



NORTHWEST ENVIRONMENTAL DEFENSE CENTER

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Patty Hamman
750 Front St. NE #120
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Re: Proposed Issuance of Standard Air Contaminant Discharge Permit for TDY Industries

Dear Permit Writer,

The Northwest Environmental Defense Center (NEDC) submits these comments regarding the proposed issuance of a Standard Air Contaminant Discharge Permit (hereinafter, ACDP) for TDY Industries, DBA Wah Chang (hereinafter, Wah Chang). NEDC's mission is to preserve and protect the environment and natural resources of the Pacific Northwest. NEDC's membership includes individuals who visit, recreate near or live in the vicinity of Wah Chang and its pollution. NEDC routinely comments on state-issued ACDP permits.

In issuing a Standard ACDP to Wah Chang, the Oregon Department of Environmental Quality (DEQ) proposes to allow Wah Chang to install an additional new emissions unit, thereby increasing the plant's capacity and annual emissions of volatile organic compounds (VOCs) and other pollutants without complying with the requirements of the Prevention of Significant Deterioration program (PSD). DEQ's proposed action illustrates the inadequacy of DEQ's implementation of the federal Clean Air Act. Wah Chang's addition of an entirely new emissions unit that increases net emissions over the significant emissions rate is a major modification requiring a PSD permit under the Clean Air Act and the federal regulations. Under DEQ's program, however, Wah Chang is allowed to summarily avoid the more stringent requirements of PSD, including compliance with a BACT emission limit, because the emissions from the plant with the new addition are less than those estimated from the plant in 1977-1978. As explained below, DEQ's action is unlawful and unjustified, and Wah Chang must apply for and receive a PSD permit before commencing construction on its proposed modification.

Wah Chang's Proposed Construction will Significantly Increase Pollution.

Wah Chang has been operating its metal production and processing plant in Albany, Oregon since 1958. During the "baseline years" of 1977-1978, Wah Chang operated more than one kiln at its Albany plant with a combined capacity of 50,000 pounds of oxide processed per day. At some time in the past, Wah Chang removed one of its zirconium kilns. Wah Chang Standard ACDP Application Form AQ102 at 2. Wah Chang now proposes to install a new zirconium kiln. This addition will increase the plant's capacity from 50,000 pounds of oxide processed per day to 60,000 pounds of oxide processed per day. At its current rate of production,

Wah Chang is permitted to emit over ten-thousand tons of pollution into Oregon's air each year.¹ Wah Chang's proposed construction of a new zirconium kiln will significantly increase the pollution emitted by the facility. In particular, the change will increase emissions of volatile organic compounds (VOCs) by 85 tons per year, which is over two times the significant emissions rate (SER) set by Oregon DEQ.

VOCs cause or exacerbate numerous human health problems and have deleterious impacts on Oregon's economy and environment. On their own, VOCs cause eye, nose, and throat irritation; headaches, loss of coordination, nausea, damage to liver, kidney, and central nervous system. See U.S. Environmental Protection Agency, *An Introduction to Indoor Air Quality: VOC's* (available at <http://www.epa.gov/iaq/voc.html>). VOCs cause cancer in animals and are suspected or known to cause cancer in humans. *Id.* VOCs also react with NOx in the presence of water and sunlight to form ground level ozone, or smog. In addition to the negative impacts on scenic vistas and visibility, a variety of ailments are associated with smog. See U.S. Environmental Protection Agency, *Health and Environmental Effects of Ground Level Ozone* (July 17 1997) (available at <http://www.epa.gov/ttn/oarpg/naaqsfm/o3health.htm>). According to the U.S. Environmental Protection Agency (EPA), exposure to ozone can "cause acute respiratory problems; aggravate asthma; cause significant temporary decreases in lung capacity of 15 to over 20 percent in some healthy adults; cause inflammation of lung tissue; lead to hospital admissions and emergency room visits [10 to 20 percent of all summertime respiratory-related hospital visits in the northeastern U.S. are associated with ozone pollution]; and impair the body's immune system defenses, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia." *Id.* Ground level ozone also depletes crop productivity and decreases the ability of trees and plants to fight disease. U.S. Environmental Protection Agency, Office of Air Quality, Document # EPA-451/F-93-011, January 1994 (available at <http://es.epa.gov/techinfo/facts/ozone3.html>). DEQ should carefully and fully consider the potential impacts of increased VOC pollution from Wah Chang through a PSD review and permitting process as required by the Clean Air Act.

Under the Federal Clean Air Act and Federal Minimum Standards for State PSD Programs, DEQ Must Require Wah Chang to Engage in Full-Blown Permitting Process to Prevent the Significant Deterioration of Oregon's Air Quality.

The Clean Air Act aims "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." CAA § 101; 42 U.S.C. § 7401(b)(1). The Clean Air Act sets out a complex scheme of regulations and programs to prevent and abate air pollution. The Prevention of Significant Deterioration (PSD) program is designed to, *inter alia*, protect human health and welfare from the actual or potential adverse effects of reasonably anticipated air pollutants; to preserve, protect, and enhance the air quality in national parks and wilderness areas; and to ensure that economic growth will occur in a manner consistent with the preservation of existing air resources. CAA §160; 42 U.S.C §7470. The PSD program also exists to ensure that any decision to permit an increase in air pollution is made only after a careful evaluation of all the

¹ According to DEQ's technical review report, Wah Chang's current Title V operating permit allows the facility to emit **202** tons of particulate matter, **202** tons of fine particulate matter, **72** tons of nitrogen oxides, **132** tons of sulfur dioxide, **9748** tons of carbon monoxide, and **466** tons of volatile organic compounds each year. Oregon DEQ Standard Air Contaminant Discharge Permit Review Report ("Review Report") at 2.

consequences of such a decision, including meaningful public review. CAA § 165; 42 U.S.C. § 7475(a)(2). Under the PSD program, no source proposing a major modification can commence construction of the modification without a satisfying the requirements of the PSD permitting program. CAA § 165; 42 U.S.C. § 7475; 40 C.F. § 51.166(a)(7)(iii). These include analysis of and compliance with a Best Available Control Technology (“BACT”) emissions limit, a demonstration that the source will not cause or contribute to a violation of ambient air quality standards or increment, issuance of a major source PSD permit that has been issued following the proper public participation requirements, and other obligations. 42 U.S.C. § 7475.

A major modification for PSD purposes is “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 a source or which results in the emissions of any air pollutant not previously admitted.” 42 U.S.C. § 7411(a)(4)(as incorporated by 42 U.S.C. § 7479(2)(C)). According to the federal regulations that set the national floor for state PSD programs, a major modification is “any physical change in or change in the method of operation of a major stationary source” that results in a significant emissions increase and a net emissions increase. 40 C.F.R. § 51.166(b)(2)(1). Wah Chang is a major stationary source because it emits or has the potential to emit more than 250 tons per year of regulated NSR pollutants. *See* 40 C.F.R. § 51.166(b)(1)(i)(b). Thus, a modification at Wah Chang triggers PSD when it is a physical or operational change at a major source that results in a significant emissions increase and a net emissions increase. Exceptions as to what constitutes a “physical change or change in the method of operation” can apply, such as “routine maintenance, repair and replacement” activities and increases in hours of operation not accompanied by a physical change, neither of which are considered modifications for PSD purposes. 40 CFR 51.166(b)(2)(iii)(a), (b)(2)(iii)(f). These exceptions do not apply in this case but are worth mentioning to highlight the fact that the federal exceptions do not give DEQ the authority to exempt an entire class of major sources by failing to appropriately calculate baseline emissions and the netting basis.

In determining whether a modification or change will result in a significant emissions increase, the facility must first calculate its baseline level of actual emissions. For modifications involving only construction of new emissions units, like the Wah Chang modification, baseline actual emissions “for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero; and thereafter, for all other purposes, shall equal the unit's potential to emit.”² 40 C.F.R. § 51.166(b)(47)(iii). For modifications to existing emissions units, on the other hand, the baseline actual emissions are defined as the average rate at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the [source] within the 10-year period immediately preceding [the change].” 40 C.F.R. 51.166(b)(47)(ii). A source may not use a more “representative” baseline period outside the 10-year “lookback period” and the time-period “shall not include any period earlier than November 15, 1990.” *Id.*

For modifications only involving new emissions units, as at Wah Chang, the permitting authority must use an “actual-to-potential test” when comparing baseline and post-modification emissions increases. 40 C.F.R. § 51.166(a)(7)(iv)(d). Thus, a significant emissions increase is

² An “emissions unit” is “any part of a stationary source that emits or would have the potential to emit any regulated NSR pollutant.” 40 C.F.R. 51.166(b)(7). A “new emissions unit” is “any emissions unit that is (or will be) newly constructed and that has existed for less than 2 years from the date such emissions unit first operated.” 40 C.F.R. 51.166(b)(7)(i).

projected to occur if the "sum of the difference between the potential to emit... from each new emissions unit following completion of the project and the baseline actual emissions ...of these units before the project equals or exceeds the significant amount for that pollutant." 40 C.F.R. § 51.166(a)(7)(iv)(d). As noted above, baseline actual emissions equal zero. 40 C.F.R. § 51.166(b)(47)(iii). Potential to emit equals the maximum capacity of the unit to emit pollutants under its physical and operational design. 40 C.F.R. § 51.166(b)(4). The "significant amount" for VOCs is 40 tons per year. 40 C.F.R. § 51.166(b)(23). Therefore, Wah Chang's proposed modification will result in a significant emissions increase because the difference between zero and the potential to emit from the new emissions unit is greater than 40 tpy. Wah Chang estimates that adding the new emissions unit will increase VOC emissions by eighty-five tpy, forty-five tpy over the significant emissions rate.

The modification also results in a net emissions increase. A "net emissions increase" occurs when the sum of the emissions increase from a physical change or change in the method of operation and any other increases and decreases in actual emissions at the major stationary source that are contemporaneous and otherwise creditable (e.g. not required by rule or order). 40 C.F.R. § 51.166(b)(3)(a) & (b). Wah Chang has not demonstrated that any decreases in actual emissions at its facility are contemporaneous or creditable. Therefore, the significant emissions increase described above is also a net emissions increase. Therefore, the proposed change constitutes a major modification triggering PSD review, including the requirement to analyze BACT and comply with a BACT emissions limit. 42 U.S.C. § 7475(a).

Oregon's PSD Program is Insufficient to Maintain Oregon's Air Quality, Inconsistent with the Federal Regulatory Floor, and, as Applied to Wah Chang, Results in an Unlawful Permitting Decision.

According to Oregon DEQ, Wah Chang's addition of a new emissions unit does not qualify as a major modification. This regulatory conclusion starkly demonstrates the failure of Oregon's program to satisfy the minimum federal standards. Oregon rules are inconsistent with, and less stringent than the federal minimum regulatory floor in a number of respects. Oregon's use of plant site emission limits (PSEL), "netting basis" and "unassigned emissions" to determine what constitutes a major modification presents several problems. Even EPA has acknowledged that by using this approach, DEQ's rules allow some facilities to escape PSD review that would be subject to PSD under the federal rules. 68 Fed. Reg. 2891, 2897-98 (Jan. 22, 2003). In approving changes to Oregon's PSD program in 2003, EPA noted that its approval did not address whether Oregon's rules, including Oregon's industry friendly "netting basis," complied with the newer PSD rules. *Id.* In December 2005, Oregon submitted a request for equivalency determination to EPA, in which Oregon asked EPA to deem its NSR provisions equivalent to the now finalized federal NSR program. To date, EPA has taken no action on Oregon's request.

The first problem with Oregon's PSD program is that it focuses on the PSEL to determine whether a "major modification" has occurred, and the PSEL is purportedly based on actual emissions in the mid-1970s. In Oregon, to qualify as a major modification, a change must result in "an increase in the PSEL" over the significant emission rate over the netting basis. OAR 340-200-0020(66)(a). The first problem with Oregon's approach is that the PSEL is a permit limit, not a calculation of actual emissions or potential to emit of a new unit. A PSEL is "the total mass of emissions per unit of time of an individual air pollutant specified in a permit source." OAR 340-200-0020(88). A PSEL is a plant-wide cap on annual emissions in a permit limit that is intended to function as a federally and practically enforceable limit on a source's potential to

emit (PTE). Because the PSEL is a permit limit, the source must apply for an increase in its permit limit to ever qualify as a "major modification" under OAR 340-200-0020(66)(a). However, the focus of the determination must be on whether actual emissions increase, not whether the permit limit changes.

Even assuming that this requirement for a change in PSEL is the result of less than careful drafting, the second problem with Oregon's program is that it requires a "major modification" to result in increase in permitted (not actual) emissions that is equivalent to an increase over the SER on a plant-wide basis. Instead of focusing on the pollution increase from the new emissions unit, Oregon's program determines whether an emissions increase is significant by reference to the entire facility. In this way, Oregon's program features "automatic netting" based on a permit limit from the 1970s. Thus, so long as the source had a PSEL in excess of emissions projected from the source after a physical or operational change, and never banked those emissions, no PSD permit is required.

The third problem with Oregon's PSEL approach is that the PSEL is not based on projected or actual emissions during a time-frame that is contemporaneous with the physical or operational change in question, but during the "baseline period." OAR 340-200-0020(3). The rules define baseline period as "any consecutive 12 calendar month period during calendar years 1977 or 1978." OAR 340-200-0020(14). Oregon's definition of "baseline period" also allows DEQ to use an earlier time period "upon a determination that it is more representative of normal source operation." *Id.* The baseline emission rate is then adjusted as rules change and future permitting decisions are made. The adjusted baseline is referred to as the "netting basis," and is defined as follows:

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 emissions credits transferred off site, PLUS any emission increases approved through [NSR] regulations.
OAR 340-200-0020(71).

The resultant "netting basis" in many cases may not, and in this case does not reflect actual emissions at any time that is reasonably contemporaneous with the physical or operational change in question. In fact, the "netting basis" reflects a thirty-year "lookback" period, in clear contravention of the federal regulatory floor. The inadequacy of Oregon's approach is evidenced by their comparison to the actual emissions at Wah Chang.

YEAR	POLLUTANT	PSEL (tons/year)	ACTUAL EMISSIONS (tons/year)	DIFFERENCE (tons/year)
2000	PM/PM10	202	122.10	79.9
	SO2	136	9.70	126.3
	VOCs	466	172.71	293.29
2004	PM/PM10	202	151	51
	SO2	136	5	131
	NOx	72	33	39

	CO	9748	4855	4893
	VOCs	466	226	240
2005	PM/PM10	202	145.9	56.1
	SO2	136	4.7	131.3
	NOx	72	31.0	41
	CO	9748	2580.7	7167.3
	VOCs	466	205.8	260.2
2006	PM/PM10	202	150.6	51.4
	SO2	136	5.54	130.46
	NOx	72	33.30	38.7
	CO	9748	2663.6	7084.4
	VOCs	466	229.4	236.6

DEQ's decision to allow Wah Chang to avoid PSD permitting requirements is also based on "unassigned emissions." Unassigned emissions are not actually emissions. Rather, they are placeholders held over from baseline actual emissions that a source can dip into as needed when making future changes that increase emissions -- even if decades have passed since the plant actually emitted pollution at that level. The stated purpose of unassigned emissions is to "track and manage the difference in the quantity of emissions between the netting basis and what the source could emit based on the facility's current physical and operational design." OAR 340-222-0045(1). They are calculated by subtracting the source's current PTE and any banked emission reduction credits from the "netting basis." *Id.* Under Oregon law, a facility can reinsert its unassigned emissions into its PSEL at any time to offset a planned modification that would result in an emissions increase. Under the federal minimum requirements, on the other hand, creditable emissions reductions must be **contemporaneous** with the increase in emissions caused by the physical or operational change. 40 C.F.R. § 51.166(b)(3)(i)(b). The federal regulations also state that no emissions "lookback" can reach back past 1990. 40 C.F.R. § 51.166(b)(47)(ii).

For the reasons described above, Wah Chang's proposed action is subject to PSD according to the minimum federal regulatory floor. However, Wah Chang avoids the PSD program through application of DEQ's industry friendly PSEL, "netting basis" and "unassigned emissions" program. Application of the minimum federal requirements would yield air quality benefits for Oregon because Wah Chang would be required to, among other things, demonstrate that its increased emissions would not cause or contribute to a violation of ambient air quality standards or visibility in class I areas, and provide a BACT analysis resulting in a BACT permit limit for VOCs. However, because of DEQ's unlawful approach to PSD permitting, Wah Chang is able to circumvent these requirements and the Clean Air Act and simply inform DEQ that its emissions are significantly increasing. By allowing Wah Chang to use "unassigned emissions" to escape PSD, DEQ is directly contradicting its mission to be a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.

NEDC Requests that DEQ Provide Answers to the Following Questions That DEQ's Permitting Process Fails to Adequately Address.

The following questions present important issues for the DEQ to consider, and communicate to the public, in issuing this permit. NEDC has been unable to find answers to

these questions by reviewing the information provided thus far by DEQ. NEDC therefore requests that the agency answer these questions in its response to public comments:

- 1) How did DEQ calculate the current PSEL for the Wah Chang facility?
- 2) How did DEQ calculate Wah Chang's "netting basis"?
- 3) Has Wah Chang been subject to any rules, orders or permit conditions that reduced allowable emissions?
- 4) Has Wah Chang transferred or banked any emissions credits?
- 5) When did Wah Chang cease operation of one of its original zirconium kilns?
- 6) How does DEQ's approach ensure: (a) the protection of ambient air quality standards; (b) class I area visibility; (c) or currently existing air resources in Oregon?
- 7) When did Wah Chang last emit pollutants at a level equal to the netting basis?
- 8) Are the unassigned emissions now being used to offset increases in the PSEL generated during the last ten years or at a previous time?
- 9) With respect to this particular permitting action, how is DEQ's method of using unassigned emissions to allow Wah Chang to avoid PSD as stringent as the federal regulations?
- 10) If Wah Chang did not have any "unassigned emissions" would this modification be subject to PSD?
- 11) What is the source of DEQ's authority to allow a facility to escape PSD by utilizing unassigned emissions when the difference between actual emissions in any two year period during the last ten years and the sources' projected actual emissions after the change exceed the significant emission rate (SER) threshold?
- 12) How have pollution controls or process practices reduced fugitive VOC emissions on a production throughput basis since the "baseline period?"
- 13) How have methods of monitoring, testing, or calculation reduced reported fugitive VOC emissions since the "baseline period?"
- 14) Has fuel use in the Ammonia recovery boilers #1 & #2, R&D boiler, Direct fired Forge Furnaces (7), and the Zirconium Oxide Kilns increased with the addition of the new Zirconium Kiln?

Thank you in advance for responding to the above questions.

Sincerely,

/s/ Kristen Monsell

Kristen Monsell
NEDC Law Clerk

/s/ Aubrey Baldwin

Aubrey Baldwin
Pacific Environmental Advocacy Center
Attorney for NEDC