that information required by OAR 345-026-0080(2) is contained in reports the Certificate Holder submits to other state, federal or local agencies, the Certificate Holder may submit excerpts from such other reports. The Council reserves the right to request full copies of such excerpted reports.

Schedule Modification

(8) The Certificate Holder shall promptly notify the Department of any changes in major milestones for construction, decommissioning, operation, or retirement schedules. Major milestones are those identified by the Certificate Holder in its construction, retirement or decommissioning plans.

Correspondence with Other State or Federal Agencies

(9) The Certificate Holder and the Department shall exchange copies of all correspondence or summaries of correspondence related to compliance with statutes, rules and local ordinances on which the Council determined compliance, except for material withheld from public disclosure under state or federal law or under Council rules. The Certificate Holder may submit abstracts of reports in place of full reports; however, the Certificate Holder shall provide full copies of abstracted reports and any summarized correspondence at the request of the Department.

Notification of Incidents

(10) The Certificate Holder shall notify the Department within 72 hours of any occurrence involving the facility if:

(a) There is an attempt by anyone to interfere with its safe operation;

(b) A natural event such as an earthquake, flood, tsunami or tornado, or a human-caused event such as a fire or explosion affects or threatens to affect the public health and safety or the environment; or,

(c) There is any fatal injury at the facility.

G. GENERAL CONDITIONS

(1) The general arrangement of the Port Westward Generating Project shall be substantially as shown in the ASC.

(2) The Certificate Holder shall ensure that related or supporting facilities are constructed in the corridors described in this Order and as shown in ASC and in the manner described in this Order and the ASC.

(3) During construction and operation of the energy facility, the Certificate Holder shall house the combustion turbine in an enclosure that provides thermal insulation, acoustical attenuation, and fire extinguishing media containment and that would allow access for routine inspection and maintenance.

Successors and Assigns

(4) Before any transfer of ownership of the facility or ownership of the Certificate Holder, the Certificate Holder shall inform the Department of the proposed new owners. The requirements OAR 345-027-0100 shall apply to any transfer of ownership that requires a transfer of the Site Certificate.

Severability and Construction

(5) If any provision of this Site Certificate is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and conditions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Site Certificate did not contain the particular provision held to be invalid. In the event of a conflict between the conditions contained in the Site Certificate and the Council's Order, the conditions contained in this Site Certificate shall control.

Governing Law and Forum

(6) This Site Certificate shall be governed by the laws of the State of Oregon.

(7) Any litigation or arbitration arising out of this agreement shall be conducted in an appropriate forum in Oregon.

IN WITNESS WHEREOF, this Site Certificate has been executed by the State of Oregon, acting by and through its Energy Facility Siting Council, and Portland General Electric Company.

ENERGY FACILITY SITING COUNCIL

By: _____
~~W. Bryan Wolfe~~[Insert Name], Chair Date

PORTLAND GENERAL ELECTRIC COMPANY

By: _____
Date

ATTACHMENT A MEMORANDUM OF UNDERSTANDING: MONETARY PATH PAYMENT REQUIREMENT
ATTACHMENT B WATER POLLUTION CONTROL FACILITIES PERMIT (B.1) AND ANALYSIS (B.2)
ATTACHMENT C REMOVAL/FILL PERMIT

ATTACHMENT D PGE REQUEST FOR AMENDMENT 7, REVISED EXHIBIT P.8.1 (AS TRANSMITTED IN NOVEMBER 19, 2009 LETTER RICK TETZLOFF TO ADAM BLESS "PORT WESTWARD GENERATING PROJECT – REVISIONS TO REQUEST TO AMEND SITE CERTIFICATE (AMENDMENT 7) TO ADDRESS ODFW COMMENTS")

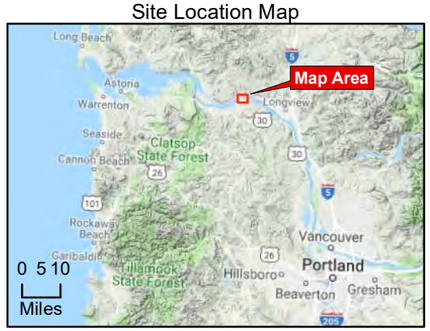
Attachment 8. Property Owners List

Property Owners List for the Port Westward Battery Energy Storage System Project

Taxlot Number	Owner	Street Address	City	State	Zip Code
8N4W1600 100	Port of Columbia Couty	PO Box 190	Columbia City	OR	97204
8N4W1600 200	Port of Columbia Couty	PO Box 190	Columbia City	OR	97204
8N4W1600 200	Cascade Kelly Holdings LLC	81200 Kallunki Road	Clatskanie	OR	97016
8N4W1500 500	Port of Columbia Couty	PO Box 190	Columbia City	OR	97204
8N4W1500 100	Port of Columbia Couty	PO Box 190	Columbia City	OR	97204
8N4W1500 600	Portland General Electric Company	121 SW Salmont Street	Portland	OR	97204
8N4W2200 1100	Port of Columbia Couty	PO Box 190	Columbia City	OR	97204
8N4W1500 200	Port of Columbia Couty	PO Box 190	Columbia City	OR	97018
8N4W1500 200	Port of Columbia Couty	PO Box 190	Columbia City	OR	97018

8N4W1600 100
8N4W1500 100
8N4W1500 500
8N4W1600 200
8N4W1500 200
8N4W1500 600
8N4W2200 1100

Site Location Map



Map Features

- Property Within 250 Feet of Sites
- Battery Storage Sites
- Property Boundary

0 500 1,000
Feet

N
W
E
S

Portland General Electric

Portland, Oregon

Properties Within 250 Feet of Project Sites

Port Westward Generating Project

Date:	Drawn By:	Rev.:
3/21/2019	J.B. Hoy	

Drawing File: J:\Biglow_Canyon\Maps\PW2_Battery_Property.mxd