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IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF OREGON

NORTHWEST ENVIRONMENTAL DEFENSE CENTER, **CENTER FOR BIOLOGICAL DIVERSITY**, and **NEIGHBORS FOR CLEAN AIR**,

Plaintiffs,

v.

CASCADE KELLY HOLDINGS LLC, **d/b/a COLUMBIA PACIFIC BIO-REFINERY**, and **GLOBAL PARTNERS LP**,

Defendants.

Case No. 3:14-cv-01059-SI

OPINION AND ORDER

Janette K. Brimmer, EARTHJUSTICE, 705 Second Avenue, Suite 203, Seattle, WA 98104; Moneen S. Nasmith, EARTHJUSTICE, 48 Wall Street, 19th Floor, New York, NY 10005; Andrew M. Hawley, NORTHWEST ENVIRONMENTAL DEFENSE CENTER, 10015 SW Terwilliger Boulevard, Portland, OR 97219. Of Attorneys for Plaintiffs.

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Michael H. Simon, District Judge.

Plaintiffs Northwest Environmental Defense Center, the Center for Biological Diversity, and Neighbors for Clean Air (collectively "Plaintiffs") bring action under the citizen suit

provision in § 304 of the Clean Air Act ("CAA"), 42 U.S.C. § 7604. The defendants are Cascade Kelly Holdings LLC, doing business as Columbia Pacific Bio-Refinery ("CPBR"), and Global Partners LP (collectively "Defendants"). Plaintiffs allege that Defendants began construction and operation of a crude oil transloading terminal in Clatskanie, Oregon, (the "Facility") without first obtaining a federal Prevention of Significant Deterioration ("PSD") permit under § 165 of the CAA, 42 U.S.C. § 7475. The Court has bifurcated the liability and penalty portions of Plaintiffs' claims and now considers only Plaintiffs' request for relief enjoining Defendants from further construction and operation of the Facility without a PSD permit. From October 6 to October 8, 2015, the Court held a bench trial.

Plaintiffs' position is that Defendants are required under the CAA to have a PSD permit because the Facility has the potential to emit 100 tons per year or more of volatile organic components, which contribute to the creation of ozone in the atmosphere. Facilities that meet or exceed the 100 tons-per-year threshold must comply with more rigorous pollution control requirements than facilities that do not meet this threshold. Instead of the PSD permit that Plaintiffs contend Defendants should have obtained, Defendants obtained a different permit that allows the Facility to emit no more than 78 tons per year of volatile organic components. Plaintiffs argue that because of inaccurate emissions calculations and unrealistic assumptions, Defendants cannot possibly comply with the regulatory limit of 78 tons per year of the relevant pollutant. Plaintiffs further argue that Defendants lack the technology to measure the precise amount of pollutants the Facility actually emits. For these reasons, Plaintiffs argue, the Facility must have a PSD permit to operate lawfully and Defendants' current permit is insufficient. Whether Plaintiffs are correct is the question now before the Court.

Notably, Plaintiffs brought this lawsuit before Defendants obtained any permit for new construction at the Facility. Indeed, it appears that Plaintiffs' lawsuit may have prompted Defendants to seek and obtain the permit that they received from State of Oregon's Department of Environmental Quality ("DEQ"). By filing this lawsuit and then participating in the public comment process on draft permits for the Facility sought by Defendants, Plaintiffs helped protect the environment by ensuring that Defendants' current permit limits Defendants to processing only 20 percent of the Facility's maximum throughput capacity, at least without first obtaining a PSD permit, and contains other environmentally protective restrictions on the Facility's operations. Thus, regardless of whether Plaintiffs prevail on the specific question now before the Court, Plaintiffs have already played an important role in ensuring that Defendants comply with applicable federal and state laws and environmental regulations. And that is one of the key roles that Congress envisioned for the citizen suit provision of the CAA.

The Court has considered Plaintiffs' argument and evidence that Defendants have a razor-thin margin of error for complying with the emissions limit of 78 tons per year of volatile organic compounds stated in its DEQ-issued permit. Additionally, the Court has considered Plaintiffs' argument that DEQ, which determined as part of the state permitting process that the Facility will emit no more than 78 tons per year of the relevant pollutants, could have imposed additional monitoring and recordkeeping requirements on Defendants. Had CPBR relied on any more generic emissions assumptions in its potential-to-emit calculations and had DEQ imposed any less stringent monitoring or testing provisions, the Court might have reached a different conclusion than it now does. Notwithstanding Plaintiffs' concerns about Defendants' compliance and DEQ's permitting process, the Court finds that Plaintiffs did not meet their burden in this case. Plaintiffs have not proven by a preponderance of the evidence that Defendants inaccurately

calculated the Facility's potential to emit, which is the foundation of the DEQ-issued permit. Thus, Plaintiffs have not shown that the Facility will emit at least 100 tons per year of volatile organic components, which is the threshold that would render Defendants subject to the more demanding PSD permitting requirements.

The Court has jurisdiction over this matter under 42 U.S.C. § 7604 and 28 U.S.C. §§ 2201 and 2202.[1] Having weighed and evaluated all of the evidence in the same manner that it would instruct a jury to do and having fully considered the legal arguments of counsel, the Court makes the following Findings of Fact and Conclusions of Law pursuant to Federal Rule of Civil Procedure 52(a).

FINDINGS OF FACT[2]

The Court finds the following facts by a preponderance of the evidence. Because the factual allegations underlying this controversy relate to the CAA and its related regulations, the Court begins with an examination of the applicable statutory and regulatory framework.

A. General Provisions of the CAA

Congress enacted the 1970 CAA "to protect and enhance the quality of the Nation's air resources" and "promote the public health and welfare and the productive capacity of [the Nation's] population." 42 U.S.C. § 7401(b)(1). The CAA creates "a federal framework for ensuring the nation's air quality." *California v. United States*, 215 F.3d 1005, 1007 (9th Cir. 2000). Congress, however, gave "[e]ach State . . . the primary responsibility for assuring air quality within the entire geographic area comprising such State." 42 U.S.C. § 7407(a). By requiring the Environmental Protection Agency ("EPA") to work with the states,

[1] The Court discusses additional jurisdictional matters below.

[2] Exhibits received in evidence at trial are referred to as "Ex." followed by the specific page number of that exhibit.

the CAA sets up "a model of cooperative federalism to achieve the statute's environmental goals." *Ass'n of Irritated Residents v. U.S. E.P.A.*, 790 F.3d 934, 937 (9th Cir. 2015).

The CAA requires EPA to formulate national ambient air quality standards ("NAAQS") for air pollutants. 42 U.S.C. §§ 7408-7409. EPA has thus far issued NAAQS for six pollutants: (1) particulate matter; (2) sulfur dioxide; (3) nitrogen oxides (with sulfur dioxide as the indicator); (4) carbon monoxide; (5) lead; and (6) ozone. *Util. Air Regulatory Grp. v. E.P.A.*, 134 S. Ct. 2427, 2435 (2014); 40 C.F.R. pt. 50 (2015). The NAAQS for ozone include ozone precursors, which are compounds that contribute to the formation of ozone in the atmosphere, such as non-methane organic gases and volatile organic compounds ("VOCs"). *See* 40 C.F.R. §§ 51.100(s), 52.21(b)(50). NAAQS set the maximum permissible airborne concentrations for the listed pollutants. 42 U.S.C. §§ 7408(a), 7409(a); *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 465 (2001).

Each state has primary responsibility for implementing the NAAQS within its borders by developing a State Implementation Plan ("SIP"), which is "subject to EPA review and, if inadequate, disapproval." *Hall v. U.S. E.P.A.*, 273 F.3d 1146, 1153 (9th Cir. 2001); *see* 42 U.S.C. § 7410. Every SIP must "include enforceable emission limitations and other control measures, means, or techniques" to attain the NAAQS, "as well as schedules and timetables for compliance." 42 U.S.C. § 7410(a)(2)(A). If EPA approves a SIP, the SIP "has 'the force and effect of federal law.'" *Safe Air For Everyone v. U.S. E.P.A.*, 488 F.3d 1088, 1097 (9th Cir. 2007) (quoting *Trs. for Alaska v. Fink*, 17 F.3d 1209, 1210 n.3 (9th Cir. 1994)).

1. PSD Program

The CAA also requires that states designate the areas within their borders that are in "attainment" and "nonattainment" of the NAAQS for each listed air pollutant. 42 U.S.C. § 7407(d)(1)(A). Attainment areas and nonattainment areas are subject to different regulations.

For areas that do not meet the NAAQS (nonattainment areas), Congress created New Source Review ("NSR") to prevent the addition of new sources of pollution. *Id.* §§ 7501-7515. For areas that meet the NAAQS (attainment areas), Congress enacted the PSD program. *See id.* §§ 7470-79. The federal PSD program is designed "to assure that any decision to permit increased air pollution in [an attainment area] is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process." *Id.* § 7470(5).

As part of the program, "[n]o major emitting facility on which construction is commenced after August 7, 1977, may be constructed in any area to which this part applies unless—(1) a [PSD] permit has been issued for such proposed facility in accordance with this part setting forth emission limitations for such facility which conform to the requirements of this part." *Id.* § 7475(a). EPA has clarified in its regulations: "No new major stationary source or major modification . . . shall begin actual construction without a [PSD] permit." 40 C.F.R. § 52.21(a)(2)(iii). To "[b]egin actual construction means, in general, initiation of physical on-site construction activities on an emissions unit which are of a permanent nature." *Id.* § 52.21(b)(11). A facility is "modified" when it undergoes "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted." 42 U.S.C. § 7411(a); *see id.* § 7479(2)(C) (incorporating the general definition of "modification" into the PSD statutory program).

The PSD program defines "major emitting facility," also known as a "major source," as a facility possessing the potential to emit either 100 tons per year or 250 tons per year of the regulated pollutant. The threshold depends on the facility's industry source category. *Id.*

§ 7479(1). Petroleum storage and transfer facilities with a total storage capacity exceeding 300,000 barrels are subject to the 100 tons per year threshold. *Id.* Major sources must obtain PSD permits and are subject to stricter regulatory controls than sources that do not fall under the definition of "major source." For example, major sources "must comply with technology-based emission standards requiring the maximum degree of reduction in emissions EPA deems achievable, often referred to as 'maximum achievable control technology' or MACT standards." *Nat'l Min. Ass'n v. U.S. E.P.A.*, 59 F.3d 1351, 1353 (D.C. Cir. 1995) (citing 42 U.S.C. § 7412(d)(1)-(2)) (footnote omitted).

Sources may, however, avoid the requirement to obtain a PSD permit by limiting their potential to emit ("PTE"). When EPA promulgated rules under the CAA, EPA defined "PTE" as "the maximum capacity of a stationary source to emit a pollutant *under its physical and operational design*." 40 C.F.R. § 51.165(a)(1)(iii) (emphasis added).[3] EPA treats as part of a source's design "[a]ny physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed." *Id.* The only caveat is that "the limitation or the effect it would have on emissions" must be "federally enforceable." *Id.* Under this rule, "[f]ederally enforceable means all limitations and conditions which are enforceable by the Administrator." *Id.* § 51.165(a)(1)(xiv). The D.C. Circuit has further clarified that these limitations and conditions must also include a state's or locality's controls when those controls are "effective as a practical matter." *Nat'l Min. Ass'n*, 59 F.3d at 1363. EPA's Environmental Appeals Board also has emphasized that a practically enforceable limitation is based on

[3] The U.S. Supreme Court explained, "The Clean Air Act regulates pollution-generating emissions from both stationary sources, such as factories and powerplants, and moving sources, such as cars, trucks, and aircraft." *Util. Air Regulatory Grp*, 134 S. Ct. at 2435. As in *Utility Air Regulatory Group*, this litigation concerns stationary sources.

"technically-accurate" information. *In Re Peabody W. Coal Co.*, 2005 WL 428833, at *8 (E.P.A. Feb. 18, 2005).

In both attainment and nonattainment areas, Congress also requires that major new sources in specific industries comply with New-Source Performance Standards ("NSPS"). These standards require use of the "best system of emission reduction" within the designated industry. 42 U.S.C. § 7411(a)(1). For new sources subject to NSPS, NSPS permitting requirements apply regardless of whether the sources must also comply with either NSR or PSD permitting requirements. *See Envtl. Def. v. Duke Energy Corp.*, 549 U.S. 561, 568 (2007) (describing the history of amendments and regulations to permit requirements in the CAA). Title V of the CAA consolidates the permitting requirements applicable to new major sources. *See* 42 U.S.C. §§ 7661-7661f. Although state permitting authorities issue the relevant permits, all permits for new major sources (collectively known as "Title V permits") are subject to EPA review and veto. *See id.* § 7661d; *Sierra Club v. Otter Tail Power Co.*, 615 F.3d 1008, 1011-12 (8th Cir. 2010); *Romoland Sch. Dist. v. Inland Empire Energy Ctr., LLC*, 548 F.3d 738, 742-43 (9th Cir. 2008).

2. Oregon's Implementation of the CAA and PSD Program

EPA conditionally approved Oregon's SIP on June 24, 1980, and then approved the SIP without conditions on November 5, 1981. 46 Fed. Reg. 54939-02; 45 Fed. Reg. 42265-01. DEQ administers Oregon's SIP. *See* Or. Admin. R. ("OAR") § 340-200-0040. As the CAA requires, Oregon has a PSD program. *See id.* § 340-202-0200(1) ("The purpose of [this Division] is to implement a program to prevent significant deterioration of air quality in the State of Oregon . . . .").[4] Under Oregon's SIP, a "federal major source" must go through the PSD permitting process. *Id.* § 340-224-0010. Oregon defines "federal major source" just as 42 U.S.C.

[4] Unless otherwise specified, citations to OARs are to the 2014 versions of regulations, which were applicable at the time DEQ issued the relevant permit to CPBR.

§ 7479(1) defines a "major emitting facility." *See* OAR § 340-200-0020(55)(y). Oregon separately defines a non-federal "major source" as "a source that emits, or has the potential to emit, any regulated air pollutant at a Significant Emission Rate" ("SER"). *Id.* § 340-200-0020(72)(a). For VOCs in attainment areas, the SER is 40 tons per year. *Id.* § 340-216-0020, Tbl. 2.[5] Major sources must obtain standard air contaminant discharge permits ("ACDPs"), and the requirements differ from those applicable to federal major sources. *Id.* § 340-216-0066.

The Oregon SIP also defines "PTE" in a way similar to the federal CAA. Under the Oregon SIP, PTE is "the lesser of: (a) The capacity of a stationary source; or (b) The maximum allowable emissions taking into consideration any physical or operational limitation . . . if the limitation is enforceable by the Administrator." *Id.* § 340-200-0020(100). The SIP clarifies, "This definition does not alter or affect the use of this term for any other purposes under the [Federal Clean Air Act.]" *Id.*

Oregon also assigns regulated facilities a plant site emission limit ("PSEL") to "[a]ssur[e] compliance with ambient air standards and Prevention of Significant Deterioration increments." *Id.* § 340-222-0020(2)(b). A facility's PSEL is "the total mass emissions per unit time of an individual air pollutant specified in a permit for a source." *Id.* § 340-200-0020(95). A facility's PSEL is "established on a rolling 12 consecutive month basis and *will limit the source's potential to emit*." *Id.* § 340-222-0043(3) (emphasis added). All ACDPs must contain a PSEL. *Id.* § 340-222-0020(1). When an applicant has a "potential to emit greater than or equal to the SER" and must thus use a source-specific PSEL,[6] the applicant's "initial source specific PSEL will be set

[5] Table 2 can be viewed at EPA, *EPA Approved Oregon Administrative Rules* 44, http://yosemite.epa.gov (last visited Dec. 30, 2015).

[6] DEQ allows sources to adopt "generic" PSELs, which do not require information inputs from the site of the specific source, when the source will emit below the SER of a pollutant. DEQ sets the generic PSELs for pollutants at one ton below the SER. Ex. 297 at 14; *see* David

equal to the source's potential to emit or netting basis, whichever is less." *Id.* § 340-222-0041(2).[7]

In DEQ's *Instructions for Using Air Contaminant Discharge Permit (ACDP) Application Forms*, DEQ also explains that applicants should include an "annual emission" based not on "the maximum capacity of the facility or the typical operating rate," but on "the maximum projected operating rate during the permit term." Ex. 297 at 11.[8] Sources that adopt PSELs to limit their PTE are also known as "synthetic minor sources." OAR § 340-218-0020 ("[A] source which would otherwise be a major source subject to this division may choose to become a synthetic minor source by limiting its emissions below the emission level that causes it to be a major source through limits contained in an ACDP . . . .").[9]

Monro, *Oregon Air Quality Permitting Fundamentals* 2 (Dec. 7, 2012), http://www.nwec.org/2012/images/pdfs/Presentations/3A_Monro.pdf (last visited Dec. 29, 2015).

[7] "Netting Basis" is "the baseline emission rate MINUS any emission reductions required by rule, orders, or permit conditions required by the SIP or used to avoid SIP requirements, MINUS any unassigned emissions that are reduced from allowable under OAR 340-222-0045, MINUS any emission reduction credits transferred off site, PLUS any emission increases approved through the New Source Review regulations in OAR 340 division 224 MINUS any emissions reductions required by subsection (g) of this section." OAR § 340-200-0020(76).

[8] DEQ's most recent regulations now state: "For sources with potential to emit greater than or equal to the SER, the source specific PSEL will be set equal to the source's potential to emit, netting basis or a level requested by the applicant, whichever is less, except as provided in section (3) or (4)." OAR 340-222-0041(2) (2015).

[9] Defendants argue that Oregon's SIP is unique because it allows sources to adopt PSELs that limit their potential to emit. Defendants also maintain that Oregon's PSEL provisions materially differ from other state programs that allow for "synthetic minor" permits. Defendants are incorrect. EPA regulations contemplate SIPs that allow sources to adopt synthetic caps on their potential to emit. Under 40 C.F.R. § 51.165(a)(1)(iii), a source may calculate its PTE in relation to "[a]ny physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed." *See also Peabody*, 2005 WL 428833, at *7 ("In many cases, a source may seek to limit its PTE, if possible, to avoid potentially more burdensome regulation in the future. In order to accomplish this, a facility may ask the permitting authority to impose enforceable limits on the source's capacity to emit.").

To ensure that a site does not exceed its PSEL, "[t]he permittee must monitor pollutant emissions or other parameters that are sufficient to produce the records necessary for demonstrating compliance with the PSEL." OAR § 340-222-0080(1). When applying for a permit, "[t]he applicant must specify . . . the method(s) for determining compliance with the PSEL. The Department [DEQ] will review the method(s) and approve or modify, as necessary, to assure compliance with the PSEL." OAR § 340-222-0080(4). EPA reviewed Oregon's PSEL rule and found "that it establishes limits on a source's PTE that are Federally enforceable and enforceable as a practical matter (with adequate requirements for monitoring, recordkeeping, and reporting in [OAR § 340-222-0080]) in accordance with EPA's guidance for limiting PTE." 68 Fed. Reg. 2897 (Jan. 22, 2003).

3. Citizen Suits

The CAA contains a citizen suit provision at 42 U.S.C. § 7604, which states that "any person may commence a civil action on his own behalf . . . (3) against any person who proposes to construct or constructs any new or modified major emitting facility without a permit required under part C of subchapter I of this chapter (relating to significant deterioration of air quality) . . . ." The purpose of a citizen suit provision "is to permit citizens to enforce [a statute] when the responsible agencies fail or refuse to do so." *San Francisco Baykeeper v. Cargill Salt Div.*, 481 F.3d 700, 706 (9th Cir. 2007). When a state agency charged with administering a permit program determines that no permit is required for an activity, a citizen may still bring suit

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Oregon's regulations refer to "synthetic minor sources" that have adopted physical or operational limitations. *See* OAR § 340-218-0020. Although no other state calls these limitations "PSELs," SIPs in other states contain provisions very similar to Oregon's. *See, e.g.*, 5 Colo. Code Regs. § 1001-5:3B.II ("A source that is voluntarily applying for a permit to create state-only or federally enforceable permit conditions, as appropriate, to limit the potential to emit criteria, pollutants, GHG or hazardous air pollutants may request to obtain such limits in a construction permit.").

against a private party for the unpermitted activity; any finding to the contrary "would frustrate the purposes" of a statute's "empowerment of citizen suit." *Ass'n to Protect Hammersley, Eld, & Totten Inlets v. Taylor Res., Inc.*, 299 F.3d 1007, 1012 (9th Cir. 2002).

As the Second Circuit has also noted: "[T]he very purpose of the citizens' liberal right of action is to stir slumbering agencies and to circumvent bureaucratic inaction that interferes with the scheduled satisfaction of the federal air quality goals." *Friends of the Earth v. Carey*, 535 F.2d 165, 173 (2d Cir. 1976). In the enforcement of the CAA scheme, "citizen suits play an important role . . . . The citizen suit provisions were designed not only to 'motivate government agencies' to take action themselves, . . . but also to make citizens partners in the enforcement of the Act's provisions." *Weiler v. Chatham Forest Products, Inc.*, 392 F.3d 532, 536 (2d Cir. 2004) (quoting *Wilder v. Thomas*, 854 F.2d 605, 613 (2d Cir. 1988)).

B. The Parties and the Permitting Process

Cascade Kelly Holdings LLC, doing business as CPBR, is a wholly-owned subsidiary of Global Operating LLC, which is a wholly-owned subsidiary of Global Partners LP. CPBR owns and operates the Facility located at 81200 Kallunki Road, Clatskanie, Oregon. At the Facility, CPBR transloads ethanol and Bakken crude oil[10] from railcars through an above-ground pipe to internal floating-roof[11] storage tanks. The Facility currently has two 90,500-barrel internal floating-roof storage tanks. From the storage tanks, CPBR pumps crude oil through another above-ground pipe to barges on the Columbia River for transport. The Facility's dock currently has the capacity to accommodate only one barge at a time.

[10] Bakken crude oil comes from the Bakken formation primarily in the Dakotas and Saskatchewan.

[11] Floating roofs are designed to always rest on the surface of the crude oil inside the tank in order to minimize vapor emissions.

On August 23, 2013, CPBR applied to DEQ for a standard ACDP. CPBR indicated in its permit application that it intended to increase the Facility's capacity to transload crude oil. CPBR proposed constructing four new 108,000-barrel internal floating-roof storage tanks, two new 36,000-gallon closed-system process tanks, and additional equipment to support the new tanks. CPBR also proposed constructing a vapor combustion unit ("VCU") to control emissions from barge loading operations.

In its application, CPBR requested a PSEL for various regulated air pollutants, including VOCs. For VOCs, CPBR asked for a PSEL of 78 tons per year, applicable to any consecutive 12-month period. CPBR intended the PSEL to act as a cap on the Facility's operating capacity during the life of the permit, thus allowing CPBR to avoid the more stringent PSD requirements imposed on facilities emitting at least 100 tons per year of VOCs.[12]

Because the Facility's VOC emissions are "fugitive" in nature (that is, VOCs are not emitted from a single source or via pipes or stacks), CPBR could not calculate a PSEL by directly conducting emissions testing or continuously measuring emissions to decide on an appropriate limit. CPBR thus had to rely on its own estimates and EPA AP-42 emissions factors and assumed emission control frequencies.[13] For example, CPBR assumed that it would

[12] The Facility is located in an attainment zone, making PSD rather than NSR requirements applicable. *See* OAR § 340-204-0010; Ex. 25 at 7.

[13] EPA AP-42 is EPA's multi-volume compilation of emissions factors for use by sources of pollutants and regulators to assess pollutant emissions, particularly in instances where direct measurement cannot be made. On EPA's website, it explains:

> An emissions factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. . . . Such factors facilitate estimation of emissions from various sources of air pollution. In most cases, these factors are simply averages of all available data of acceptable quality, and are generally assumed to

operate 8,760 hours per year (24 hours per day for 365 days) and process 1.8396 billion gallons of crude oil per year.[14] CPBR also stated that it would accept crude oil with a maximum Reid Vapor Pressure ("RVP") of 12.75 pounds per square inch ("psi").[15] CPBR further assumed 98.7 percent capture of emissions during barge loading based on AP-42, Chapter Five, Section Two ("AP-42 5.2"). For the crude oil in storage tanks, CPBR assumed a liquid molecular weight of 207 pounds per pound-mole ("lbs/lb-mole"), a vapor molecular weight of 50 lbs/lb-mole, and an average storage temperature of 53.57 degrees Fahrenheit. Additionally, CPBR relied on an EPA software program called "TANKS" to calculate air pollutant emissions expected from

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> be representative of long-term averages for all facilities in the source category (i.e., a population average).
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> The general equation for emissions estimation is:
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> E = A x EF x (1-ER/100)
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> where:
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> E = emissions;
>
> A = activity rate;
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> EF = emission factor, and
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> ER =overall emission reduction efficiency percentage

See EPA, *Emissions Factors & AP 42*, Compilation of Air Pollutant Emission Factors (Sept. 10, 2015), http://www3.epa.gov/ttn/chief/ap42/index.html (last visited Dec. 29, 2015).

[14] During the testimony, the parties at times rounded this number to 1.84 billion gallons per year. DEQ has also rounded this number to 1.84 billion gallons in some documents. *See, e.g.*, Ex. 214 at 12.

[15] Vapor pressure indicates the volatility of a substance. RVP measures the absolute vapor pressure exerted by a liquid at 100 degrees Fahrenheit. By always measuring at the same temperature, RVP gives a basis for comparison among various liquids. In contrast, True Vapor Pressure ("TVP") measures the vapor pressure of a liquid under actual conditions. An RVP of 12.75 psi corresponds to a TVP of 11.12 psi at approximately 64 degrees Fahrenheit. Dkt. 30 at 20 n.38; Dkt. 38-1 at 12.

various parts of the crude oil transloading operation. In particular, CPBR used TANKS to calculate emissions from the storage and process tanks and from valves, pipes, fittings, and similar emission points.

In February 2014, DEQ presented a draft ACDP for public review and comment. On May 5, 2014, Plaintiffs, which are three environmental non-profit groups consisting of members who themselves have standing to bring this action, submitted comments to DEQ. DEQ provided written responses to the public comments, finding that the comments did not identify any issues that would prevent CPBR from complying with air quality regulatory requirements and regulatory limitations enforceable by DEQ. In its responses, DEQ stated that the proposed ACDP "include[d] appropriate and sufficient monitoring, recordkeeping and reporting requirements to allow CPBR and DEQ to verify the company's compliance status." DEQ further stated that "the PSELs being established in this permit in accordance with the PSEL rules in OAR 340 Division 222, are enforceable and establish that the facility will emit less than 100 tons per year of any regulated pollutant." Accordingly, DEQ concluded that the PSEL for VOCs contained in the ACDP application would prevent the Facility from qualifying as a new "federal major source," which is a source that emits more than 100 tons per year of VOCs and requires a separate permit.

C. The Permit

DEQ issued the ACDP to CPBR on August 19, 2014.[16] The ACDP adopted CPBR's calculations and set the cap for VOCs at 78 tons per year. The permit prohibited CPBR from storing crude oil with a monthly average TVP of 11.12 psi or greater. The ACDP also set forth specific emissions standards, operation and maintenance requirements, compliance

[16] The ACDP issued by DEQ is 05-0023-ST-01.

demonstration requirements, monitoring and recordkeeping requirements, reporting requirements, and applicable emissions factors. For example, the permit required CPBR to monitor the quantity of crude oil it received into storage and loaded onto barges, the number of roof landings for each tank,[17] results of monthly leak detection evaluations, monthly compliance calculations for the PSEL, and the monthly average TVP of the crude oil stored at the Facility.

In Condition 2.5, the permit also required CPBR to use a vapor collection system when loading barges. The permit gave CPBR four options for demonstrating that barges are "vapor tight" before loading. Under the permit, CPBR could: (1) maintain documentation showing a pressure test compliant with 40 C.F.R. § 63.565(c)(1) for determining vapor tightness of marine vessels loaded at positive pressure; (2) maintain documentation showing a leak test complaint with 40 C.F.R. § 63.565(c)(2) for determining vapor tightness of marine vessels loaded at positive pressure; (3) perform a leak test during loading using EPA Method 21 for determining vapor tightness of marine vessels loaded at positive pressure;[18] or (4) ensure negative pressure during loading with a measured pressure vacuum of "no less than 1/2 inch of water." The permit stated that CPBR "must design and operate its marine vessel vapor collection system to collect displaced VOC vapors during the loading of marine tank vessels."

DEQ did not specifically state what emissions capture efficiency it assumed for barge loading. DEQ did, however, expressly adopt the emissions factor that CPBR used when CPBR assumed a 98.7 percent emissions capture during barge loading. CPBR used an emissions factor

[17] "Roof landings" occur when the floating roof of a storage tank lands on the legs of the tank due to emptying of the tank's contents. Dkt. 30 at 37.

[18] Plaintiffs' expert witness stated that EPA Method 21 refers to "VOC sniffers."

of 0.0172 lb/kgal for loadout fugitive leaks based on AP-42 5.2, and DEQ similarly used an emissions factor of 0.017 lb/kgal for loadout fugitive leaks.[19]

DEQ also issued a report concerning the ACDP that discussed the requirements for barge loading and the applicable standards. The report stated:

> Although 40 C.F.R. Part 63, Subpart Y—"*National Emission Standards for Marine Tank Vessel Loading Operations*," is not applicable to the proposed source . . . all marine vessels loaded at the facility have and will meet the same vapor tightness requirements as specified in Subpart Y. The permittee will document and maintain records of vessel vapor tightness and/or negative pressure loading events.

Subpart Y specifies Maximum Achievable Control Technology ("MACT") standards. *See* 40 C.F.R. § 63.560. Subpart Y also defines a "vapor-tight marine vessel" as "a marine tank vessel that has demonstrated within the preceding 12 months to have no leaks." 40 C.F.R. § 63.561. DEQ concluded that other Subpart Y regulations generally did not apply to the Facility because the Facility was not a major source subject to the state's PSD program. DEQ, however, also concluded that NSPS Subpart Kb—setting forth federal performance standards for the emissions control technology used by volatile organic liquid storage vessels—applied to the Facility. *See* 42 U.S.C. § 7411(1); 40 C.F.R. §§ 60.110b-60.117b.

[19] In a letter to Plaintiffs, one of CPBR's consultants stated that "[t]he inherent design of the facility is to capture 100% of barge vapors." CPBR, however, used 98.7 percent in its 2013 ACDP application. In its August 19, 2014 response to comments, DEQ indicated that it assumed "all barges loaded to be vapor tight and all vapor produced by vessel loading controlled by the John Zink vapor recovery unit (100% capture efficiency)." When questioned about the DEQ response, Defendants' expert witness at trial, Mr. Chad Darby, explained that he believed that "100% capture efficiency" referred to assumptions made in a previous permit issued to CPBR, not ACDP 05-0023-ST-01. The 100 percent efficiency may also refer to the efficiency of the vapor recovery unit itself rather than the collection process as a whole. DEQ referred to a separate control efficiency of the vapor recovery unit in its report concerning the ACDP. In the report, DEQ noted that the facility would capture vapors from barge loading using "a vapor recovery unit or thermal oxidizer" and that "[t]he thermal oxidizer will operate with an operating temperature of 2,200 degrees Fahrenheit and rated control efficiency of 99.5%."

On July 2, 2014, more than a month before the issuance of the ACDP, Plaintiffs commenced this lawsuit against Defendants. On October 17, 2014, Plaintiffs petitioned DEQ for reconsideration of its decision to issue the ACDP to Defendants. DEQ denied the petition. In denying the petition, DEQ explained: "The new permit includes PSELs that limit the PTE [Potential to Emit] and allowable emissions of the new terminaling facility."[20]

D. Witness Testimony at Trial

Plaintiffs assert that CPBR should have calculated its maximum PTE regardless of any voluntary limits on operational capacity. This maximum PTE, argue Plaintiffs, is well in excess of 100 tons per year of VOCs and thus makes the Facility a federal major source that requires a PSD permit. To the extent the PSEL of 78 tons per year serves as the Facility's PTE, Plaintiffs argue that the PSEL is not technically accurate or practically enforceable. According to Plaintiffs, CPBR proposed and DEQ adopted an inaccurate, unenforceable PSEL because of

[20] If the Facility operated at its full capacity without any physical or operational limitations, it could process 9.198 billion gallons of crude oil per year. *See* Ex. 19, App. B. No one disputes that at this level of throughput, the Facility's potential to emit would exceed 100 tons per year of VOCs. At the time Plaintiffs filed this lawsuit against Defendants, DEQ had not yet assigned a final, enforceable PSEL to the Facility, and thus, Plaintiffs were correct in asserting that the Facility constituted a federal major source of VOCs and thus required a PSD permit. Before DEQ issued the final permit containing the PSEL, Plaintiffs participated in several rounds of comments on multiple drafts of the permit. *See* Exs. 22-23, 210-214. The final permit limited the Facility to processing only 20 percent of its maximum throughput capacity and contained other restrictions on the Facility's operations. Thus, Plaintiffs already have accomplished a great deal. They have played the critical role of public watch-dog, helping to enforce what some have called the "social license," which is the "the extent to which a corporation is constrained to meet societal expectations and avoid activities that societies (or influential elements within them) deem unacceptable, whether or not those expectations are embodied in law." Neil Gunningham, Robert A. Kagan, and Dorothy Thornton, *Social License and Environmental Protection: Why Businesses Go Beyond Compliance*, 29 Law & Soc. Inquiry 307, 307 (2004).

errors CPBR made in calculating emissions for four primary sources: railcar unloading, tank storage, barge loading, and equipment leaks.[21]

1. Dr. Ranajit Sahu

In support of their arguments, Plaintiffs called Dr. Ranajit Sahu, Ph.D., to testify as an expert witness at trial. Dr. Sahu testified that he believed the facility had the potential to emit at least somewhere between 277.87 and 333.49 tons per year of VOCs. He separately discussed each of the potential sources of VOC emissions.

a. Railcar Unloading

Dr. Sahu testified that although he could not say exactly how many tons per year of VOCs the Facility emitted during railcar unloading, he believed the amount was greater than zero. Thus, CPBR wrongly omitted railcar unloading emissions from its calculations. Dr. Sahu based this conclusion on CPBR's standard operating procedures, which discuss venting railcars. He stated that he believed the standard operating procedures showed that CPBR vents VOCs to atmosphere when it unloads railcars. He also noted that he has never visited the Facility personally to observe railcar unloading.

b. Tank Storage

Dr. Sahu testified that he believed CPBR made many inaccurate assumptions and calculations regarding the emissions of the storage tanks at the facility. First, Dr. Sahu opined that CPBR should not have relied on the EPA software program TANKS to calculate emissions

[21] Although Plaintiffs' expert witness, Dr. Ranajit Sahu, devoted most of his report and testimony to these four sources, he also discussed possible emissions from storage tank cleanings, missing components, startups and shutdowns of equipment, and malfunctions. Dr. Sahu stated that although he could not calculate an emissions estimate for these sources, he believed that the emissions were greater than zero.

because the software is outdated and inaccurate. Instead, he asserted, CPBR should have used Differential Absorption Lidar ("DIAL"), which Dr. Sahu said was a new and more accurate technique for measuring emissions from storage tanks. Dr. Sahu acknowledged, however, that although EPA has accepted some DIAL reports, "EPA has not changed its methodology for TANKS yet."

Additionally, Dr. Sahu testified that even if CPBR did not err in using TANKS, CPBR failed to use Facility-specific input parameters in its TANKS calculations and inputted inaccurate values for vapor pressure, liquid and vapor molecular weight, and average temperature. For vapor pressure, CPBR assumed an RVP of 12.75 psi. Dr. Sahu stated that although Bakken crude has a minimum RVP of 3.60 psi, Bakken crude can have an RVP as high as 15.37 psi. Dr. Sahu testified that nothing in the Facility inherently limited storage to crude with an RVP of 12.75 psi and that all PTE calculations for VOCs should have used an RVP of at least 15 psi and possibly 15.4 psi.

For molecular weight, Dr. Sahu stated that CPBR assumed a liquid molecular weight of 207 lbs/lb-mole for crude oil with an RVP of 5 psi. According to Dr. Sahu, studies show Bakken crude can have a liquid molecular weight of between 250 and 284 lbs/lb-mole, particularly when the crude oil has a higher RVP. Dr. Sahu also stated that CPBR assumed a vapor molecular weight of 50 lbs/lb-mole. He testified that he believed CPBR should have taken samples of crude oil to confirm this value. He recommended using a range of 50 lbs/lb-mole to 110 lbs/lb-mole. Dr. Sahu did not cite literature supporting the 110 lbs/lb-mole alternative value.

Dr. Sahu further stated that CPBR used an inappropriate value for temperature. CPBR assumed an average storage temperature of 53.57 degrees Fahrenheit in its calculations, deriving

this temperature from weather information for Astoria, Oregon, provided in AP-42. Dr. Sahu testified that CPBR should have used the temperatures for Portland in AP-42. He further testified that CPBR should have based its monthly average temperature calculations on the average of the highest temperature each day in Portland as opposed to daily average temperatures.

Dr. Sahu also discussed emissions during roof landings for storage tanks. He testified that CPBR underestimated the number of annual roof landings. CPBR assumed only two roof landings per year at the facility. Dr. Sahu noted that although "it is CPBR's prerogative" to assume only two roof landings per, he found this limit "unenforceable" given the specifications in the permit.

c. Barge Loading

Dr. Sahu testified that CPBR made several errors regarding emissions during barge loading. Dr. Sahu stated that in CPBR's calculations, CPBR again used the same inaccurate values for vapor pressure, molecular weight, and temperature that it used when calculating emissions for the storage tanks. Moreover, Dr. Sahu emphasized that he believed CPBR overestimated the emissions capture efficiency percentage at barge loading. Dr. Sahu believed CPBR should have assumed 95 percent capture efficiency rather than 98.7 percent. This appears to be the most significant point in dispute. If Dr. Sahu is correct in using 95 percent as the capture efficiency, this change, by itself, would push the emissions calculations well past the threshold of 100 tons per year for being a federal major source. As will be shown below, CPBR's expert witness does not dispute this conclusion.

According to Dr. Sahu, the assumed capture efficiency of VOCs during barge loading constituted one of the biggest sources of error in CPBR's calculations. During barge loading, vapors from residual liquids are displaced as new liquid flows into the barge. New liquid also emits vapors. Under the Facility's operational plan, it is intended that these vapors will be

collected or captured via a hose and taken to the VCU for destruction, but some vapors still may escape. Dr. Sahu testified that DEQ initially assumed a capture efficiency of 100 percent. He testified that he believed that the ACDP application ultimately submitted to DEQ assumed 98.7 percent efficiency and that DEQ adopted that assumption. Based on his review of the application, Dr. Sahu believed that the 98.7 percent capture efficiency assumption came from AP-42 5.2-6, which gives capture efficiencies for tanker trucks, not barge loading. This section states:

> Vapors can also be controlled through combustion in a thermal oxidation unit, with no product recovery. . . . Control efficiencies for the recovery units range from 90 to over 99 percent, depending on both the nature of the vapors and the type of equipment used. However, not all of the displaced vapors reach the control device, because of leakage from both tank truck and collection system. The collection efficiency should be assumed to be 99.2 percent for tanker trucks passing the MACT-level annual leak test (not more than 1 inch water column pressure change in 5 minutes after pressurizing to 18 inches water followed by pulling a vacuum of 6 inches water). A collection efficiency of 98.7 percent (a 1.3 percent leakage rate) should be assumed for trucks passing the NSPS-level annual test (3 inches pressure change). A collection efficiency of 70 percent should be assumed for trucks not passing one of these annual leak tests.

Dr. Sahu testified that although measurements for barges are largely unavailable, assumptions for trucks do not translate perfectly to barges because trucks are much smaller. Additionally, he found no evidence that barges at the facility pass annual tests showing compliant levels of pressure loss. To the extent the permit requires CPBR to document that barges are "vapor tight," Dr. Sahu testified that the permit simply requires certificates issued in accordance with Coast Guard regulations and other EPA regulations dealing with safety and flammability. Dr. Sahu testified that the "vapor tightness" certificates do not indicate that barges cannot leak emissions into the atmosphere; "vapor tightness," according to Dr. Sahu, is a regulatory term of art that does not literally mean "vapor tight" in the engineering sense that would be applicable for measuring or controlling emissions. Dr. Sahu stated that he has seen no

documentation demonstrating that a specified level of vacuum is maintained during barge loading.

Dr. Sahu also noted that in a 2011 document, EPA provides a table with capture efficiencies for vapor collection procedures and systems. The document states: "Capture efficiency for the vapor collection system can be applied based on the leak check conducted for the tanker truck, railcar, and marine vessel." The table gives loading characteristics and leak check frequencies for tankers and then gives corresponding capture efficiencies. For a tanker undergoing an annual leak check per 40 C.F.R. Part 60, Subpart XX (for nongasoline), the table gives an assumed capture efficiency of 95 percent. For a tanker undergoing an annual leak check per 40 C.F.R. Part 60, Subpart XX (for gasoline), the table gives an assumed capture efficiency of 98.7 percent. Dr. Sahu asserted that based on the table, 95 percent was the most appropriate value for capture efficiency during barge loading at the facility, which does not transload gasoline.

Using an RVP of 15 psi, a temperature of 62 degrees Fahrenheit, a vapor molecular weight of 110 lbs/lb-mole, a throughput of 1.8396 billion gallons, and a capture efficiency of 95 percent, Dr. Sahu calculated that the annual emissions for barge loading alone is 138.73 tons per year, well in excess of the threshold for a federal major source. Even using CPBR's vapor molecular weight of 50 lbs/lb-mole but all of Dr. Sahu's other numbers, Dr. Sahu calculated that barge loading results in 84.63 tons per year of VOCs, which would still make the Facility a federal major source when added to emissions from other points according to CPBR calculations. Dr. Sahu did not present at trial a calculation for barge loading emissions in which he used all of CPBR's other values but simply changed the capture efficiency to 95 percent.

d. Equipment Leaks

Dr. Sahu stated that CPBR calculated emissions from equipment leaks by counting each type of component (such as valves and flanges) in each type of service and using an emissions factor for each type of component. CPBR then summed the various emissions. Dr. Sahu testified that he believed CPBR's count omitted some sources. He pointed to a footnote in the permit application that stated the calculations for equipment leaks did "not include rupture disk PRVs,[22] sealless design valves, welded connections, open-ended lines that are blind, capped, plugged or have a second valve, and closed-loop sampling equipment."

Dr. Sahu also pointed out a discrepancy between CPBR's component count in the permit application and the number of components checked in CPBR's monthly leak detection ("LDAR") reports. The ACDP application based emission calculations for equipment leaks on a count of 380 components, but a LDAR report included additional components, listing the component number as 1,458.

2. Mr. Chad Darby

To rebut Dr. Sahu's testimony regarding the accuracy of CPBR's calculations and the enforceability of the PSEL, Defendants presented as their expert witness Mr. Chad Darby, an associate and senior consultant at Golder Associates Inc. He discussed CPBR's calculations for the potential sources of emissions that Dr. Sahu criticized.[23]

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[22] "PRV" refers to "pressure relief valve." *See* Dkt. 30 at 17, 39; EPA, *Replace Burst Plates with Secondary Relief Valves*, 1 (2011), http://www3.epa.gov/gasstar/documents /replaceburst.pdf (last visited Dec. 29, 2015).

[23] For other miscellaneous potential sources of emissions, Mr. Darby stated that the VCU is started up and shut down with propane rather than crude oil and that there are no other pieces of equipment that have unique emissions associated with startups and shutdowns. Malfunctions are reported separately as excess emissions under Condition 7.1 of the ACDP.

a. Railcar Unloading

Mr. Darby stated that railcars do not result in emissions because the railcars are unloaded under neutral to negative (*i.e.* vacuum) pressure. If there is no positive pressure in the railcar, the railcars will not emit outward vapors. The Facility's standard operating procedures discuss venting a railcar by opening the pressure relief valve on the gauge, but this occurs only after a vacuum has developed in the head space of the railcar.

b. Tank Storage

For errors alleged in calculations of storage tank emissions, Mr. Darby discussed the TANKS software. He stated that EPA still allows emissions estimates based on TANKS and that DEQ still allows use of TANKS "as a compliance demonstration technique." The main functional concern with TANKS is simply that it does not function reliably on computers using certain operating systems such as Windows Vista or Windows 7. Additionally, Mr. Darby stated that he does not know of a single state that has completely disallowed use of TANKS. To the extent TANKS produces errors, he knows of only two ways the software does so: it generates some inaccurate information for heated tanks and uses an annual average temperature rather than a monthly average temperature. Mr. Darby stated that these inaccuracies did not affect CPBR's permit application because CPBR does not use heated tanks and calculated the potential to emit over an annual period rather than over a single month. Mr. Darby testified that EPA does not currently recommend DIAL for estimating emissions from a specific storage tank. Moreover, Mr. Darby testified that when he calculated emissions based on AP-42 emissions factors without using TANKS, he arrived at a slightly lower emissions estimate than the one in the ACDP application and permit.

Mr. Darby also testified that CPBR only used some of the defaults in the TANKS software, such as estimates for deck seam losses with a bolted deck when in fact the facility has

welded decks with no stub drains. According to Mr. Darby, the use of these defaults resulted in higher estimates of emissions rather than lower estimates because the defaults essentially penalize those who do not have less conservative site-specific data. Furthermore, many of the instances in which CPBR appeared to use the default number were merely coincidences—CPBR tanks are very similar to many other tanks in the country.

Mr. Darby went on to address why CPBR selected the vapor pressure, liquid and vapor molecular weights, and temperature values that it used in the permit application. Mr. Darby emphasized that the permit limits CPBR to storing crude with a TVP of 11.12 psi (corresponding to a RVP of 12.75 psi) and that the permit requires CPBR to monitor the vapor pressure of the crude oil it stores. Thus, the facility will not store crude oil with an RVP higher than 12.75 psi. According to Mr. Darby, the facility has never stored crude oil with a monthly average RVP exceeding 12.2 psi.

For liquid molecular weight, Mr. Darby stated that CPBR used the TANKS default of 207 lbs/lb-mole. He asserted that Dr. Sahu's calculations for liquid molecular weight incorrectly looked at only the heaviest portion of crude oil, compounds with ten or more carbon atoms in their structure. Virtually all the compounds in crude oil, stated Mr. Darby, have lower molecular weights.

Mr. Darby also discussed why the ACDP application relied on a vapor molecular weight of 50 lbs/lb-mole, corresponding to an RVP of 5 psi. Mr. Darby stated that the 50 lbs/lb-mole value came from AP-42 7.1. The table gives one vapor molecular weight for crude oil and demonstrates how vapor molecular weight is inversely proportional to vapor pressure. Mr. Darby testified that contrary to Dr. Sahu's assertion, a higher vapor pressure corresponds to a lower

vapor molecular weight. Mr. Darby also cited literature that supported an even lower vapor molecular weight than CPBR used.

Regarding temperature, Mr. Darby testified that an applicant may use the values provided in AP-42 to estimate a tank's annual average storage temperature. Where AP-42 does not provide an average monthly temperature for the applicant's city, the applicant may choose the "most applicable city." Mr. Darby testified that CPBR chose to use the monthly average for Astoria of 53.57 degrees Fahrenheit rather than the monthly average for Portland of 62 degrees Fahrenheit. According to Mr. Darby, the lower temperature more closely corresponded to temperatures at the facility, located in Clatskanie, Oregon. He stated that the National Climate Data Center estimated that the annual average temperature in Clatskanie was 49.9 degrees Fahrenheit between 1971 and 2000.

Finally, Mr. Darby stated that Condition 12.0 in the ACDP contains an emissions factor for storage tank roof landings and tank degassing that CPBR must use to demonstrate compliance. If the facility had more than two roof landings per year, those events would become part of the compliance calculation. The more landings the facility has, the less of other emitting activities it could have in a twelve-month period. The permit also requires CPBR to monitor the number of roof landings that occur.

c. Barge Loading

For the errors alleged by Dr. Sahu in the calculation of emissions during barge loading, Mr. Darby stated that he believed CPBR used appropriate assumptions, particularly with regard to capture efficiency. He testified that the ACDP imposes vapor-tightness conditions in Condition 2.5. Condition 2.5 requires the facility either to load barges under negative pressure or comply with testing standards in 40 C.F.R., Part 63, Subpart Y. According to Mr. Darby, these vapor-tightness standards, listed under *National Emission Standards for Hazardous Air*

Pollutants for Source Categories, are MACT standards. He emphasized that—as the DEQ explained in its report—federal and state regulations do not require a particular MACT standard for the facility, but DEQ nonetheless incorporated MACT vapor-tightness conditions into the ACDP. Because the facility must meet MACT-testing standards for barge loading, Mr. Darby believed that CPBR could have assumed a capture efficiency as high as 99.2 percent pursuant to AP-42 5.2-6. He testified that when issuing permits to similar facilities, DEQ sometimes assumes even 100 percent capture efficiency for barge loading.

Regarding some of Dr. Sahu's other concerns, Mr. Darby testified that this annual MACT pressure test is distinct from the ACDP option to load barges under negative pressure, which CPBR does not do, unlike railcars. Additionally, Mr. Darby testified that although most of the available capture efficiency data is for tanker trucks, the tanker data can apply to marine vessels. Indeed, testified Mr. Darby, marine vessels might have higher capture efficiencies than trucks because of the "greater level of scrutiny" that goes into ensuring vapor tightness of marine vessels. Unlike leaks from a truck, leaks from a barge can flow directly into the river system, making regulators and workers more vigilant about emissions.

Mr. Darby went on to testify that even though CPBR could have assumed 99.2 percent capture efficiency, CPBR used the more conservative 98.7 percent from Table 9-5 of EPA's *Emissions Estimation Protocol for Petroleum Refineries*, the same table discussed by Dr. Sahu. Mr. Darby stated that he believed 98.7 percent was more appropriate than 95 percent because of the testing methods CPBR must use to ensure vapor tightness, the extensive checks used to ensure that barges are sealed, vapor sensors on barge decks, and the personal exposure monitors worn by barge workers to detect significant leaks.

Mr. Darby did, however, acknowledge the importance of the difference between using 98.7 percent and 95 percent as the capture efficiency. In response to a question from the Court, Mr. Darby calculated the emissions from barge loading when he kept all of CPBR's values for vapor pressure, molecular weight, and temperature the same but changed the capture efficiency to 95 percent. Mr. Darby stated that at 95 percent capture efficiency, barge loading would result in VOC emissions of 70.15 tons per year. This is an increase of approximately 54 tons per year over CPBR's calculation of emissions from barge loading. Adding 54 tons to the 78 tons per year that CPBR is allowed results in 132 tons per year of VOC emissions, well over the 100 tons per year threshold for sources requiring PSD permits. Mr. Darby called the difference between 98.7 percent and 95 percent capture efficiency "the crux of the argument." The Court agrees: that is the crux of the dispute.

d. Equipment Leaks

For equipment leaks, Mr. Darby explained that the discrepancy between the component count and the number of points checked during the monthly LDAR tests arises because the LDAR tests check multiple points on each component. Use of the whole component to calculate the number of components in a permit application conforms to EPA's recommended emission calculations: EPA bases the calculations on components as a whole, not their individual parts. EPA also allows for an estimate of emissions from a population of equipment rather than each individual component, and CPBR accordingly estimated emissions from a site-wide population of equipment. Mr. Darby further testified that DEQ increased the emissions factor CPBR had to use to calculate emissions from equipment leaks. While CPBR had requested an estimate of 0.15 tons of VOC emissions per year from component leaks, DEQ increased the factor to 33.3 pounds per month (0.2 tons per year). Mr. Darby stated that this increase likely overestimates the leaks from equipment.

3. Lay Witness Testimony

Defendants also called two lay witnesses: Dr. Brian Patterson, Ph.D., and Daniel Luckett. Dr. Patterson testified that he worked with CPBR and DEQ to ensure that CPBR satisfied any questions or concerns that DEQ had. Dr. Patterson discussed some of the inputs into the calculations for the permits. He testified that he reviewed the calculations that were performed by CPBR's consultant. According to Dr. Patterson, the molecular weight 50 lbs/lb-mole and the weather temperature for Astoria were both defaults in the TANKS program that CPBR selected. Dr. Patterson also testified that CPBR used the capture efficiency of 98.7 percent from AP-42 5.2. He further testified that at some point DEQ went from having a draft permit that did not include requirements for a full LDAR program and barge leak-tightness testing to a version that did include those requirements.[24]

Mr. Luckett testified that he is the general manager of the Facility. He discussed its day-to-operations, his knowledge of the ACDP application process, and the monitoring, reporting, and record keeping that the Facility uses to ensure compliance with the ACDP. Mr. Luckett testified that the railcars at the Facility do not vent vapors into the atmosphere. Regarding barge loading, Mr. Luckett testified that CPBR checks for "negative pressure" not at the barge itself, but approximately 30 feet from the barge before the vapors go into the VCU. He confirmed that CPBR does not load barges under negative pressure. He also testified that CPBR does not report to DEQ information regarding the actual percentage of emissions capture at the barges.

Because the Court's findings regarding the practical enforceability of the PSEL, the technical accuracy of CPBR's calculations, and the ultimate and critical question whether the

[24] Because Defendants did not provide pretrial disclosures for Dr. Patterson under either Rule 26(a)(2)(B) or Rule 26(a)(2)(C) of the Federal Rules of Civil Procedure, the Court did not allow Dr. Patterson to express at trial any expert opinions.

Facility emits more than 100 tons per year of VOCs rest partly on a determination of the level of deference due the DEQ, the Court discusses these findings in that context in the next section.

CONCLUSIONS OF LAW

A. The Court's Jurisdiction under the CAA

1. Exhaustion of Administrative Remedies and Issue Preclusion

As an initial matter and contrary to Defendants' argument, Plaintiffs need not have exhausted their administrative remedies before bringing a citizen suit under the CAA, 42 U.S.C. § 7604. The CAA does not contain an express requirement that a plaintiff exhaust state remedies before bringing a citizen suit, and courts within the Ninth Circuit and elsewhere have not interpreted the CAA to require such exhaustion. *See, e.g., Weiler v. Chatham Forest Products, Inc.*, 392 F.3d 532, 537 (2d Cir. 2004) ("[W]e fail to understand how the very existence of alternative enforcement mechanisms evinces congressional intent to prohibit use of section 304(a)(3) citizen suits in this context. The alternative mechanisms identified by the defendant [including appeal to state court] are not adequate substitutes for section 304(a)(3) suits."); *Ass'n of Irritated Residents v. Fred Schakel Dairy*, 2008 WL 850136, at *9 (E.D. Cal. Mar. 28, 2008) ("Congress declined to require exhaustion of administrative remedies under the citizen suit act of the CAA, and provided more than one avenue for citizens to challenge alleged violations under the CAA.").

In the context of the Clean Water Act ("CWA"), the Ninth Circuit has expressly held that a plaintiff is not required to exhaust state remedies before bringing a citizen suit. *Citizens for a Better Env't-California v. Union Oil Co. of California*, 83 F.3d 1111, 1119 (9th Cir. 1996), *as amended* (July 16, 1996). In *Citizens for a Better Environment*, the Ninth Circuit found that although procedures existed for the plaintiffs to appeal the regional water quality control board's cease-and-desist order within the state system, failure to use those procedures did not preclude

the plaintiffs from bringing suit to enforce the requirements of the CWA. *Id.* The court based its decision on the text of the CWA, which "makes no mention of exhaustion of state remedies as a prerequisite for bringing a citizen suit." *Id.*

The Ninth Circuit also has determined that the citizen suit provisions of the CWA and the CAA are essentially identical and subject to the same analysis. *Taylor Res., Inc.*, 299 F.3d at 1014; *see also Nat. Res. Def. Council, Inc. v. Train*, 510 F.2d 692, 699 (D.C. Cir. 1974) (noting that the CWA citizen suit provisions were modeled on the provisions of the CAA); *Sierra Club v. Portland Gen. Elec. Co.*, 663 F. Supp. 2d 983, 997 (D. Or. 2009) ("The citizen suit provisions in both acts [the CWA and CAA] are nearly identical . . . ."). Accordingly, while Plaintiffs could have appealed to the Oregon Court of Appeals DEQ's decision not to require a PSD permit, the availability of this appeal does not preclude other remedies under the CAA, including Plaintiffs' federal citizen suit.

Defendants also argue that Plaintiffs had the opportunity to litigate this case through the public hearing and comment period for the ACDP and Plaintiffs' petition for review by DEQ. Defendants now contend that the doctrine of issue preclusion bars Plaintiffs' citizen suit. The preclusive effect in this court of a decision by an Oregon state court or agency is determined by Oregon law. *See Olson v. Morris*, 188 F.3d 1083, 1086 (9th Cir. 1999); *In re Russell*, 76 F.3d 242, 244 (9th Cir. 1996); *Miller v. Cty. of Santa Cruz*, 39 F.3d 1030, 1032 (9th Cir. 1994), *as amended* (Dec. 27, 1994). In Oregon, issue preclusion applies when: (1) the issue in the two proceedings is identical; (2) the issue was actually litigated and was essential to a final decision on the merits in the prior proceeding; (3) the party sought to be precluded has had a full and fair opportunity to be heard on that issue; (4) the party sought to be precluded was a party or was in privity with a party to the prior proceeding; (5) the prior proceeding was the type of

proceeding to which a court will give preclusive effect. *Nelson v. Emerald People's Util. Dist.*, 318 Or. 99, 104 (1993).

Defendants have not pointed to Oregon case law establishing that the doctrine of issue preclusion applies in the scenario of when persons who are not in privity with the original parties advancing arguments on their own behalf in a proceeding because of their own interest in the questions to be decided. The Supreme Court, however, has decided that the doctrine of issue preclusion does not bar suits by such persons. *Stryker v. Crane*, 123 U.S. 527, 540 (1887) ("It is not an uncommon thing in this court to allow briefs to be presented by . . . persons who are not parties to the suit, . . . and it has never been supposed that the judgment in such a case would estop the intervenor in a suit of his own which presented the same questions."). The Court finds that Plaintiffs were not parties in a proceeding brought by or before DEQ and thus concludes that DEQ's decision not to require a PSD permit does not bar this case of Plaintiffs' arguments. Additionally, the Court finds that the opportunity to participate in a public hearing and comment period for a permit application is not the kind of proceeding to which an Oregon court would give preclusive effect. *See Oregon v. Ratliff*, 304 Or. 254, 259 (1987) (declining to apply the doctrine of issue preclusion to a hearing in which "litigation is not conducted as it would be in court with two adversary parties and a neutral judge"). Plaintiffs therefore are not collaterally estopped from challenging Defendants' failure to obtain a PSD permit.

2. Collateral Attack on a Facially Valid State Permit

As discussed above, the CAA's citizen suit provision provides: "The district courts shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to . . . apply any appropriate civil penalties . . . ." 42 U.S.C. § 7604(a). The jurisdictional statement in the citizen suit provision of the CAA is separate and distinct from provisions of 42 U.S.C. § 7607, which requires that "[a] petition for review of . . . any . . . final action of the

Administrator under this chapter . . . which is locally or regionally applicable . . . be filed only in the United States Court of Appeals for the appropriate circuit." *See Nat. Res. Def. Council, Inc. v. Envtl. Prot. Agency*, 512 F.2d 1351, 1355 (D.C. Cir. 1975) (holding that the section of the CAA authorizing citizen suits and the section concerning judicial review of agency action "contemplate distinct groups of cases"). The Ninth Circuit has unambiguously stated: "[A] citizen enforcement action against third parties for alleged violations of the Clean Air Act may be brought in the district courts." *Grand Canyon Trust v. Tucson Elec. Power Co.*, 391 F.3d 979, 986 (9th Cir. 2004).

Some jurisdictions have found, however, that under the CAA, plaintiffs may not bring citizen suits in a district court to collaterally attack an agency's permitting decision. For example, the Ninth Circuit has held that where a defendant obtained a state PSD permit and the state had integrated the permitting requirements of Title V into its SIP, the plaintiffs' remedies in federal court were limited to the judicial review mechanisms in 42 U.S.C. § 7607. *Romoland Sch. Dist. v. Inland Empire Energy Ctr., LLC*, 548 F.3d 738, 756 (9th Cir. 2008). The District of New Mexico also interpreted 42 U.S.C. § 7607 to mean that the court could not entertain a citizen suit against defendants for failing to obtain PSD permits where the EPA had determined that the defendants did not need the permits. *Grand Canyon Trust v. Pub. Serv. Co. of New Mexico*, 283 F. Supp. 2d 1249, 1253 (D.N.M. 2003). Similarly, the Eastern District of Arkansas held that "[t]he Clean Air Act does not authorize a collateral attack on a facially valid state permit." *Nucor Steel-Arkansas v. Big River Steel, LLC*, 93 F. Supp. 3d 983, 990 (E.D. Ark. 2015*); accord CleanCOALition v. TXU Power*, 536 F.3d 469, 479 (5th Cir. 2008) ("Appellants interpret the phrase 'without a permit' to mean 'without a permit that complies with the CAA.' However, we decline to rewrite the plain language of the statute. Here, not only has [the defendant] applied for

a permit, it has since successfully obtained one . . . ."). The Eastern District of Tennessee has held that the citizen suit provision of the CAA does not allow for a collateral attack on a validly-issued state permit when such an attack amounts to a challenge to the state's SIP. *Nat'l Parks Conservation Ass'n, Inc. v. Tenn. Valley Auth.*, 175 F. Supp. 2d 1071, 1079 (E.D. Tenn. 2001).

According to Defendants, these cases establish that the CAA grants only limited rights to bring federal citizen suits. Defendants further argue that these cases show that CAA citizen suits do not allow for district court review of whether the terms and conditions in a validly-issued state permit are deficient or otherwise not in compliance with the CAA. The cases finding that plaintiffs may not collaterally attack a validly-issued state permit through a citizen suit are, however, readily distinguishable. *Romoland*, *Grand Canyon Trust*, *Nucor Steel-Arkansas*, and *CleanCOALition* all involved challenges to permits subject to Title V permitting requirements. Pursuant to Title V § 7661d, state permitting authorities must submit permit applications for federal major sources to EPA for review. Under § 7661d(b)(1): "If any permit contains provisions that are determined by the [EPA] Administrator as not in compliance with the applicable requirements of this chapter, including the requirements of an applicable [state] implementation plan, the Administrator shall . . . object to its issuance." If EPA objects to a permit application, the state authority may not issue the permit unless the applicant revises the permit application to account for the objection. 42 U.S.C. §§ 7661d(b)(3), 7661d(c).

According to the Ninth Circuit, when states have incorporated the Title V requirement for EPA review into their SIPs, a state Title V permit only issues after EPA has made a final decision not to object to that permit. *Romoland*, 548 F.3d at 742-43, 755. Title V requires any parties objecting to the issuance of such permits to "petition the Administrator" under § 7661d(b)(2) and provides for judicial review of such petitions in the courts of appeal under

§ 7607. Thus, explains the Ninth Circuit, "by creating in 42 U.S.C. § 7661d(b)(2) an avenue of judicial review that passes through 42 U.S.C. § 7607, Congress effectively foreclosed the alternative avenue of citizen suit enforcement through 42 U.S.C. § 7604." *Romoland*, 548 F.3d at 755.

The Ninth Circuit's holding in *Romoland* was narrow:

> We do not opine upon the general contours or scope of the citizen suit provision of 42 U.S.C. 7604. We hold only that where a state or local air pollution control district has integrated the preconstruction requirements of Title I with the permitting requirements of Title V and a permit is issued under that integrated system, a claim that the terms of that permit are inconsistent with other requirements of the Clean Air Act may only be brought in accordance with the judicial review procedures authorized by Title V of that Act, 42 U.S.C. § 7661–7661f, and may not be brought in federal district court under the Act's citizen suit provision, 42 U.S.C. § 7604.

Id. at 756. The decisions in *Grand Canyon Trust*, *Nucor Steel-Arkansas*, and *CleanCOALition* involved precisely the same scenario and reached the same conclusion. A source with a validly-issued state permit subject to Title V requirements is not susceptible to citizen suits, regardless of whether that permit actually complies with CAA provisions.

The decision in *National Parks Conservation Association* involved similar facts but rested on slightly different grounds. Although the case also involved a state-issued Title V permit, the court analyzed the plaintiffs' challenge to the permit as a challenge to the state's SIP. Looking to the text of the CAA citizen suit provision, the court found no evidence that Congress allowed for challenges to validly-enacted emissions standards and limitations, embodied in validly-issued permits, through § 7604 in district court. *Nat'l Parks Conservation Ass'n*, 175 F. Supp. 2d at 1079. This decision is consistent with Ninth Circuit precedent establishing that the CAA does not provide for attacks on state SIPs in district court. *Cal. Dump Truck Owners Ass'n v. Nichols*, 784 F.3d 500, 502 (9th Cir. 2015).

Federal appellate courts, however, have allowed citizen suits to proceed in district court when the suits challenge state agencies' decisions not to require permits. In the analogous CWA context, the Ninth Circuit noted that although citizen suits often arise when persons violate existing permits, the CWA also allows citizen suits "where a party proceeds to discharge pollutants from a point source without a required permit." *Taylor Res., Inc.*, 299 F.3d at 1012 n.4 (9th Cir. 2002). A state agency's failure to require a permit "does not divest the federal courts of jurisdiction. The State may choose to sit on the sidelines, but state inaction is not a barrier to a citizen's otherwise proper federal suit to enforce the Clean Water Act." *Id.* at 1012. The Second Circuit similarly held that under the CAA citizen suit provision, when "[t]he plaintiffs have alleged that the proposed factory will be a major emitting facility within the meaning of the Act and that [the defendant] has not obtained permits required by Part D for major emitting facilities," the facts support a cause of action in district court. *Weiler*, 392 F.3d at 536 (2d Cir. 2004).

In the CAA context, another court in this district held that it had jurisdiction to review a defendant's failure to obtain an appropriate permit before commencing construction of a federal major source. *Portland Gen. Elec. Co.*, 663 F. Supp. 2d at 996. This case is somewhat inapposite to the claims here because it involved a challenge to EPA's decision not to require a PSD permit before the enactment of the judicial review requirements in § 7607(b). The defendant had asked EPA whether the defendant's facility required a PSD permit, and EPA explicitly concluded that the facility was not subject to the PSD regulations. In concluding that the court nonetheless had jurisdiction, the court held that § 7607(b) did not operate retrospectively. *Id.* at 997. The case is still instructive, however, because the judicial review provisions of § 7607(b) do not apply to applications for non-PSD permits, such as the ACDP application in this case. The court in

Portland General Electric emphasized that the citizen suit provision of the CAA "grant[s] citizens the right to challenge the actions of companies alleged to be in violation of the law, regardless of whether the government believes them to be in violation of the law." *Id.* This Court agrees.

As stated in 42 U.S.C. § 7604, "any person may commence a civil action on his own behalf . . . (3) against any person who proposes to construct or constructs any new or modified major emitting facility without a permit required under part C of subchapter I of this chapter (relating to significant deterioration of air quality) . . . ." Plaintiffs allege that Defendants propose to construct a new major emitting facility by substantially increasing the facility's capacity to process crude oil. Plaintiffs further allege that Defendants propose to construct this new facility without a PSD permit required by the CAA. Defendants never applied for a PSD permit, and EPA never reviewed any application submitted by Defendants. Instead, DEQ determined that Defendants did not require a PSD permit and could instead operate with a DEQ-issued synthetic minor permit that limits VOC emissions to 78 tons per year. Plaintiffs contend that the permit limits are neither practically effective nor enforceable.

Considering the plain text of § 7604(3), the Court finds that it has jurisdiction to reach the merits of Plaintiffs' claims. This suit does not fall within the category of cases subject only to judicial review under § 7607(b) because Defendants have not applied for a permit subject to Title V requirements. Moreover, Plaintiffs have not alleged that any enforceable provisions of the ACDP are unlawful, so their suit does not collaterally attack the Oregon SIP. Plaintiffs seek to fulfill precisely the goals contemplated by Congress in enacting the citizen suit provision of the CAA: to allow citizens to serve as "'a useful instrument for detecting violations and bringing

them to the attention of the enforcement agencies and courts alike.'" *Train*, 510 F.2d at 700 (quoting Senate Debate on S. 4358, Sept. 22, 1970 (remarks of Senator Muskie)).

B. Practical Enforceability of the PSEL in the ACDP

1. Deference Due the DEQ's Permitting Decision

Before the Court can decide whether the PSEL is practically enforceable as a whole, the Court must first decide the appropriate level of deference it must give to the DEQ's permitting decision, also known as "the scope of review." The Ninth Circuit has recognized that if courts gave an agency's decision "conclusive deference, the citizen suit would be defeated" in instances where an agency has determined that no regulation is necessary. *Cargill Salt Div.*, 481 F.3d at 706. The Ninth Circuit thus has held that a court may, in entertaining a citizen suit, decide whether a defendant's action requires a permit even though the regulating agency determined that the action was not subject to the requirement of a permit. *Id.* (citing *Taylor Res., Inc.*, 299 F.3d at 1012-13).

Still, when a citizen suit involves determinations made by federal agencies, courts review the agency action deferentially. Where a statute empowering citizen suits omits a controlling standard of review, federal courts look to the Administrative Procedure Act ("APA"). For the citizen suit provision of the Endangered Species Act ("ESA"), the Ninth Circuit explained: "Irrespective of whether an ESA claim is brought under the APA or the citizen-suit provision, the APA's 'arbitrary and capricious' standard applies." *W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 481 (9th Cir. 2011); *see Oregon Nat. Res. Council v. Allen*, 476 F.3d 1031, 1036 (9th Cir. 2007) ("As the ESA does not itself specify a standard of review of its implementation, we apply the general standard of review of agency action established by the [APA]."). [25] Here,

[25] Like the ESA, the CAA does not specify a standard of review for use in citizen suits.

however, we have a state agency's action, to which the APA standards of review do not apply in the same way as they to federal agency actions.[26]

In a case involving the Comprehensive Environmental Response Compensation and Liability Act ("CERCLA"), the Ninth Circuit held that "where state agencies have environmental expertise they are entitled to 'some deference' with regard to questions concerning their area of expertise." *Arizona v. City of Tucson*, 761 F.3d 1005, 1014 (9th Cir. 2014). Similarly, in *Taylor Resources*, the Ninth Circuit stated that the state agency's decision that the defendant did not require a permit "warrant[ed] consideration" but nothing more. 299 F.3d at 1012.

On the other hand, a state agency's technical determinations may require some higher level of deference in a statutory scheme that gives states a principal role. The Ninth Circuit has concluded that when no federal or state statutes or regulations mandate that a state agency consider certain factors before issuing a permit, "discretion should properly repose in the responsible state officials to establish such . . . methods and analysis as they deem appropriate." *League to Save Lake Tahoe, Inc. v. Trounday*, 598 F.2d 1164, 1174 (9th Cir. 1979). EPA's Environmental Appeals Board also has noted: "When a petitioner seeks review of a permit based on issues that are fundamentally technical in nature, the Board assigns a particularly heavy burden to the petitioner. This demanding standard . . . ensures that the locus of responsibility for important technical decisionmaking rests primarily with the permitting authority . . . ." *Peabody*, 2005 WL 428833, at *9. Relatedly, the Supreme Court has noted EPA's "need to accord

[26] In issuing the ACDP, DEQ determined that the PSEL was enforceable. This involved a factual determination that the Facility would not emit more than 78 tons per year of VOCs. In making this determination, neither DEQ nor EPA interpreted the CAA, the Oregon SIP, or an agency regulation. Thus, neither *Chevron* nor *Auer* deference applies. *See Chevron, U.S.A. Inc. v. Natural Resources Defense Council*, 467 U.S. 837 (1984); *Auer v. Robbins*, 519 U.S. 452 (1997). The Court also notes that it would not defer to a state agency's interpretation of a purely federal statute or whether state law and regulations conform to federal law. *See Orthopaedic Hosp. v. Belshe*, 103 F.3d 1491, 1495-96 (9th Cir. 1997).

appropriate deference" to state agencies' determinations about what constitutes best available control technology ("BACT") in PSD permits. *Alaska Dep't of Envtl. Conservation v. E.P.A.*, 540 U.S. 461, 490 (2004). EPA intervenes only when a state agency's "determination is not based on a reasoned analysis." *Id.* (internal quotation marks omitted). EPA's "limited but vital role" in enforcing BACT requirements "is consistent with a scheme that 'places primary responsibilities and authority with the States, backed by the Federal Government.'" *Id.* at 491 (quoting S. Rep. No. 95–127, at 29 (1977)).

Yale law professor Abbe Gluck has considered the complicated question of deference when state agencies implement federal law. *See, e.g.*, Abbe R. Gluck, *Intrastatutory Federalism and Statutory Interpretation: State Implementation of Federal Law in Health Reform and Beyond*, 121 Yale L.J. 534 (2011). In such cooperative federalism schemes, there are no "canons that advise courts to take into account Congress's use of state implementers when deciding how much to defer to federal agencies themselves, nor any canons that attempt to negotiate the critical state-federal interagency relationships to which these statutes give rise." *Id.* at 542-53. Professor Gluck proposes new interpretative approaches to statutes in which Congress provides for state-led implementation, approaches that recognize the critical part played by state agencies. One such approach looks at "the specific ways that Congress utilizes state implementers to determine the level of deference the various concurrent implementers should receive." *Id.* at 599. In another article, Professor Gluck again suggests that courts consider that "Congress does sometimes intend to defer to state implementers." Abbe R. Gluck, *Our (National) Federalism*, 123 Yale L.J. 1996, 2025 (2014).

In enacting the CAA, Congress explicitly expressed its intent to give states "the primary responsibility for assuring air quality within the entire geographic area comprising such State."

42 U.S.C. § 7407(a). In Oregon, DEQ shoulders some of that responsibility with its review of permit applications and work to ensure that facilities comply with CAA requirements. In this particular case, DEQ made many technical determinations about appropriate emissions factors and the monitoring requirements necessary to determine if CPBR complies with the relevant PSEL. In its response to public comments on the ACDP, DEQ explicitly found that "the PSELs being established in this permit in accordance with the PSEL rules in OAR 340 Division 222, are enforceable and establish that the facility will emit less than 100 tons per year of any regulated pollutant." At the very least, in accordance with *Arizona v. City of Tucson* and recognizing Oregon's role in implanting the CAA, the Court must give "some deference" to DEQ's factual determination that the PSEL for VOCs limits the facility's potential to emit to 78 tons per year. The Court notes, however, that "deference does not imply abandonment or abdication of judicial review." *Miller-El v. Cockrell*, 537 U.S. 322, 324 (2003).

2. Factual Support for the PSEL[27]

Plaintiffs allege that the PSEL at issue is not practically enforceable because it relies on inaccurate calculations of emissions from railcar unloading, tank storage, barge loading, and equipment leaks. Plaintiffs' expert witness, Dr. Sahu, however, did not propose alternative emissions estimates for railcar unloading, and Defendants' expert witness, Mr. Darby, explained that CPBR does not vent vapors from railcars to the atmosphere. For tank storage and barge loading emissions, Dr. Sahu opined that CPBR used inaccurate numbers for vapor pressure, liquid and vapor molecular weight, and temperature. Mr. Darby rebutted this testimony by explaining why CPBR selected the values used in the permit. For equipment leaks, Mr. Darby

[27] The Court now makes the following factual findings regarding the legal and practical enforceability of the PSEL in light of the Court's legal conclusions about the level of deference it must give to DEQ.

also explained that the component count in the permit application does not mirror the number of points checked in LDAR because LDAR tests check multiple points on each component. Mr. Darby offered additional explanations for discrepancies Dr. Sahu identified in component counts and asserted that CPBR actually overestimated the emissions from equipment leaks. The Court finds that evidence supports CPBR's emissions estimates for railcars, tank storage, and equipment leaks. To the extent that DEQ adopted these emissions estimates for railcars, tank storage, and equipment leaks, with such modifications as noted above, the PSEL is practically enforceable.

It is a closer call, however, for the barge loading emissions estimates underlying the PSEL. The evidence supports the values used for vapor pressure, molecular weight, and temperature in the barge loading emissions calculations. The parties conceded that the emissions capture efficiency percentage was the value that made the most difference in the case. A 3.7 percent difference in capture efficiency alone, from 95 percent to 98.7 percent, puts CPBR well above the threshold for being a federal major source. DEQ adopted the 98.7 percent capture efficiency assumption by including CPBR's proposed emission factor for barge loading in the final permit.

Defendants argue that CPBR and DEQ properly used 98.7 percent capture efficiency; Plaintiffs assert that CPBR should have used 95 percent capture efficiency. The Court considered the following evidence. In its report on the ACDP, DEQ stated that the although 40 C.F.R. Part 63, Subpart Y does not apply to the facility, "all marine vessels loaded at the facility have and will meet the same vapor tightness requirements as specified in Subpart Y." Subpart Y imposes MACT-level testing and defines "vapor tight" not as a term of art that allows some emissions, but as "no leaks" within 12 months. 40 C.F.R. § 63.561. AP-42 5.2-6 allows facilities

meeting a MACT-level annual leak test to assume 99.2 percent capture efficiency. Table 9-5 of EPA's *Emissions Estimation Protocol for Petroleum Refineries* allows facilities undergoing an annual leak check per 40 C.F.R. Part 60, Subpart XX (gasoline) to assume a capture efficiency of 98.7 percent. The 98.7 percent number is suggested for tanker trucks transporting gasoline, but the table gives no capture efficiency for marine vessels carrying crude oil. Mr. Darby stated his belief that 98.7 percent represented the most appropriate number because of the methods CPBR must use to ensure vapor tightness, the extensive checks used to ensure that barges are sealed, vapor sensors on barge decks, and the personal exposure monitors worn by barge workers to detect significant leaks. Dr. Sahu disagreed.

Giving DEQ the deference due a state agency charged with implementing a federal statute that has made technical determinations within its area of expertise, the Court finds that DEQ reasonably approved the use of 98.7 percent capture efficiency. The ACDP requires MACT-level testing for the facility, which allows the facility to assume a capture efficiency of at least 98.7 percent. Although Plaintiffs dispute which tests the facility actually performs to check the vapor tightness of barges, this is a compliance issue rather than a permitting issue, and Plaintiffs have not pled that Defendants are violating the conditions of the ACDP.

Additionally, even without giving deference to DEQ, the burden of persuasion rests with Plaintiffs. Where the evidence is in equipoise in a civil case subject to a preponderance of the evidence standard, such as this case, the party bearing the burden of persuasion must tip the scales in its favor in order to prevail. *See Concrete Pipe & Prods. of Cal., Inc. v. Constr. Laborers Pension Trust for S. California*, 508 U.S. 602, 622 (1993). Plaintiffs failed to tip the scale in favor of using the 95 percent capture efficiency, the "crux of the argument." Plaintiffs, therefore, have failed to prove by a preponderance of the evidence that the PSEL in the ACDP is

not practically enforceable due to an inaccurate calculation of the emissions from barge loading or any other emissions point.[28] The monitoring and reporting requirements in the ACDP—including the three options given for ensuring vapor tightness on barges—allow DEQ to enforce the PSEL. The ACDP limits CPBR's potential to emit to 78 tons per year of VOCs, which is below the 100 tons-per-year threshold for constituting a federal major source. Thus, Defendants did not violate the CAA by failing to apply for a PSD permit.

CONCLUSION

Based on the evidence presented at trial and the record in this case, the Court finds that Defendants did not violate the Clean Air Act. Plaintiffs' request for relief enjoining Defendants from further construction and operation of the Facility without a Prevention of Significant Deterioration permit is denied.

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[28] The Court considered Plaintiffs' argument that the Facility has a razor-thin margin of error for complying with the 78 tons per year limit. The threshold of 100 tons per year of VOC emissions, the point at which the Facility becomes a federal major source, represents approximately 2/1000th of a percent of the Facility's annual throughput. As demonstrated by the importance of a 3.7 percent difference in emissions capture efficiency at barge loading, small variances in the level of emissions could quickly send the Facility over the 100 tons-per-year threshold. Moreover, although the permit imposes MACT-level annual vapor-tightness testing, the permit does not require CPBR to measure vapor tightness on a monthly basis or to report to DEQ information regarding the actual percentage of emissions capture at barge loading. DEQ could have imposed additional monitoring and recordkeeping requirements to ensure that CPBR complies with the obligations in the ACDP, and the Court takes seriously Plaintiffs concerns regarding DEQ's failure explicitly to articulate why it accepted certain emissions factors and assumptions in CPBR's permit application.

If there had been any less stringent monitoring or testing provisions or if CPBR had relied on any more generic or unverified emissions control assumptions in its calculations, the Court might have followed the EPA Environmental Appeals Board's determination in *Peabody*. There, the Board found that the uncertainties inherent in emissions factors and assumed control efficiencies made the Facility's PSEL unenforceable. *See Peabody*, 2005 WL 428833, at *10-13 (holding that the permit applicant had failed to establish that EPA committed clear error in declining to grant a PTE limit on the basis of calculations using emissions factors). Notwithstanding these concerns, the Court finds that Plaintiffs did not meet their burden of proving that DEQ cannot practically enforce the limit of 78 tons per year based on site-specific parameters.

IT IS SO ORDERED.

DATED this 30th day of December, 2015.

/s/ Michael H. Simon
Michael H. Simon
United States District Judge