

Statement of Basis

**Permit to Construct No. P-2016.0002
Project ID 61645**

**Northwest Foam Products
Twin Falls, Idaho**

Facility ID 083-00063

Final

**February 26 2016
Tom Burnham 
Permit Writer**

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01. et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
Btu	British thermal units
CAA	Clean Air Act
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
ft	foot (feet)
HAP	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lbs	pounds
lb/hr	pounds per hour
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PC	Permit condition
PM	particulate matter
PM _{2.5}	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
scf	standard cubic feet
SCL	significant contribution limits
SO ₂	sulfur dioxide
SO _x	sulfur oxides
T/yr	tons per consecutive 12 calendar month period
T/mo	tons per month
T2	Tier II operating permit
TAP	toxic air pollutants
VOC	volatile organic compounds

FACILITY INFORMATION

Description

Northwest Foam Products, Inc. produces expanded polystyrene (EPS) bead products such as block foam insulation, packaging materials, and architectural materials. The processes utilized in the production of these foam products include bead pre-expansion, drying, prepuff aging, block molding, and product aging. The primary pollutant emitted from the process is the volatile organic compound (VOC) pentane.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

November 15, 1996	Tier II Operating Permit No.083-00063 issued to permit to the facility to limit emissions below major source levels. (S)
August 18, 2003	Renewed Tier II Operating Permit No.T2-030406 issued to permit whole facility and limit emissions below major source thresholds. This permit expired on August 18, 2008.(S)
February 2, 2009	DEQ issued final T2-2008.0177 to Northwest for the renewal of the facility's Tier II operating permit (will be superseded by this permit action)

Application Scope

The facility has requested to convert the existing Tier II operating permit to a permit to construct. No other modifications were requested by the facility.

Application Chronology

November 05, 2015	DEQ received a letter from Northwest requesting to convert permit type from Tier II operating permit to PTC.
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EMMISSIONS/REGULATORY ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID No.	Sources	Control Equipment	Emission Point ID No.
1	EPS Expansion Process	None	Process equipment
2	Boiler Manufacturer: Superior Model: 6-5-750 Serial No.: 1231 Rated heat capacity: 5.021 MMBtu/hr; 5175 lbs steam/hr Fuel: Natural gas Date installed: 1993 Stack height: 12 feet (ft) Stack diameter: 1.16 ft	None	Boiler Stack

Emission inventory was developed for the EPS Expansion Process and the natural gas-fired boiler and is contained in the T2-2008.0177 Statement of Basis dated January 28, 2009. For this permitting action of converting the permit from T2 to PTC, toxic, hazardous, and criteria emissions have not changed. Additionally, there are no newly applicable state or federal requirements. The Regulatory Review provided in the January 28, 2009 T2-2008.0177 Statement of Basis that supports issuance of the Tier II operating permit does not change as a result of changing this Tier II operating permit to a permit to construct and is not repeated in this statement of basis.

The Tier II operating permit is being converted to a permit to construct in accordance with the DEQ's Standard Operating Procedure for converting Tier II operating permits to permits to construct.

Ambient Air Quality Impact Analyses

No modeling is required for this permit because there is no emissions increase. Additionally, the pollutant of concern for this permit is VOC emissions, and there is no modeling required for the VOC emissions.

Permit Conditions Review

This section describes the permit conditions for this initial permit or only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

There are no new permit conditions resulting from this permit action, and "SOP – Existing T2 to PTC Conversion" internal guidance document was followed.

The 13T/mo limitation on VOC (see Appendix A) in permit condition 3.4 was removed because it was an unnecessary restriction. The 90T/yr for 12 consecutive months remains the same and is adequate for limiting the facilities potential to emit to under 100T/yr VOC without a need for a monthly limitation. Likewise, the corresponding 15.3 T/mo operating limit was also removed.

Also updated permit condition 3.8 to match the operational requirement in permit condition 3.4 for calculating the total VOC for any consecutive 12 month period.

Existing permit condition 3.9 was deleted. It required keeping records of calculations performed as required by the permit and this was redundant with the general provisions record keeping requirements.

Appendix B contains an excerpt from the earlier permit 1996 T2 083-00063 and shows the origin of the 90T/yr limit, as well as the allowed 15% pentane retention in product citing OAQPS document "Control of VOC Emissions From Polystyrene Manufacturing" for future reference.

PUBLIC REVIEW

Public Comment Opportunity

Because this permitting action does not authorize an increase in emissions, an opportunity for public comment period was not required or provided in accordance with IDAPA 58.01.01.209.04.

APPENDIX A– 2009 PERMIT NUMBER T2-2008.0177, PART 4

AIR QUALITY TIER II OPERATING PERMIT NUMBER: T2-2008.0177		
Permittee:	Northwest Foam Products, Inc.	Facility ID No. 083-00063
Location:	Twin Falls, Idaho	

4. SUMMARY OF EMISSION RATE LIMITS

Table 4.1 provides a summary of all emission rate limits required by this permit.

Table 4.1 SUMMARY OF EMISSION LIMITS^a - (TONS/MONTH) and ANNUAL^b (T/YR)

Source Description	VOC	
	T/month	T/yr
EXP Expansion Process	13	90

^a As requested by the permittee.
^b As requested by the permittee. The permittee applied for a Tier II operating permit in order to maintain synthetic minor status and avoid major source permitting

APPENDIX B- 1996 T2 083-00063, EMISSIONS ESTIMATES

Northwest Foam Products, Inc. - TECH MEMO
 August 30, 1996
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2. Emission Estimates

An emission estimate for the facility was performed on the boiler and EPS manufacturing process. Estimates were performed only for volatile organic compounds (VOCs) because the facility is major only for VOCs. Initial estimates for the 5,021 million BTU per hour boiler (see Appendix A) showed that annual VOC emissions were negligible (i.e., less than 2 tons). Estimates of VOC emissions from the manufacturing process are given in Appendix A. Please note that this VOC analysis is based on the pentane content of the raw bead. Pentane is the blowing agent currently used in the raw bead. No emission estimates were performed for a blowing agent considered as a toxic air pollutant (TAP). The introduction of a TAP blowing agent, or blowing agent partially made up of a TAP could be considered a modification under Section 200 of the Rules.

Originally, DEQ had concerns that Northwest Foam was major for methylene diphenyl diisocyanate (MDI). However, a review of calculations and supporting information submitted by Northwest Foam demonstrated that the facility was minor for MDI. The calculations submitted by the facility vary somewhat from the equations given in the Robert W. Powell documentation that was submitted to DEQ. The differences in the values are significant. However, the final numbers for both equations are well below the major facility applicability threshold. These calculations can be found in Appendix A.

VOC emission rate limits in the Permit are based on the assumptions that the average pentane (i.e., VOC) content, in percent by weight, left in the molded product after 48 hours is 15% of the original content and that the pentane content in the EPS beads would be the value given in the bead supplier's certificate of analysis (CA). The 15% retention was taken from the OAQPS document Control of VOC Emissions From Polystyrene Foam Manufacturing submitted as part of the application. It was also assumed that the percent by weight VOC content would not vary after 48 hrs. All calculations were based on these assumptions. Please note those EPS beads used in the process are considered the emission units in this process. This assumption was made because emissions are from the beads and not the process equipment.

Northwest requested a short-term emission rate limit of 13 tons VOC per month, and a long-term emission rate limit of 90 tons VOC per 12 month period. Based on the 15% retention mentioned above, short- and long-term operating requirements were determined. These requirements were determined as follows:

Determination of Operating Requirement

From Northwest Foam's May 30, 1996, request to limit their potential to emit of VOCs to 90 tons per year and given the 15% retention mentioned above, a total VOC content (105.9 tons per year) in the annual and monthly amount, respectively, of EPS beads was determined. The value, the operating requirement (OR), was determined as follows:

$$\begin{aligned} \text{OR} &= \text{ERL} * (1-0.15) \\ &= 105.9 \text{ tons per year} \\ &= 15.3 \text{ tons per month} \end{aligned}$$

where,	OR =	total VOC content in the annual and monthly amount of EPS beads used
	ERL =	requested annual emission rate limit (90 tons VOC per year, 13 tons VOC per month)
	(1-0.15) =	decimal percent of VOC in beads released to the atmosphere

Based on pentane content given in the CA, compliance with the short- and long-term operating requirements can be determined as follows:

VOC_{bead}	=	$M_{\text{EPS}} * \% \text{VOC}_{\text{CA}}$, where
VOC_{bead}	=	pounds (lbs.) of VOC contained in the pounds of EPS used;
M_{EPS}	=	pounds (lbs.) of EPS used;
$\% \text{VOC}_{\text{CA}}$	=	weight percent given by CA of the supplier of the given bead,