

ORIGINAL

**VanNess  
Feldman**

ATTORNEYS AT LAW

September 4, 2007

Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Room 1A  
Washington, D.C. 20426

A PROFESSIONAL CORPORATION  
1015 Thomas Jefferson Street, N.W.  
Washington, D.C. 20007-3877  
(202) 298-1800 Telephone  
(202) 338-2414 Facsimile

Seattle, Washington  
(206) 622-9377

**John J. Buchovecky**  
(202) 298-1887  
jbb@vnf.com

Re: NorthernStar Energy LLC Docket Nos. CP06-366-000  
CP06-376-000  
CP06-377-000

Bradwood Landing LLC Docket No. CP06-365-000

**Response of Bradwood Landing LLC and NorthernStar Energy LLC to the  
Information Requests in the Draft Environmental Impact Statement of the  
Federal Energy Regulatory Commission**

Dear Ms. Bose:

Bradwood Landing LLC and NorthernStar Energy LLC, Applicants in the above-captioned proceedings, hereby submit for filing with the Federal Energy Regulatory Commission ("Commission") an original and 7 copies of the Applicants' response to questions 40, 94, and 95 of the Commission's Information Requests in the Draft Environmental Impact Statement.

Please contact me at the above address if you have any questions about these materials.

Sincerely,



John J. Buchovecky  
Counsel for NorthernStar Energy LLC and  
Bradwood Landing LLC

cc: P. Friedman (FERC)  
Service List

Applicant

1

K-1116

*Bradwood Landing LLC and NorthernStar Energy LLC  
FERC Docket Nos. CP06-365-000, et al.*

**Response of Bradwood Landing LLC and NorthernStar Energy LLC  
to the Information Request in the DEIS of the  
Federal Energy Regulatory Commission**

A1-1

**40, 94 and 95. NorthernStar shall provide, in its comments on the draft EIS or in a separate report, calculations showing how the troughs feeding the impoundment sumps would adequately handle the unloading line spill of 529,091 gallons. [Note: Same condition in 40, 94 and 95]**

**RESPONSE:** The question contains the value of 529,091 gallons. If the duration over which this volume drains is one hour, then the 2037 m<sup>3</sup>/hour is equivalent to 538,000 gallons per hour and satisfies the question. However, we presume the question refers to a spill that would result from a 10 minute spill at 12,000 m<sup>3</sup>/hour- we disagree that this is the proper design basis for sizing the trough. The attached letters provided by FERC to Bradwood Landing in June 2005 formed the basis for the sizing of the troughs serving the LNG unloading line. See Attachment A hereto: Letters from Richard R. Hoffmann (FERC) and Stacey L. Gerard (USDOT). The Applicants discussed the appropriate line size break with FERC staff for a 10-minute design spill and were told to use a 6" line break as the sizing criterion. The Applicants used the 6" line break as instructed by FERC staff. For the sizing calculation for the 6" line break ten minute spill, and the calculation for the other spill flowrates and preliminary trough sizing, see Attachment B hereto: Spill Rate Calculation and Trough Sizing Calculation.

**Applicant**

**1**

A1-1

See updated condition and text in section 4.11.4.

K-1117

*Bradwood Landing LLC and NorthernStar Energy LLC  
FERC Docket Nos. CP06-365-000, et al.*

**Attachment A**

**Letters from Richard R. Hoffmann (FERC) and Stacey L. Gerard (USDOT)**

K-1118

**Applicant**

**1**

Applicant

1

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FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

ORIGINAL

OFFICE OF ENERGY PROJECTS

April 19, 2005

Theodore L. Wilke  
Deputy Associate Administrator for Pipeline Safety  
U.S. Department of Transportation  
400 Seventh Street, SW  
Washington, DC 20590

Dear Mr. Wilke:

In accordance with the February 2004 Interagency Agreement for the review of LNG import/export facilities, we are requesting your concurrence that we are following appropriate procedures on a technical issue related to evaluating exclusion zones around LNG import terminals. The technical issue is about our selection of the single accidental leakage source used to calculate spills from piping at a terminal.

The incorporation of NFPA 59A into 49 CFR Part 193 in March 2000, has resulted in some discussion within the regulatory community on how design spills should be determined for marine transfer lines. Under NFPA Section 2.2.3.5, the design spill used in thermal and flammable vapor exclusion zone calculations for vaporization, process, or LNG transfer areas must equal the greatest volume from any "single accidental leakage source." Prior to March 2000, the design spill required the rupture of a single transfer pipe with the greatest overall flow capacity, for not less than 10 minutes (old Part 193.2059(d)).

The FERC staff presently uses the greatest overall flow volume for sizing impoundments at vaporization, process and transfer areas. This approach ensures that impoundments are sized for a catastrophic failure that could result from an external event or intentional act, while recognizing that a more likely rupture of a connection to the transfer line is more appropriate as the design spill used to calculate flammable vapor exclusion zones.

Our review of marine transfer systems finds that the design construction, operation and historical integrity of all-welded large diameter marine transfer piping does not support a full pipe rupture without ignition as a credible accident scenario. Marine transfer systems are constructed of relatively thick-walled seamless pipe, fully x-ray inspected during construction, and operated at moderate pressures (50 to 80 psi). Maximum flow rates are limited to the 10- to 12-hour cargo unloading period, a time when extra staff is on hand to monitor operations and detect abnormal events and quickly

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- 2 -

activate emergency shutdown systems. As a result, our determination of a single accidental leakage source for a marine transfer system is based on a facility-specific review of piping and instrumentation diagrams to identify all small diameter attachments to the transfer piping for instrumentation, pressure relief, recirculation, etc, and any flanges that may be used at valves or other equipment, in order to determine the largest spill rate.

As an additional measure of conservatism in evaluating hazards from a terminal's operations, we have also decided to evaluate the marine unloading arms connected to the dock-side end of marine transfer system since the typical 16-inch diameter arms have the potential for a larger spill volume. However, we find that a shorter spill duration is appropriate since the powered emergency release coupling (PERC) valves equipped on all modern arms and the integrated ship to shore emergency shutdown systems should limit spills to less than 30 seconds.

We solicit your concurrence on this approach in determining the accidental leakage source for marine transfer systems. If you have any questions about this request, please call Chris Zerby at 202-502-6111. Thank you for your continued cooperation.

Sincerely,

Richard R. Hoffmann, Director  
Division of Gas - Environment  
and Engineering

# Applicant

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K-1120

# Applicant

# 1

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U.S. Department  
of Transportation  
**Pipeline and  
Hazardous Materials Safety  
Administration**

400 Seventh Street, S.W.  
Washington, D.C. 20590

MAY 8 2005

REGULATORY COMMISSION  
05 JUN 15 PM 12:10  
FEDERAL ENERGY

Richard R. Hoffmann  
Director  
Division of Gas - Environment and Engineering  
Federal Energy Regulatory Commission  
834 First Street, N.E.  
Washington, DC 20426

Dear Mr. Hoffmann:

This is in response to your letter of April 19, requesting the Office of Pipeline Safety's (OPS) advice on the procedures you are following in evaluating exclusion zones for marine cargo transfer lines in LNG import terminals. We are pleased to respond in the spirit of the February 2004 Interagency Agreement on coordination of Federal safety efforts and because our regulations, 49 CFR Part 193, are used to assess the safety and hazard impacts from proposed siting of LNG facilities, including marine transfer lines.

Our regulations provide that impounding areas for marine cargo transfer systems be based on a design spill defined as flow from any single accidental leakage source for 10 minutes or for a shorter time. The shorter time is based upon demonstrable surveillance and shutdown provisions acceptable to the authority having jurisdiction. Therefore, these spills are the basis upon which hazard exclusion modeling could be performed.

The OPS agrees that the design and construction of marine cargo transfer systems is very robust and that failure is unlikely under operational constraints. Moreover, the extensive security and safety oversight provided by the USCG before, during, and after transfer operations further reduces the risk that a spill could threaten life and property. There is no documented evidence of a catastrophic failure ever having occurred in either LNG operational experience or research. The OPS intends to explore a more comprehensive approach that accounts for risk and probability instead of a spill based only on a worst case scenario. This may include incentives that encourage operators to utilize more mitigating measures in controlling potential spills to reduce the impact on people and property close to LNG facilities.

The OPS concurs with the two credible scenarios you propose for potential single accidental leakage sources, including your justification for smaller spill durations. The first scenario focuses on facility-specific small diameter attachments to the transfer piping to determine the largest spill rate. The OPS agrees with using this scenario for the design spill.

K-1121

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2

The second and more conservative scenario requires the review of the marine unloading arms based on the fact that these components are reconnected to the ship each time a ship docks. We agree that the integrated ship to shore shutdown systems make large spills here very unlikely. Therefore, spill duration of 30 seconds or less from leaking flanges instead of guillotine breaks may be used for the spill rate criteria.

We appreciate the opportunity to provide the above input on your approach in determining the accidental leakage source for marine transfer systems. If you have any questions or require any additional information on our position, please feel free to contact me or Theodore Wilke, Deputy Associate Administrator for Pipeline Safety, at (202)366-4595.

Sincerely yours,



Stacy E. Gerard  
Associate Administrator for Pipeline Safety

Applicant

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K-1122

*Brachwood Landing LLC and NorthernStar Energy LLC  
FERC Docket Nos. CP06-365-000, et al.*

**Attachment B**  
**Spill Rate Calculation**  
**Trough Sizing Calculation**

**Applicant**

**1**

K-1123

Applicant

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K-1124

					
Document No.	Revision	Date	Sheet		
W00031-000-PR-CA-037	P1	2/10/2006	1 of 2		
<p>Client: Northern Star Natural Gas</p> <p>Project No. 31</p> <p><b>Northern Star Natural Gas Project</b></p> <p><b>SPILL RATE CALCULATION</b></p> <p>Document No: <b>W00031-000-PR-CA-037</b></p>					
P1	Issue for IDC	LH 10/2/06	GD 15/2/06	JCF 15/2/06	
Rev	Date	Made by	Date	App'd by	Date
Client	Northern Star Natural Gas		Enquiry/Project No. 31		
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Applicant

1

K-1125

Calculation Continuation Sheet		WHESSOE	
<b>1.1 Purpose</b>			
The purpose of this calculation is to determine the spill rates to be used in vapour dispersion analysis. The spill is assumed to be from a line rupture. Rupture of the 32" unloading lines is not considered. Flow due to a rupture of the 6" recirculation line is calculated assuming flow through an orifice.			
<b>1.2 Calculation method</b>			
From Coulson & Richardson, Chemical Engineering, Vol 1 (Fluid Flow, Mass Transfer and Heat Transfer)			
$\left[1 - (A_o/A_u)^2\right]^{0.5} > 1$ then			
$G = C_d A_o [2 \times \rho \times (\Delta P)]^{0.5}$			
where			
G = mass flow rate (kg/s)			
C <sub>d</sub> = coefficient of discharge = 0.61 where Re > 10000			
A <sub>o</sub> = area of orifice (m <sup>2</sup> )			
A <sub>u</sub> = area of upstream pipe (m <sup>2</sup> )			
ρ = density (kg/m <sup>3</sup> )			
ΔP = Upstream pressure - downstream pressure [Pa]			
<b>1.3 Spill rate - Berth</b>			
<b>1.3.1 Flow through 2" orifice in 32" line</b>			
Density	ρ =	421 kg/m <sup>3</sup>	HYSYS
Upstream line size		32 in = 0.8128 m	
Orifice size		2 in = 0.0525 m	
Upstream pipe area	A =	0.519 m <sup>2</sup>	
Orifice area	A <sub>o</sub> =	0.002 m <sup>2</sup>	
$\left[1 - (A_o/A_u)^2\right]^{0.5}$		1.000	
Upstream pressure	P =	520,575 Pa (g)	HYSYS
Downstream pressure	P <sub>d</sub> =	0 Pa (g)	Atmospheric
Mass flow	G =	27.65 kg/s = 99,526 kg/h	
Volumetric flow	Q =	238 m <sup>3</sup> /h	
<b>1.3.2 Flow through 6" orifice in 32" line</b>			
Density	ρ =	421 kg/m <sup>3</sup>	HYSYS
Upstream line size		32 in = 0.8128 m	
Orifice size		6 in = 0.1541 m	
Upstream pipe area	A =	0.519 m <sup>2</sup>	
Orifice area	A <sub>o</sub> =	0.019 m <sup>2</sup>	
Title	Spill Rates		Rev
Calculation No.	W00031-000-PR-CA-037		P1 1 of 2

Applicant

1

Calculation Continuation Sheet		WHESSOE	
$[1 - (A_2/A_1)^2]^{0.5} =$	0.999	-> 1	
Upstream pressure $P_1 =$	520,575 Pa (g)	HYSYS	
Downstream pressure $P_2 =$	0 Pa (g)	Atmospheric	
Mass flow $G =$	238.19 kg/s	=	857.482 kg/h
Volumetric flow $Q =$	2.037 m <sup>3</sup> /h		
<b>1.4 Spill rate - Tank</b>			
1.4.1 Flow from rupture of in-tank pump common discharge line			
Three in-tank pumps provided per tank. For worst case, assume all pumps running i.e. 9 pumps running.			
Pump max capacity	2,353 Usgal/min	=	534 m <sup>3</sup> /h W00031-161-PR-DS-002
Number of pumps running	9		
Max flow in line	21,177 Usgal/min	=	4810 m <sup>3</sup> /h
<b>1.5 Spill rate - Sencoud</b>			
1.5.1 Flow from rupture of sencoud pump common discharge line			
Seven sencoud pumps provided (incl future). For worst case, assume all pumps running i.e. 7 pumps running.			
Pump max capacity	2,398 Usgal/min	=	545 m <sup>3</sup> /h W00031-561-PR-DS-004
Number of pumps running	7		
Max flow in line	16,786 Usgal/min	=	3813 m <sup>3</sup> /h
Title	Spill Rates		Rev P1
Calculation No.	W00031-000-PR-CA-037		2 of 2

K-1126



K-1128

Calculation Continuation Sheet		WHESSOE	
<b>1.1 Purpose</b>			
The purpose of this calculation is to determine the flowrate along a trough of assumed dimensions. This calculation is iterative, requiring variation of trough dimensions until required flowrate is achieved. Based on flow of water.			
<b>1.2 Trough size - Berth</b>			
Required flowrate	Q =	2.037	m <sup>3</sup> /h
$v = (r^{2/3} \times S^{1/2}) / n$			
where			
v = velocity	[m/s]		
r = hydraulic radius			
S = slope	= 1 / 400 =	0.0025	
n = coefficient (concrete)	=	0.019	
$\Rightarrow v = 2.631 r^{2/3}$			
Width	W =	1.2	m
Depth	H =	0.5	m
Area	A =	0.6	m <sup>2</sup>
Wetted perimeter	P =	2.2	m
Hydraulic radius	r =	0.273	
Velocity	v =	1.106	m/s
Flowrate	Q =	2.390	m <sup>3</sup> /h
Q = v x A (x 3600)			
OK			
<b>1.3 Trough size - Spandrel</b>			
Required flowrate	Q =	3.815	m <sup>3</sup> /h
$v = (r^{2/3} \times S^{1/2}) / n$			
where			
v = velocity	[m/s]		
r = hydraulic radius			
S = slope	= 1 / 400 =	0.0025	
n = coefficient (concrete)	=	0.019	
$\Rightarrow v = 2.631 r^{2/3}$			
Width	W =	1.8	m
Depth	H =	0.5	m
Area	A =	0.9	m <sup>2</sup>
Wetted perimeter	P =	2.8	m
Hydraulic radius	r =	0.321	
Velocity	v =	1.235	m/s
Flowrate	Q =	4.000	m <sup>3</sup> /h
Q = v x A (x 3600)			
OK			
Title		Trough Sizing	
Calculation No.		W00031-000-PR-CA-038	
Rev		P1	
		1 of 2	



K-1129

Calculation Continuation Sheet		WHESSOE	
<b>1.4. Trough size - In-tank pumps (one tank)</b>			
Required flowrate	Q =	1,600	m <sup>3</sup> /h
$v = (r^2 \times S^3) / n$			
where			
v = velocity	(m/s)		
r = hydraulic radius			
S = slope	= 1 / 400 =	0.0025	
n = coefficient (concrete)	=	0.019	
$\Rightarrow v = 2.611r^2$			
Width	W =	1.2	m
Depth	H =	0.5	m
Area	A =	0.6	m <sup>2</sup>
Wetted perimeter	P =	2.2	m
Hydraulic radius	r =	0.273	
Velocity	v =	1.106	m/s
Flowrate	Q =	2,380	m <sup>3</sup> /h
Q > v x A (x 3600) <span style="float: right;">OK</span>			
<b>1.5. Trough size - In-tank pumps (common tendon i.e. 9 pumps)</b>			
Required flowrate	Q =	4,810	m <sup>3</sup> /h
$v = (r^2 \times S^3) / n$			
where			
v = velocity	(m/s)		
r = hydraulic radius			
S = slope	= 1 / 400 =	0.0025	
n = coefficient (concrete)	=	0.019	
$\Rightarrow v = 2.611r^2$			
Width	W =	2.1	m
Depth	H =	0.5	m
Area	A =	1.1	m <sup>2</sup>
Wetted perimeter	P =	3.1	m
Hydraulic radius	r =	0.339	
Velocity	v =	1.278	m/s
Flowrate	Q =	4,832	m <sup>3</sup> /h
Q > v x A (x 3600) <span style="float: right;">OK</span>			
Title		Trough Sizing	
Calculation No.		W00031-000-PR-CA-038	
Rev	P1		
	2 of 2		

ORIGINAL

**VanNess  
Feldman**  
ATTORNEYS AT LAW

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Seattle, Washington  
(202) 823-8372

**John J. Buchovecky**  
(202) 298-1887  
jbb@vnf.com

September 4, 2007

Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Room 1A  
Washington, D.C. 20426

**Re: NorthernStar Energy LLC Docket Nos. CP06-366-000  
CP06-376-000  
CP06-377-000**

**Bradwood Landing LLC Docket No. CP06-365-000**

Dear Ms. Bose:

Enclosed for filing with the Federal Energy Regulatory Commission in the above referenced proceedings please find an original and 7 copies of letters in support of the Bradwood Landing liquefied natural gas terminal and pipeline.

Please contact me at the above address if you have any questions about these materials.

Sincerely,



John J. Buchovecky  
Counsel for NorthernStar Energy LLC  
and Bradwood Landing LLC

cc: P. Friedman (FERC)  
Service List

**Applicant**

**2**

K-1130

# Applicant

9/13/07  
copy

Magalie R. Salias, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426  
Reference No. CP06-365, CP06-366

Dear Madam Secretary,

A2-1

I am writing in support of the NorthernStar Natural Gas LNG receiving terminal and associated pipeline at Bradwood Landing in Clatsop County, Oregon. Demand for clean burning natural gas is increasing, while North American supplies are stable to decreasing. This is a significant problem in the Pacific Northwest as more and more of the natural gas supply is moving to the Eastern United States. Exploration and drilling in the U.S. and Canada has only managed to maintain current production. Bradwood Landing will assure natural gas supplies needed to maintain a strong economy here in the Northwest. There is no question that the U.S. needs to import liquefied natural gas for the Northwest's energy needs.

The United States continues to lose jobs to overseas manufacturing and I believe we will lose more jobs offshore if we do not compete in the world energy market by importing natural gas. The United States and Pacific Northwest need to import natural gas to maintain "Family Wage" jobs.

I am a Union Carpenter, a member of the Pacific Northwest Regional Council of Carpenters. The PNWRCC represents over 18,000 Union Carpenters in Washington, Oregon, Idaho, Montana and Wyoming. I believe that Northern Star's commitment to a Project Labor Agreement will be a key component to the success of Bradwood Landing. Highly skilled and professional workers will ensure a safe and high quality construction project.

NorthernStar has done an outstanding job of communicating with the Lower Columbia community. They have been open and transparent, hosting open houses at Bradwood Landing, information meetings on both sides of the Columbia River, and public presentations showing a strong commitment to the community. This effort proves that NorthernStar is an exceptional developer and should get your YES vote for issuing the permit to construct Bradwood Landing.

Bradwood Landing was an industrial site for decades, where citizens of the Lower Columbia lived and worked. I believe it is beneficial to use existing industrial land for development, rather than "Greenfield" locations. This also shows NorthernStar's commitment to the environment. In addition, Bradwood Landing is an excellent location for the importation of LNG and the necessary pipeline to Kelso. Bradwood Landing is over two miles north of Highway 30 at mile marker 38 on the Columbia River. It is close to both the Pacific Ocean and the interstate pipeline.

Bradwood Landing should get your approval, a "Yes" vote from the Federal Energy Regulatory Commission. Please approve Bradwood Landing.

Sincerely, *W. Valley W. Ewing Sr. Local 2154*

*27470 SW Lenske Ln  
Wilsonville OR 97070*

A2-1

Comment noted.

K-1131

# Applicant

2

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First St. N.E., Room 1A  
Washington DC, 20426  
Reference Docket No. CP06-365

June 28, 2007

Dear Magalie Salas:

I am writing to voice my support for NorthernStar Natural Gas's proposed LNG terminal at Bradwood Landing in Clatsop County, Oregon.

A2-1  
cont'd

I am a resident of the Northwest and believe that this new facility is great for our community by providing much-needed family wage jobs and clean energy for the Pacific Northwest.

The proposed Bradwood Landing terminal site is located on the Columbia River, between Washington and Oregon, which has a long history as a working river. The Columbia is essential to the region's logging and fishing industries, and Bradwood Landing would be a welcome addition to the area's economy. NorthernStar is a responsible company who has pledged to mitigate any environmental effects and even leave the ecosystem in better shape than they found it.

I urge you and the commissioners to support this project.

Sincerely,



Terry Klemetsrud  
10121 Evergreen Hwy #25-141  
Everett, WA 98204

K-1132

# Applicant

2

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First St. N.E., Room 1A  
Washington DC, 20426  
Reference Docket No. CP06-365

June 28, 2007

Dear Magalie Salas:

I am writing to voice my support for NorthernStar Natural Gas's proposed LNG terminal at Bradwood Landing in Clatsop County, Oregon.

A2-1  
cont'd

I am a resident of the Northwest and believe that this new facility is great for our community by providing much-needed family wage jobs and clean energy for the Pacific Northwest.

The proposed Bradwood Landing terminal site is located on the Columbia River, between Washington and Oregon, which has a long history as a working river. The Columbia is essential to the region's logging and fishing industries, and Bradwood Landing would be a welcome addition to the area's economy. NorthernStar is a responsible company who has pledged to mitigate any environmental effects and even leave the ecosystem in better shape than they found it.

I urge you and the commissioners to support this project.

Sincerely,



Todd Holt  
108 East Bay Drive  
Newport, OR 97365

K-1133

# Applicant

2

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First St. N.E., Room 1A  
Washington DC, 20426  
Reference Docket No. CP06-365

June 28, 2007

Dear Magalie Salas:

I am writing to voice my support for NorthernStar Natural Gas's proposed LNG terminal at Bradwood Landing in Clatsop County, Oregon.

A2-1  
cont'd

I am a resident of the Northwest and believe that this new facility is great for our community by providing much-needed family wage jobs and clean energy for the Pacific Northwest.

The proposed Bradwood Landing terminal site is located on the Columbia River, between Washington and Oregon, which has a long history as a working river. The Columbia is essential to the region's logging and fishing industries, and Bradwood Landing would be a welcome addition to the area's economy. NorthernStar is a responsible company who has pledged to mitigate any environmental effects and even leave the ecosystem in better shape than they found it.

I urge you and the commissioners to support this project.

Sincerely, *Edward J. Mitchell Jr.*

Edward J Mitchell Jr  
3728 SW Firdrona Lane S.  
Port Orchard, WA 98367

K-1134



# Applicant

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First St. N.E., Room 1A  
Washington DC, 20426  
Reference Docket No. CP06-365

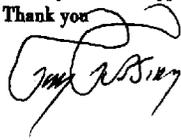
Dear Magalie Salas:

I support Bradwood Landing, the proposed LNG terminal on the Columbia River. I support Bradwood for Environmental reasons and I have listed them below:

- Methane, otherwise known as Natural Gas produces a much lower amount of CO2 than coal or coal gasification. We are going to need reliable energy supplies and Natural Gas produces less CO2.
- Many of the world's gas reserves are historic "stranded" reserves. These reserves were discovered during oil explorations and capped. So much of the drilling and discovery has been completed. That alone lessens the environmental impact
- Until recently oil wells burned their excess Natural Gas, flared it off. They looked at methane as a useless byproduct in the exploration and development of oil wells. Now, that methane is being captured and sent to market. This again is a very positive environmental gain. The conservation of energy!
- Bradwood will have minimal impact along its pipeline route with directional drilling of the pipeline under rivers and sensitive wetlands. Only 36 miles of pipeline to get Bradwood Landings Natural Gas to the Northwest energy markets.
- Northern Star, Bradwood Landings developer has committed to restoring the Hunt Creek Estuary and Hunt Creek. A small project but we all know how positive Salmon enhancement on multiple projects adds up to Salmon restoration.

Northern Star is a responsible company developing a responsible project. Please join me in supporting Bradwood Landing.

Thank you



Jim Pussing  
480 W. Makire Dr  
Astoria, OR

A3-1

A3-1

Comment noted.

K-1136

# Applicant

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First St. N.E., Room 1A  
Washington DC, 20426  
Reference Docket No. CP06-365

Dear Magalie Salas:

I support Bradwood Landing, the proposed LNG terminal on the Columbia River. I support Bradwood for Environmental reasons and I have listed them below:

A3-1  
cont'd

- Methane, otherwise known as Natural Gas produces a much lower amount of CO2 than coal or coal gasification. We are going to need reliable energy supplies and Natural Gas produces less CO2.
- Many of the world's gas reserves are historic "stranded" reserves. These reserves were discovered during oil explorations and capped. So much of the drilling and discovery has been completed. That alone lessens the environmental impact
- Until recently oil wells burned their excess Natural Gas, flared it off. They looked at methane as a useless byproduct in the exploration and development of oil wells. Now, that methane is being captured and sent to market. This again is a very positive environmental gain. The conservation of energy!
- Bradwood will have minimal impact along its pipeline route with directional drilling of the pipeline under rivers and sensitive wetlands. Only 36 miles of pipeline to get Bradwood Landings Natural Gas to the Northwest energy markets.
- Northern Star, Bradwood Landings developer has committed to restoring the Hunt Creek Estuary and Hunt Creek. A small project but we all know how positive Salmon enhancement on multiple projects adds up to Salmon restoration.

Northern Star is a responsible company developing a responsible project. Please join me in supporting Bradwood Landing.

Thank you

*Lena Rae Michelle Bucy*  
LENA-RAE Michelle Bucy  
193 Bond St #3  
Astoria, Oregon 97103

K-1137

# Applicant

3

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First St. N.E., Room 1A  
Washington DC, 20426  
Reference Docket No. CP06-365

Dear Magalie Salas:

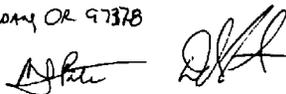
I support Bradwood Landing, the proposed LNG terminal on the Columbia River. I support Bradwood for Environmental reasons and I have listed them below:

A3-1  
cont'd

- Methane, otherwise known as Natural Gas produces a much lower amount of CO2 than coal or coal gasification. We are going to need reliable energy supplies and Natural Gas produces less CO2.
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Northern Star is a responsible company developing a responsible project.  
Please join me in supporting Bradwood Landing.  
Thank you

DON & JENN POTE  
503 SE STEEDMAN RD #3  
SEASIDE OR 97138



K-1138

# Applicant

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First St. N.E., Room 1A  
Washington DC, 20426  
Reference Docket No. CP06-365

Dear Magalie Salas:

I support Bradwood Landing, the proposed LNG terminal on the Columbia River. I support Bradwood for Environmental reasons and I have listed them below:

A3-1  
cont'd

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Northern Star is a responsible company developing a responsible project. Please join me in supporting Bradwood Landing.  
Thank you



Thomas E. Kamm

3222 Hwy 101 N #2  
E. Astoria, Oregon 97125

K-1139

# Applicant

3

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First St. N.E., Room 1A  
Washington DC, 20426  
Reference Docket No. CP06-365

Dear Magalie Salas:

I support Bradwood Landing, the proposed LNG terminal on the Columbia River. I support Bradwood for Environmental reasons and I have listed them below:

A3-1  
cont'd

- Methane, otherwise known as Natural Gas produces a much lower amount of CO2 than coal or coal gasification. We are going to need reliable energy supplies and Natural Gas produces less CO2.
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Northern Star is a responsible company developing a responsible project. Please join me in supporting Bradwood Landing.  
Thank you

*Virginia Dieter*  
Virginia Dieter  
90952 Hungry Hollow Ln #3  
Westport, OR 97016

K-1140

# Applicant

Magalie R. Salas, Secretary  
Federal Energy Regulatory Commission  
888 First St. N.E., Room 1A  
Washington DC, 20426  
Reference Docket No. CP06-365

Dear Magalie Salas:

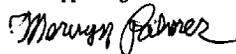
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Northern Star is a responsible company developing a responsible project. Please join me in supporting Bradwood Landing.

Thank you



12505 42ND. AVE ND  
PLYMOUTH MN. 55441  
Phone 763 559 7488

K-1141

**VanNess  
Feldman**  
ATTORNEYS AT LAW

October 15, 2007

Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Room 1A  
Washington, D.C. 20426

FILED  
OFFICE OF THE  
SECRETARY

2007 OCT 15 P 4:39

FEDERAL ENERGY  
REGULATORY COMMISSION

A PROFESSIONAL CORPORATION  
1050 Thomas Jefferson Street, N.W.  
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(202) 338-2416 Facsimile

Seattle, Washington  
(206) 629-8372

John J. Buchovecky  
(202) 298-1887  
jlb@vnf.com

 ORIGINAL

**Re: NorthernStar Energy LLC Docket Nos. CP06-366-000  
CP06-376-000  
CP06-377-000**

**Bradwood Landing LLC Docket No. CP06-365-000**

**Response of Bradwood Landing LLC and NorthernStar Energy LLC to the  
Information Request in the Draft Environmental Impact Statement of the  
Federal Energy Regulatory Commission**

Dear Ms. Bose:

A4-1 | Bradwood Landing LLC and NorthernStar Energy LLC, Applicants in the above captioned proceedings, hereby submit for filing with the Federal Energy Regulatory Commission ("Commission") an original and 7 copies of the Applicants' response to question 18 (Thermal Mixing Zone Modeling) of the Commission's Information Requests in the Draft Environmental Impact Statement.

Please contact me at the above address if you have any questions about these materials.

Sincerely,



John J. Buchovecky  
Counsel for NorthernStar Energy LLC and  
Bradwood Landing LLC

cc: P. Friedman (FERC)  
Service List

# Applicant

# 4

K-1142

A4-1 | Information from the technical memorandum, *Mixing Zone Analysis for Bradwood Landing Point Source Discharges – NorthernStar Natural Gas*, (submitted by NorthernStar in response to a recommendation in the draft EIS) has been incorporated into section 4.3.2.3. Directions for accessing NorthernStar's Mixing Zone Analysis for Bradwood Landing Point Source Discharges – NorthernStar Natural Gas via the eLibrary can be found in the response to comment FA1-14.

**VanNess  
Feldman**  
ATTORNEYS AT LAW

October 15, 2007

Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Room 1A  
Washington, D.C. 20426

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OFFICE OF THE  
SECRETARY

2007 OCT 15 P 4: 38

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(206) 623-9372

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jjb@vnf.com

 ORIGINAL

**Re: NorthernStar Energy LLC Docket Nos. CP06-366-000  
CP06-376-000  
CP06-377-000**

**Bradwood Landing LLC Docket No. CP06-365-000**

**Response of Bradwood Landing LLC and NorthernStar Energy LLC to the  
Information Requests in the Draft Environmental Impact Statement of the  
Federal Energy Regulatory Commission**

Dear Ms. Bose:

A5-1

Bradwood Landing LLC and NorthernStar Energy LLC, Applicants in the above captioned proceedings, hereby submit for filing with the Federal Energy Regulatory Commission ("Commission") an original and 7 copies of the Applicants' response to questions 41 and 96 (Rail Traffic Description) of the Commission's Information Requests in the Draft Environmental Impact Statement.

Please contact me at the above address if you have any questions about these materials.

Sincerely,



John J. Buchovecky  
Counsel for NorthernStar Energy LLC and  
Bradwood Landing LLC

cc: P. Friedman (FERC)  
Service List

# Applicant

# 5

A5-1

Information in this comment regarding rail traffic and associated Safety/ Security procedures, which was submitted by NorthernStar in response to a recommendation in the draft EIS, has been incorporated into section 4.8.2.7.

K-1143

*Bradwood Landing LLC and NorthernStar Energy LLC  
FERC Docket Nos. CP06-365-000, et al*

**Response of Bradwood Landing LLC and NorthernStar Energy LLC  
to the Information Request in the DEIS of the  
Federal Energy Regulatory Commission**

**41(a) and 96(a).** NorthernStar shall provide in its comments on the draft EIS a description of historical, current, and anticipated rail traffic which includes the type of rail traffic (cargo, passenger, etc.), type of cargo, and frequency of all rail traffic which may utilize the railroad tracks adjacent to the facility. [Note: Same condition in 41 and 96]

**RESPONSE:** There is one set of railroad rails that runs through the Bradwood Landing terminal site. The tracks end approximately 25 miles west of the site.

Passenger train service through the Bradwood Landing terminal site, running between Portland and Astoria, was abandoned in 1952 due to low ridership.<sup>1</sup> Anecdotal information collected by Bradwood Landing indicates that, with the exception of the brief period described below, a train has not run through the terminal site since at least 1987. In fact, soil covered the railroad tracks for at least 12 years prior to the clearing of the tracks to allow the Lewis & Clark Explorer Train (LCE) to temporarily operate from 2003 to 2005. From 2003 to 2005, during the bicentennial celebration of Lewis and Clark's exploration, the LCE provided summer-only passenger train service between Portland and Astoria. The LCE was heavily subsidized, and the service was terminated in 2005 when the subsidy ended.

Since the termination of the LCE service, a train has not run through the Bradwood Landing terminal site. There is currently no traffic on the tracks and the P&W railroad has no plans to run trains west of Wauna (Wauna is east of Bradwood). The tracks were washed out west of the Bradwood Landing terminal site two years ago, approximately half-way to Astoria, and are currently impassable. The tracks have not been repaired, and there is no justification for trains to run between Bradwood and the washed out tracks, although the P&W railroad is in discussions with the local diking districts to repair the dikes and restore the tracks.

During the construction of Bradwood Landing, materials that can be cost effectively delivered by rail will be.

<sup>1</sup> <http://www.nationalcorridors.org/df/d06022003.shtml>

**Applicant**

**5**

K-1144

*Bradwood Landing LLC and NorthernStar Energy LLC  
FERC Docket Nos. CP06-365-000, et al*

**41(b) and 96(b).** NorthernStar shall also provide detailed procedures for coordinating with the railroad company to ensure safe rail transit through the Bradwood Landing LNG facility property.

**RESPONSE:** If there is an upset event at the Bradwood Landing Terminal (the "Terminal"). Terminal security will call the railroad dispatch operator who will call the train engineer and tell him to stop short of the Bradwood Landing facility property until the all clear is given. Such procedures are not foreign to the railroad and are in place for other locations, conditions, and circumstances. The following is the detailed procedure for coordinating with the railroad company to ensure safe rail transit through the Bradwood Landing LNG facility property.

**General Operations of the LNG Terminal**

Routine Terminal operations are broadly comprised of three separate categories:

1. LNG Carrier Offloading
2. LNG Vaporization
3. General Support Operations

LNG Carrier Offloading operations involve the arrival of a LNG Carrier, the transfer of LNG from the Carrier to the terminal storage tanks, and the departure of the Carrier.

LNG Vaporization activities are carried out based on market demand and are unrelated to LNG Carrier activities. The Terminal is expected to carry out this activity as an around-the-clock routine and under normal operations, no phase of this activity presents any risk to the safety of railroad operations, nor do vaporization operations influence railroad operations.

General Support Operations include routine and nonscheduled maintenance and repairs, administrative support, and all other miscellaneous activities required at the Terminal. Under normal operations, no phase of this activity presents any risk to the safety of railroad operations, nor do LNG Carrier operations influence railroad operations. Under operational upset or emergency response conditions, railroad operations may potentially be affected depending on the nature and severity of the event.

**General Operations of the Railroad**

There is only one set of railroad rails that runs through the Bradwood Landing Terminal. The railroad may schedule future trains so that there is either an east bound train or a west bound train running at any one time. The logistical possibilities for rail traffic are very limited, thus if service ever did commence, keeping track of train traffic would be simple.

Railroads run trains on a routine schedule where service is provided. If trains begin running through the Terminal, Bradwood Landing management/security would coordinate with the railroad to obtain the schedule for the trains passing through the Terminal.

**Applicant**

**5**

K-1145

*Bradwood Landing LLC and NorthernStar Energy LLC  
FERC Docket Nos. CP06-365-000, et al.*

#### **Upset Conditions**

An upset condition could be an act of nature, such as an earthquake or severe storm; a fire at the terminal or surrounding site; or a hydrocarbon leak. Events that require an Emergency Response are very rare (with the exception of severe storms, which are still infrequent, but less so than the other upset conditions). It is more likely than not that no Emergency Response event will occur during the life of the Terminal. Regardless of the unlikelihood of an upset condition at the facility, it is still necessary for Bradwood Landing to have current and executable procedures in place for the notification of the railroad in the event of an upset condition at the Terminal. In the event that the railroad commences service, the notification procedures would be used to tell the train to stop short of Terminal. Such procedures are not foreign to the railroad and are in place for other locations, conditions, and circumstances.

#### **Notification Procedures**

The railroad has a dispatch operator that is reachable by direct phone line 24 hours a day, 7 days a week. If there is an upset event at the Terminal, plant security will call the railroad dispatch operator, who will call the train engineer, and tell him or her to stop short of the Terminal until the all clear is given.

#### *Non-Emergency Operational Upsets*

In the event of non-emergency operational upsets, a notification shall be made to the railroad providing the following information:

1. Description of upset/activity: *Scheduled or unscheduled maintenance, equipment failure, etc.*
2. Location on facility of upset: *Jetty, Control Room Building, etc.*
3. Anticipated duration: *When will upset condition be remedied? When will routine operations commence?*
4. Any safety issues: *Description of any issues that may result in an increase, or otherwise influence safety or railroad passage or track use.*
5. Change of status: *Any change to operational upset conditions or other information previously reported.*

An initial notification to the railroad shall be made as part of the initial action to any facility emergency response.

#### *Emergency Response Conditions*

There are a number of emergency response events which have specific response plans. These include:

- Spill or Release
- Severe Weather
- Fire
- Bomb Threat
- Earthquake

# Applicant

# 5

K-1146

*Bradwood Landing LLC and NorthernStar Energy LLC  
FERC Docket Nos. CP06-363-000, et al.*

- Terrorist Incident
- LNG Carrier Response

In the event of an emergency response, an initial notification shall be made to the railroad consisting of the following information:

1. Description of upset/activity: *LNG spill, fire, etc.*
2. Recommendation of immediate action by railroad: *Whether conditions and/or risks are such that a train should be stopped outside the Terminal until the situation improves.*

A follow-on notification shall be made providing the following clarifying information as it becomes available:

3. Location on facility of emergency: *Jetty, Control Room Building, etc.*
4. Anticipated duration of emergency: *When will the emergency be remedied; When will Terminal and/or Emergency Responders stand down from response operations?*
5. Any intermediate safety issues: *Description of any issues which may result in an increase, or otherwise influence safety, railroad passage, or track use; Safety related information in addition to that provided in the initial notification.*

**Normalization of Conditions**

For non-emergency operational upset situations, Bradwood Landing shall appraise the railroad dispatcher when conditions at the Terminal return to normal and shall include a final recommendation regarding the use of the railroad. The dispatcher will communicate the all clear to the train engineer.

Recovery actions from an Emergency Response condition depend on the nature, severity, and in some cases the duration of the event. Emergency responses may be handled completely by Bradwood Landing Terminal personnel or, for responses to events of significant magnitude, it may be appropriate to establish a Unified Command. In the case of a Unified Command structure for the response, the all clear communication to the railroad dispatcher shall be made jointly by the Unified Command and Bradwood Landing. The dispatcher will communicate the all clear to the train engineer.

# Applicant

5

K-1147

**VanNess  
Feldman**  
ATTORNEYS AT LAW

A PROFESSIONAL CORPORATION  
1050 Thomas Jefferson Street, N.W.  
Washington, D.C. 20007-3877  
(202) 296-1800 Telephone  
(202) 338-2416 Facsimile

Seattle, Washington  
(206) 823-9372

**John J. Buchovecky**  
(202) 296-1887  
jtb@vnf.com

December 21, 2007

Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Room 1A  
Washington, D.C. 20426

Re: NorthernStar Energy LLC Docket Nos. CP06-366-000  
CP06-376-000  
CP06-377-000

Bradwood Landing LLC Docket No. CP06-365-000

**Applicants' Response to FERC Staff's Recommended Mitigation Measures  
in the Draft Environmental Impact Statement; Request for Confidential  
Treatment**

Dear Ms. Bose:

Pursuant to the Federal Energy Regulatory Commission's ("FERC" or "Commission") "Notice of Availability of the Draft Environmental Impact Statement for the Bradwood Landing Project" issued August 17, 2007, Bradwood Landing LLC and NorthernStar Energy LLC (the "Applicants") hereby submit the following materials in response to and as requested by FERC Staff's Recommended Mitigation Measures in the Draft Environmental Impact Statement ("DEIS") issued in the above-referenced dockets.

The following materials comprise this filing:

1. **Public Version:** Applicants are submitting for filing an original and 7 copies of a public version of the Applicants' Response to FERC Staff's Recommended Mitigation Measures in the Draft Environmental Impact Statement. The public version has certain privileged and confidential information redacted.

**Applicant**

**6**

2. **Confidential Version:** Applicants are also submitting for filing one copy of confidential version of the Applicants' Response to FERC Staff's Recommended Mitigation Measures in the Draft Environmental Impact Statement, and request that the Commission treat this material as privileged and confidential pursuant to Commission Rule 385.1112 (18 C.F.R. § 385.1112). Applicants hereby request confidential treatment of the enclosed information based on the concerns expressed by certain landowners over the personal nature of the information contained therein. This information is marked "Contains Privileged Information – Do Not Release."

The conditions and responses are summarized below. For certain responses, Applicants have enclosed additional responsive information, as noted below.

- K-1149
- |      |  |
|------|--|
| A6-1 | <ol style="list-style-type: none"><li>1. <i>DEIS Condition 16: Conduct a comparative analysis of the FERC's Plan and its pipeline ESC Plan and SWPPP to demonstrate that NorthernStar's plans provide equal or greater protections to the environment. If the analysis determines that specific aspects of NorthernStar's plans do not provide equal or greater protections, NorthernStar shall revise its plans to include the measures from the FERC's Plan or shall provide proposed alternative measures that would provide equal or greater protections.</i><br/><br/><u>Applicants' Response to Condition 16:</u> Applicants' comparative analysis is included as "Applicants' Condition 16 Response" in the enclosed materials.</li></ol> |
| A6-2 | <ol style="list-style-type: none"><li>2. <i>DEIS Condition 20: NorthernStar shall revise the locations of the 10 unapproved additional temporary workspaces listed in table 4.4 1-7 of this EIS that are within 50 feet of wetlands per our Procedures (see section VI.B.1.a), or provide a better site-specific justification for situating those temporary workspaces within 50 feet of wetlands for the review and written approval of the Director of OEP.</i><br/><br/><u>Applicants' Response to Condition 20:</u> Applicants' revised locations for Additional Temporary Workspaces are included as "Applicants' Condition 20 Response" in the enclosed materials.</li></ol>  |
| A6-3 | <ol style="list-style-type: none"><li>3. <i>DEIS Condition 21: NorthernStar shall consult with the appropriate federal and state agencies to develop a Bubble Curtain Contingency Plan that establishes a performance standard to assess whether or not bubble curtains are adequately working. The plan shall describe specific noise attenuation methods to be implemented if monitoring indicates poor noise attenuation performance.</i><br/><br/><u>Applicants' Response to Condition 21:</u> Applicants' revised Bubble Curtain Contingency Plan is included as "Applicants' Condition 21 Response" in the enclosed materials.</li></ol>   |

# Applicant

- |      |   |
|------|---|
| A6-1 | NorthernStar's response did not provide adequate detail and, therefore, we have modified our recommendation in section 4.2.3.2 that NorthernStar should revise its pipeline ESC Plan and SWPPP to include the measures from the FERC's Plan that provide greater protections.                                     |
| A6-2 | NorthernStar's response to our recommendation regarding unapproved temporary workspaces within 50 feet of wetlands has been incorporated into section 4.4.1.3.  |
| A6-3 | Section 4.5.2.1 has been revised to include the information from NorthernStar's Bubble Curtain Contingency Plan. However, the Bubble Curtain Contingency Plan provided does not contain the information requested in the recommendation. Therefore, the recommendation has not been removed from section 4.5.2.1. |

- A6-4 4. *DEIS Condition 26: NorthernStar shall continue to consult with the appropriate federal and state agencies to develop a Waterbody Mitigation Plan that describes the specific methods of in-water habitat mitigation to be conducted*
- Applicants' Response to Condition 26:* The Applicants have continued to consult with federal and state agencies in the development of a Waterbody Mitigation Plan. The result of these continued consultations, Applicants' Waterbody and Wetland Construction and Mitigation Plan, is included as "Applicants' Condition 26 Response" in the enclosed materials.
- A6-5 5. *DEIS Condition 30: NorthernStar shall expand the protective measures that would be used to avoid or minimize impacts on Steller sea lions during construction of the LNG terminal (e.g., safety, buffer, and noise impact zones) to include all pinnipeds*
- Applicants' Response to Condition 30:* Applicants' proposed protective measures to avoid or minimize impacts on Steller sea lions and other pinnipeds is included as "Applicants' Condition 30 Response" in the enclosed materials.
- A6-6 6. *DEIS Condition 33: NorthernStar shall develop its site-specific residential construction mitigation plans in consultation with the affected landowners. These plans shall show the pipeline centerline; the limits of the construction work area, each residence and other structures; existing pipelines and power lines; water bodies, roads, driveways, fences, trees or other landscaping, and private wells; and the location of safety fencing that would be installed during construction*
- Applicants' Response to Condition 33:* Applicants' Residential Construction Conceptual Mitigation Plan is included as "Applicants' Condition 33 Response" in the enclosed materials.
- A6-7 7. *DEIS Condition 38: Prior to the end of the draft EIS comment period, NorthernStar shall file with the Secretary a statement identifying the noise mitigation measures to be implemented during HDD activities to reduce noise levels at nearby NSAs. In addition, NorthernStar shall monitor noise during HDD activities and make all reasonable efforts to restrict noise increases from HDD operations to no more than 10 dBA above ambient noise levels if the resulting impact is above 55 dBA Ldn*
- Applicants' Response to Condition 38:* Applicants' HDD Noise Mitigation Measures are included as "Applicants' Condition 38 Response" in the enclosed materials.

## Applicant

## 6

- A6-4 NorthernStar has filed its Waterbody and Wetland Construction and Mitigation Procedures Plan with the FERC. Directions for accessing NorthernStar's Waterbody and Wetland Construction and Mitigation Procedures Plan via the eLibrary can be found in the response to comment FA2-17. However, agency comments on the plan have not yet been filed. Therefore, condition 26 has not been revised.
- A6-5 NorthernStar's response to our recommendation regarding protective measures to avoid or minimize impacts on pinnipeds was reviewed. However, the response does not provide the protections for pinnipeds requested in the recommendation. Therefore, the recommendation has not been removed from section 4.6.2.2.
- A6-6 Section 4.7.3.3 has been revised to include a discussion of NorthernStar's Residential Construction Conceptual Mitigation Plan.
- A6-7 Section 4.10.2.3 has been updated to include this information.

**VanNess  
Feldman**  
ATTORNEYS AT LAW

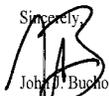
A6-8

8. DEIS Condition 39: Prior to the end of the draft EIS comment period, NorthernStar shall file with the Secretary, a statement identifying the **noise mitigation** that would be implemented for the Wauna Mill, Northwest Natural, and Williams Northwest pipeline valve sites to reduce noise at the NSAs to meet 55 dBA Ldn

Applicants' Response to Condition 39: Applicants' Valve Site Noise Mitigation Measures are included as "Applicants' Condition 39 Response" in the enclosed materials.

Please contact me at the above address if you have any questions about these materials.

Sincerely,



John P. Buchovecky  
Counsel for NorthernStar Energy LLC  
and Bradwood Landing LLC

cc: P. Friedman (FERC)  
K. Kelley (USCG)  
Karla Ellis (USACE)  
Service List

## Applicant

6

A6-8

Section 4.10.2.3 has been updated to include this information.

K-1151

# Applicant

7

**VanNess  
Feldman**  
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Seattle, Washington  
(206) 623-9372

**John J. Buchovecky**  
(202) 298-1887  
jjb@vnf.com

December 21, 2007

Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Room 1A  
Washington, D.C. 20426

Re: **NorthernStar Energy LLC** Docket Nos. CP06-366-000  
CP06-376-000  
CP06-377-000

**Bradwood Landing LLC** Docket No. CP06-365-000

**Applicants' Corrections to the Draft Environmental Impact Statement**

Dear Ms. Bose:

Pursuant to the Federal Energy Regulatory Commission's ("FERC" or "Commission") "Notice of Availability of the Draft Environmental Impact Statement for the Bradwood Landing Project" issued August 17, 2007, Bradwood Landing LLC and NorthernStar Energy LLC (the "Applicants") hereby submit the original and 7 copies of the following matrix detailing a number of corrections to the FERC Draft Environmental Impact Statement issued in the above-referenced dockets.

Please contact me at the above address if you have any questions about these materials.

Sincerely,  
  
John J. Buchovecky  
Counsel for NorthernStar Energy LLC  
and Bradwood Landing LLC

cc: P. Friedman (FERC)  
K. Kelley (USCG)  
Karla Ellis (USACE)  
Service List

K-1152

Bradwood Landing LLC and NorthernStar Energy LLC  
FERC Docket Nos. CP06-365-000 et al

### Applicants' Table of Corrections to FERC Draft Environmental Impact Statement

Other Documentation Source	DEIS Language or Figure	DEIS Section and Page Number	Reason	Discrepancy to be corrected in FEIS
<p>1. In Applicant-prepared BA filed in October 2006, dredging volume is stated at 700,000 cy for dredging on page 9. A cutter suction dredge would be used to remove approximately 700,000 cubic yards of material from about a 46-acre area of the 58-acre turning basin in the river (page 107)</p> <p>2. In March 2007 Conceptual Design Mitigation Plan, NSNG states "Dredging of 45.78 acres below the jurisdictional boundary of the Columbia River" is a permanent impact (page 4) On page 21 the Plan states: "Turning basin dredging would affect about 58 acres of bottom habitat in 20 to 40 feet deep water"</p> <p>3. August 2007 Preliminary Design Mitigation Plan, Table 1-2, states "46 acres of bottom habitat ranges in depth from 21 to 42 feet" On page 15, we state: "Dredging of 45.78 acres for the 58-acre turning basin below the jurisdictional boundary of the Columbia River"</p> <p>4. Corps Public Notice October 2007 which is in part based on the April 2007 JPA says: "Dredging of approximately 46 acres"</p>	<p>An additional 58 acres in the Columbia River would be dredged to create a ship maneuvering area</p>	<p>Executive Summary, Page ES-1</p>	<p>While dredging activities are typically quantified in terms of 3-dimensional units, by volume (calculated by estimating the length, width and depth of an area, and the proposed volume of 700,000 cubic yards has remained unchanged), an accompanying 2-dimensional description of the physical limits is typically provided in terms of length and width of the proposed area for dredging. Acres is an atypical way to describe dredging impacts because it's limited to 2 dimensions and doesn't account for surface variations that affect the actual estimated volume</p>	<p>Put construction dredging estimated footprint in the context of the larger "turning basin", "dredging of approximately 46 acres for the 58 acre turning basin is proposed associated with the terminal".</p>

A7-1

A7-1

The text of the EIS has been modified to reflect the correct acreage to be dredged.

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A7-2	In Oregon, temporary impacts to wetlands and waterways include up to 1.5 acres at the terminal and 75.64 acres along the pipeline	Construction of the LNG terminal facilities would result in temporary impacts on about 15 acres of wetland  Construction of the pipeline facilities temporarily affect about 98 acres of wetlands	Executive Summary, ES-3	Decimal point dropped, overestimates impacts by factor of 10	August 07 Mitigation Plan, 3rd draft indicates in Oregon, temporary impacts to wetlands and waterways include up to 1.5 acres at the terminal and 75.64 acres along the pipeline.
A7-3	N/A	Bradwood Landing Project Dredge Area Figure 2.1.3-2	Description of the Proposed Action Page 2-15	Drawing shows old and outdated footprint of terminal footprint, turning basin and wharf configuration	Replace with updated terminal operational layout (correct layout is shown in Figure 2.1.3-1 of DEIS) and attached dredge layout

# Applicant

A7-2 As described in table 4.4.1-2, construction of the LNG terminal would have temporary impacts on about 14.8 acres of wetlands. Of these, 12.9 acres would be permanently impacted by operation of the LNG terminal. Therefore, we have not revised the wetland acreages impacted by the LNG terminal facilities in the Executive Summary.

A7-3 Figure 2.1.3-1 has been updated.

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

NorthernStar Energy LLC	)	Docket Nos. CP06-366-000
	)	CP06-376-000
	)	CP06-377-000
Bradwood Landing LLC	)	Docket No. CP06-365-000

RESPONSE OF NORTHERNSTAR ENERGY LLC AND  
BRADWOOD LANDING LLC TO THE FEDERAL ENERGY REGULATORY  
COMMISSION STAFF'S RECOMMENDED MITIGATION MEASURE 24 IN  
THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

NorthernStar Energy LLC and Bradwood Landing LLC, Applicants in the above captioned proceedings, hereby submit to the Federal Energy Regulatory Commission ("FERC" or "Commission") Applicants' supplemental comments on "Mitigation Measure 24" proposed by FERC Staff in the Draft Environmental Impact Statement ("DEIS"), issued on August 17, 2007.<sup>1</sup> In the DEIS, FERC Staff recommended certain mitigation measures to be included in the authorization if the Commission authorizes the proposed Bradwood Landing liquefied natural gas ("LNG") import terminal and associated sendout pipeline (the "Project"). Recommended Mitigation Measure 24 in the DEIS states:

Prior to beginning initial site preparation at the LNG terminal, NorthernStar<sup>2</sup> shall prepare a plan, for review and written approval of the Director of OEP, which outlines how NorthernStar would ensure that only LNG ships that are retrofitted to use the screened water supply system at the berth are allowed to unload cargo at the Bradwood Landing LNG terminal. The plan shall include a method for

<sup>1</sup> Draft Environmental Impact Statement regarding the Bradwood Landing Project under CP06-365 et al., Accession Number: 20070817-4000 (filed Aug. 17, 2007).

<sup>2</sup> The DEIS refers to Applicants collectively as "NorthernStar."

notifying FERC in advance of an LNG ship's initial call to the terminal and verify that it has been retrofitted to utilize NorthernStar's screened water intake system for taking on water from the Columbia River for ballast and engine cooling.<sup>3</sup>

Applicants respectfully request that FERC revise recommended Mitigation Measure 24 for the reasons set forth herein.

**I. RECOMMENDED MITIGATION MEASURE 24 REFLECTS A MISUNDERSTANDING OF APPLICANTS' PROJECT AND PROPOSED MITIGATION MEASURES.**

A8-1

Applicants propose to construct and operate an LNG import facility and sendout pipeline located at approximately river mile 38 on the Columbia River at Bradwood Landing in Clatsop County, Oregon. The Project will include a state of the art terminal design, including a screened intake shore-based ballast water system ("on-site water system") to avoid and minimize, to the maximum extent practical, any harm to species listed as threatened or endangered ("Listed Species"). Applicants cannot guarantee that the Project as proposed by Applicants, including the on-site water system, will be 100% effective at mitigating all impacts on Listed Species.

In contrast, FERC Staff's Recommended Mitigation Measure 24 would require Applicants to *only* accept LNG carriers that have been retrofitted to utilize the on-site water system. For the reasons discussed below, by requiring *all* LNG carriers to be able to accept the on-site water system, Mitigation Measure 24 establishes a standard that is impossible for Applicants to guarantee.

Applicants' proposal has been, and continues to be, to construct the on-site water system and to negotiate with LNG carriers to fit the LNG carriers with the equipment necessary to allow LNG carriers use of the on-site water system. The goal of Applicants'

<sup>3</sup> Draft Environmental Impact Statement, *supra* note 1, at p. 4-145 and 5-24.

# Applicant

A8-1

Information in this comment regarding use of the on-site water system by LNG carriers, which was submitted by NorthernStar in response to a recommendation in the draft EIS, has been incorporated into sections 4.3.2.3 and 4.5.2.1. Additional analysis of the potential impacts on water quality and federally listed species associated with LNG carrier water intakes and discharges will be included in the revised BA and EFH Assessment.

A8-1  
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on-site water system program is to ensure that as many LNG carriers as practicable have the ability to use the on-site water system. Over time, Applicants expect that the LNG carriers that regularly visit the Bradwood Landing terminal will routinely use the on-site water system. However, to date, there are no LNG carriers configured to accept filtered ballast and cooling water from the on-site water system. Equipping LNG carriers with this system is best done during construction. If equipping is undertaken after construction, *i.e.*, through retrofitting, such retrofitting can only be done during the dry-docking of the LNG carriers that happens only twice every five years. Applicants expect that the LNG carriers that routinely visit the Bradwood Landing terminal will be constructed or retrofitted to be compatible with the on-site water system, however, this process will take time.

Applicants have proposed, as part of the Project, to provide reasonable contract incentives to encourage equipping or retrofitting LNG carriers for compatibility, but it is not in Applicants' control to require *all* LNG carriers to retrofit. Despite these reasonable contract incentives proposed by Applicants, it is not likely that all LNG carriers making deliveries to the Bradwood Landing terminal under spot market contracts, short term contracts, or as replacement carriers to long term contracts will be equipped for the on-site water system. This is because it is likely that these spot cargoes will be diverted to the Bradwood Landing terminal from previously planned destinations at other terminals. It was never the Applicants' proposal to guarantee 100% use of the on-site water system as Mitigation Measure 24 appears to require, nor is such a guarantee possible.

A8-1  
cont'd**II. RECOMMENDED MITIGATION MEASURE 24 DOES NOT BEAR A RATIONAL RELATIONSHIP TO THE PROJECT**

Mitigation Measure 24, as proposed in the DEIS, reflects a misunderstanding of Applicants' Project proposal, and establishes (or at a minimum implies) a requirement of usage of the on-site water system by 100% of the LNG carriers arriving at the Bradwood Landing terminal. For the reasons stated above, this mitigation condition would be impractical because it could never be satisfied, and as such it was not nor rationally could have been proposed by Applicants. Indeed, Applicants believe that the lack of a logical relationship between recommended Mitigation Measure 24 and the Applicants' Project proposal could place such a condition at risk of being deemed arbitrary and capricious under the Administrative Procedure Act.<sup>4</sup> In addition, there is a question as to whether the Commission could ultimately require such modifications in light of international treaties.<sup>5</sup> Recommended Mitigation Measure 24, therefore, is neither desirable from an agency perspective, nor is it necessary to ensure mitigation of Project impacts on Listed

<sup>4</sup> See *Missouri Pub. Serv. Comm'n v. FERC*, 337 F.3d 1066 (D.C. Cir. 2003) (rejecting the Commission's approval of initial rates as both arbitrary and unsupported by substantial evidence); *Great Lakes Transmission Ltd. P'ship v. FERC*, 984 F.2d 426, 432–34 (D.C. Cir. 1993) (finding a condition included in a certificate authorizing expansion of a pipeline unreasonable because the Commission did not provide a full and rational explanation supporting the condition); *Ozark Gas Transmission Sys. v. FERC*, 897 F.2d 548, 551–53 (D.C. Cir. 1990) (rejecting a condition attached to a blanket certificate authorization because the condition was patently unreasonable). The Court found that the condition made it impossible for Ozark to compete in the market and that the Commission "had used a sledgehammer to accomplish [its objective], instead of an instrument suitable to the purpose." *Id.* at 552.

<sup>5</sup> Federal agencies, in this instance FERC, do not have the authority to mandate that foreign-flagged vessels be retrofitted, and similarly, the agency's authority to condition Applicant's project on this basis may also be in question. International treaties governing the design, equipment, and construction of vessels specifically require the signatory state to honor certificates of compliance issued by foreign states. U.S. courts have recognized the need for consistency and reciprocity regarding international agreements, particularly in regard to foreign-flag vessels. See, e.g., *Ray v. Atlantic Richfield Co.*, 435 U.S. 151 (1978); *U.S. v. Locke*, 529 U.S. 89, 110–12 (2000).

A8-1  
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Species. As discussed below, Applicants have proposed an innovative and sound approach to the protection of listed salmon.

**III. APPLICANTS' PROPOSED ON-SITE WATER SYSTEM COUPLED WITH THE PERFORMANCE STANDARDS ARE PROTECTIVE OF LISTED SALMON.**

In order to bolster the mitigation potential of Applicants' on-site water system and corresponding LNG carrier fit-out program, Applicants have proposed that two performance standards would be applicable to the Project. Applicants' performance standard proposals would be an innovation in LNG terminal operations and habitat protection, but they derive from the performance-based approach to salmon habitat protection followed by NOAA Fisheries in the Federal Columbia River Power System remand proceedings.<sup>6</sup> The performance standards will specify: (i) that all cooling water discharges from LNG carriers at the wharf will meet the proposed temperature performance standard; and (ii) a performance standard for entrainment of Listed Species. Both performance standards will have a monitoring component. Applicants will include these performance standards in their Applicant-Prepared Biological Assessment to be submitted to the Commission at the end of May 2008.

As noted above, Applicants have designed this performance standard approach following the NOAA Fisheries' approach in the Federal Columbia River Power System remand process. Applicants agree with NOAA Fisheries that performance standards can provide the necessary certainty to ensure protection of the species and to address the

<sup>6</sup> NOAA's National Marine Fisheries Service, Endangered Species Act - Section 7 Consultation Biological Opinion - Remand Draft, Consultation on Remand for Operation of the Federal Columbia River Power System, F/NWR/2005/05883 (Oct. 30, 2007) (revised and reissued pursuant to court order, *Nat'l Wildlife Fed'n v. NMFS*, Civ. No. CV 01-640-RE (D. Or. 2001)), <http://www.nwr.noaa.gov/Salmon-Hydropower/Columbia-Snake-Basin/Draft-BOs.cfm>.

A8-1  
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recent holding by the U.S. Court of Appeals for the Ninth Circuit that an applicant's proposal must be reasonably certain to occur and must therefore be within the applicant's control.<sup>7</sup> Applicants' on-site water system coupled with performance standards will provide protection for the listed salmon and satisfy the "reasonably certain to occur" standard as interpreted by the courts.

**IV. RECOMMENDED MITIGATION MEASURE 24 IS PREMATURE**

Applicants recognize that the Commission has a responsibility to fulfill under the National Environmental Policy Act ("NEPA") and are not suggesting that the Commission in any way abdicate this responsibility. However, the issue of listed salmon protection and the benefits of the on-site water system are being addressed as part of the consultation process with NOAA Fisheries pursuant to Section 7 of the Endangered Species Act.<sup>8</sup> NOAA Fisheries consultation with FERC will conclude with the issuance of a Biological Opinion by NOAA Fisheries describing the effects of the proposed action on Listed Species or their critical habitat and determining whether the proposed action would cause jeopardy to the species or harm to their critical habitat.<sup>9</sup> NOAA Fisheries may conclude no jeopardy and include reasonable and prudent measures. If the Biological Opinion finds that the proposed project may jeopardize the species or

<sup>7</sup> *National Wildlife Federation v. NMFS*, 481 F.3d 1224 (9th Cir. 2007)(The Ninth Circuit upheld the invalidation of NMFS' 2004 Biological Opinion for the Federal Columbia River Power System, stating that NMFS' failure to ensure that certain proposed mitigation measures, including promises to implement removable spillway weirs, were conditioned on availability of Congressional appropriations).

<sup>8</sup> 16 U.S.C. § 1536 (2007).

<sup>9</sup> 16 U.S.C. § 1536(b)(3)(A).

A8-1  
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adversely modify their habitat, NOAA Fisheries must work with the Applicant and FERC to develop a “reasonable and prudent alternative” to avoid jeopardy.<sup>10</sup>

NOAA Fisheries has not yet issued its Biological Opinion containing its analysis of the potential threat to Listed Species and any necessary “reasonable and prudent alternatives,” thus it is premature for FERC to establish a requirement that 100% of the LNG carriers servicing the Bradwood Landing terminal be equipped for use with the on-site water system. NOAA Fisheries’ Biological Opinion may recognize different risks to species resulting from the Project than those identified by FERC and/or may identify reasonable and prudent measures and/or reasonable and prudent alternatives necessary to avoid these risks entirely different than or incompatible with those identified by FERC.

While Applicants acknowledge that it is generally true that FERC is not bound to follow the recommendations of a Biological Opinion,<sup>11</sup> in the context of threatened or endangered species and an incidental take statement, both Commission and U.S. Supreme Court precedent recognize that it is prudent for FERC to defer to the conclusions of the agency principally charged with administering the ESA—NOAA Fisheries in the present case.<sup>12</sup>

For example, in *Pacific Gas and Electric Co.* (Potter Valley Project), the Commission in the Final Environmental Impact Statement (“FEIS”) disagreed with

<sup>10</sup> *Id.*

<sup>11</sup> *Pacific Gas and Electric Co.*, 107 FERC ¶ 61,232, at P 16 (“PG&E is correct that the law does not require the Commission to adopt a reasonable and prudent alternative or the RPMs [reasonable and prudent measures] which implement the incidental take statement.”).

<sup>12</sup> *See Bennett v. Spear*, 520 U.S. 154, 169 (1997) (“[W]hile the Service’s Biological Opinion theoretically serves an “advisory function,” in reality it has a powerful coercive effect on the action agency.”); *City of Tacoma, Wash.*, 110 FERC ¶ 61,239, P 7, n.4 (2005); *Pacific Gas and Electric Co.*, 106 FERC ¶ 61,065, order on reh’g, 107 FERC ¶ 61,232 (2004).

A8-1  
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NOAA Fisheries' Biological Opinion with respect to what operational and physical modifications to the project were required to benefit federally-threatened salmonids, "but concluded that in light of NOAA Fisheries' status as the agency principally charged with administering the ESA with respect to anadromous fishes, and the essentially mandatory nature of an incidental take statement, the Commission has no real choice but to amend the license consistent with the Biological Opinion."<sup>13</sup> Similarly, because NOAA Fisheries is the agency principally charged with administering the ESA with respect to the Listed Species in the Columbia River, the Commission should not make any final decisions about appropriate mitigation requirements until NOAA Fisheries, the agency that has the relevant expertise, has the opportunity to fully evaluate the Project and advise what measures it feels are necessary to protect listed salmon. Mitigation Measure 24, as proposed in the DEIS, is premature because it proposes a standard that cannot be met, before any input from the resource agencies with relevant expertise is even presented.

In addition to being appropriate,<sup>14</sup> reasoned deference to the Biological Opinion is prudent from an administrative perspective because an agency that deviates from a Biological Opinion bears a dual burden of "articulating in its administrative record its reasons for disagreeing with the conclusions of a biological opinion"<sup>15</sup> and establishing that its actions will not result in jeopardy and will adequately protect Listed Species.<sup>16</sup>

The Commission and the U.S. Supreme Court both recognize that an action agency (FERC, in the instant case) that disregards an incidental take statement does so at

<sup>13</sup> 107 FERC ¶ 61,223 at P 9.

<sup>14</sup> *Id.* at P 21 ("It is appropriate for an agency to show reasoned deference to the ESA agencies with regard to the interpretation of their Joint Regulations and documents associated therewith.")

<sup>15</sup> *Bennett*, 520 U.S. at 169 (citing 51 Fed. Reg. 19,956 (1986)).

<sup>16</sup> 107 FERC ¶ 61,223 at P 16.

A8-1  
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its own peril because any person who knowingly takes an endangered or threatened species is subject to substantial civil and criminal penalties, including imprisonment.<sup>17</sup> Therefore, rather than setting the stage for an inconsistent result with NOAA Fisheries, the prudent course of action is to defer establishment of any FERC mitigation condition until NOAA Fisheries proposes the measures it believes are required to ensure that sufficient protections for listed salmon are implemented by Applicants.

**V. RECOMMENDED MITIGATION MEASURE 24 SHOULD BE MODIFIED BEFORE ISSUANCE OF THE FINAL ENVIRONMENTAL IMPACT STATEMENT OR INCORPORATION INTO THE COMMISSION'S AUTHORIZATION**

For the reasons stated above, Applicants respectfully request that FERC modify Mitigation Measure 24, as proposed in the DEIS, before issuance of the FEIS and incorporation thereof in any authorization by the Commission for the Project. Applicants propose the following substitute for recommended Mitigation Measure 24:

- 24. Prior to the issuance of a Biological Opinion by NOAA Fisheries, NorthernStar shall consult informally with NOAA Fisheries, as appropriate, in the development of proposed measures for mitigation of impacts on federally listed endangered species. After issuance of a Biological Opinion and prior to operation of the LNG terminal, NorthernStar shall prepare a plan, for review and written approval of the Director of OEP, setting forth the mitigation measures it intends to take with respect to the Biological Opinion. At the same time, copies of the plan shall be served upon the agencies consulted. NorthernStar shall allow a minimum of 30 days for the consulted agencies to comment on the plan.

After issuance of a Biological Opinion and prior to operation of the LNG terminal, NorthernStar shall file for the review and written approval of the Director of OEP a copy of a monitoring plan. At the same time, copies of the monitoring plan and schedule shall be served upon the agencies consulted. NorthernStar shall allow a minimum of 30 days for the consulted agencies to comment on the plan. Any written comments on the

<sup>17</sup> 107 FERC ¶ 61,223 at P 16; *Bennett*, 520 U.S. 154, 170.

A8-1  
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monitoring plan received by NorthernStar from the consulted agencies shall be filed with the Commission.

If based on the results of the monitoring, NorthernStar determines that changes in project structures are necessary to protect the relevant federally listed endangered species covered by the consultation, then NorthernStar shall submit a schedule to the Commission for approval for implementing the specific changes in project structures. At the same time, copies of the schedule shall be served upon the agencies consulted.

The Commission reserves the right to require modification of any plans or schedules.

Applicants' proposed Mitigation Measure, above, allows for NOAA Fisheries substantive input on protective measures for listed salmon, reasonable evaluation of Applicants' proposed performance standard proposal, and full FERC oversight of all applicant-proposed mitigation measures. It also avoids the administrative and procedural deficiencies that may result from Mitigation Measure 24 as proposed in the DEIS.

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VI. CONCLUSION

Wherefore, the Applicants respectfully request that the Commission modify recommended Mitigation Measure 24 as requested herein, and takes such other actions as may be consistent with this submission.

Respectfully submitted,



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Counsel for NorthernStar Energy  
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April 8, 2008

CERTIFICATE OF SERVICE

I hereby certify that I have this day caused a copy of the foregoing document to be served upon each person designated on the official service list compiled by the Federal Energy Regulatory Commission in these proceedings.

Dated this 8th day of April 2008.

  
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**Applicant**





*Bradwood Landing LLC and NorthernStar Energy LLC  
FERC Docket Nos. CP06-365-000, et al.*

**NorthernStar Natural Gas  
Bradwood Landing**

4/23/2008

This is the entire list of Species from the Table of Contents from Caretta et al. 2007.  
This does not include Angliss and Outlaw's list of species except for the sea otter,  
north pacific right whale, and gray whale.

PINNIPEDS	DEIS Discusses	Comments
1. California Sea Lion	Yes	
2. Harbor Seal	Yes	
3. Northern Elephant Seal	briefly	
4. Guadalupe Fur Seal	No	not likely off WA/OR based on distribution discussed in Caretta
5. Northern Fur Seal	briefly	
6. Hawaiian Monk Seal	No	not likely off WA/OR based on distribution discussed in Caretta
7. Steller Sea Lion	Yes	
1. Sea Otter (not in Caretta, but in Angliss and Outlaw)	briefly	brief sentences added, perhaps put in species considered but removed from further analysis?
<b>CETACEANS</b>		
<b>Baleen:</b>		
1. Humpback Whale	Yes	
2. Blue Whale	Yes	
3. Fin Whale	Yes	
4. Sei Whale	Yes	
5. North Pacific Right (not in Caretta, but in Angliss and Outlaw)	Yes	This whale is NOT common off WA. Last sighting was 13 years ago. This will appear in updated species presence text.
6. Gray Whale (Not in Caretta, but in Angliss and Outlaw)	Yes	
<b>Toothed whales, dolphins, and porpoises:</b>		
1. Harbor Porpoise	No	likely off WA and OR
2. Dall's Porpoise	No	likely off WA and OR
3. Pacific White Sided Dolphin	No	
4. Risso's Dolphin	No	
5. Bottlenose Dolphin	No	
6. Striped Dolphin	No	
7. Short-Beaked Common Dolphin	No	
8. Long-Beaked Common Dolphin	No	
9. Northern Right-Whale Dolphin	No	likely off WA and OR
10. Killer Whale (toothed whale)	Yes	discuss resident only, not transient which are frequently present off Columbia mouth
11. Short-Finned Pilot Whale	No	
12. Baird's Beaked Whale	No	
13. Mesoplodont Beaked Whales	No	
14. Cuvier's Beaked Whale	No	
15. Pygmy Sperm Whale	No	
16. Dwarf Sperm Whale	No	
17. Sperm Whale (toothed whale)	Yes	
18. Bryde's Whale	No	
19. Minke Whale	No	

# Applicant

K-1169