EQCMeeting1of2DOC20070816

Part 1 of 2

OREGON
ENVIRONMENTAL QUALITY
COMMISSION MEETING
MATERIALS 08/16/2007

State of Oregon
Department of Environmental Quality

EQC Meeting Agenda
Thursday, August 16
EcoTrust Building
Portland, Oregon

Thursday, August 16

Time	Item	Topic	Notes
8:30 60 min		Executive Session	
9:30 60 min	C	Informational Item: Director's Dialogue	Stephanie Hallock
10:30 15 min.		Break	
10:45 30 min	D	Action Item: Request for Dismissal of Contested Case No. AQ/AB-WR-05-187 regarding Alpine Abatement Associates, Inc.	Jane Hickman
11:15 45 min	E	Public Forum	
12:00 45 min		Lunch	
12:45 45 min	G	Public Comment and Commission Discussion on Field Burning	
1:30 30 min	F	Action Item: Delegation of Lane Regional Air Protection Agency Funding Authority	Andy Ginsburg
2:00 15 min	A	Preliminary Commission Business: Adoption of Minutes of the June 21-22, 2007 Meeting	
2:15 15 min		Break	
2:30 45 min	B	Action Item: Finding of no major adverse impact from best available technology determination for secondary wastes generated at the Umatilla Chemical Demilitarization Facility; and Informational Item: Update on the Status of the Umatilla Chemical Agent Disposal Facility (UMCDF)	Joni Hammond and Rich Duval
3:15 60 min	H	Temporary Rule Adoption: Oregon Title V Operating Permit Program Fee Increase	Andy Ginsburg, Uri Papish, Andrea Curtis
4:15 15 min	I	Commissioners' Reports	
4:30		End of Meeting	

Contact: Helen Lottridge (503) 229-6725
Revised 8/9/2007

Oregon Environmental Quality Commission Meeting
August 16, 2007

EcoTrust Conference Center
721 NW 9th Avenue
Portland, Oregon 97209

The Commission will hold an Executive Session from 8:30 am to 9:30 am to consult with counsel concerning legal rights and duties regarding current or potential litigation against the DEQ. Only representatives of the media may attend and media representatives may not report on any deliberations during the session.[1]

Thursday, August 16—Regular meeting begins at 9:30

Note: Agenda items are taken out of order due to scheduling requirements and revisions to the agenda.

C. Informational Item: Director's Dialogue
DEQ Director, Stephanie Hallock will present information about current issues pertaining to the Department.

D. Action Item: Request for Dismissal of Contested Case no. AQ/AB-WR-05-187
The Commission is asked to dismiss the Petition for Commission Review due to no timely filing of brief and exceptions on behalf of Alpine Abatement, Inc.
Jane Hickman, Department of Environmental Quality

E. Public Forum
The Commission will provide members of the public an opportunity to speak to the Commission on environmental issues that are not part of the agenda, or for which there is otherwise no public testimony at this meeting. Individuals wishing to speak to the Commission must sign a request form at the meeting and limit presentations to five minutes. The Commission may discontinue public forum after a reasonable time if a large number of speakers wish to appear. In accordance with ORS 183.335(13), no comments may be presented on Rule Adoption items for which public comment periods have closed.

G. Public Comment and Commission Discussion on Field Burning

F. Action Item: Delegation of Lane Regional Air Protection Agency Funding Authority
The Department wishes to formalize the long-standing and efficient practice of funding Lane Regional Air Protection Agency (LRAPA) annual operating costs through a DEQ budget line item. DEQ recommends that the Commission delegate to the Director the EQC's authority under ORS 468A.175 to (1) consider requests from LRAPA for state funding, (2) receive notice of LRAPA's applications for federal financial assistance, and (3) determine whether to distribute funds to regional air quality authorities such as LRAPA.
Andy Ginsburg, Department of Environmental Quality

[1] This executive session will be held pursuant to ORS 192.660(1)(f), 192.660(1)(h) and ORS 192.660(1)(i). .

A. Preliminary Commission Business: Adoption of Minutes of the June 21-22, 2007 Meeting

The Commission will review, amend if necessary, and approve draft minutes of the June 21-22, 2007, Commission meeting.

B. (1.) Informational Item: Update on the Status of the Umatilla Chemical Agent Disposal Facility (UMCDF)

Joni Hammond, DEQ Eastern Region Division Administrator, and Rich Duval, Administrator of DEQ's Chemical Demilitarization Program will give an update on the status of recent activities at the Umatilla Chemical Agent Disposal Facility (UMCDF). In August 2004, the Commission gave approval to start chemical weapon destruction at UMCDF and DEQ's Chemical Demilitarization Program continues close oversight of work at the facility.
Joni Hammond and Rich Duval, Department of Environmental Quality

(2.) Action Item: Finding of No Major Adverse Impact from Best Available Technology (BAT) Determination for Processing of Secondary Waste Generated at the Umatilla Chemical Agent Disposal Facility (UMCDF)

Secondary wastes at the site are now being are now being placed into storage in lieu of destruction. The Department recommends that the Commission concur with the Department's Best Available Technology (BAT) determination and find that using the metal parts furnace and the deactivation furnace system for treatment of hazardous waste that was originally destined for disposal in the dunnage furnace will result in no major adverse impact to human health and the environment.
Joni Hammond and Rich Duval, Department of Environmental Quality

H. Temporary Rule Adoption: Oregon Title V Operating Permit Program Fee Increase

Oregon's Title V Operating Permit Program contributes to the prevention of air pollution and helps reduce the number of unhealthy air days and the risks from air toxics. The federal Clean Air Act requires each state's Title V program to be fully funded by permit fees.

The proposed increase to Oregon's Title V Operating Permit Fees is needed to cover the reasonable costs of the Department in implementing Oregon's Title V Operating Permit Program. Failure to adequately fund Oregon's Title V Operating Permit Program could affect the Department's ability to maintain federal approval of the state program.
Andy Ginsburg, Uri Papish and Andrea Curtis, Department of Environmental Quality

I. Commissioners' Reports

Adjourn

Future Environmental Quality Commission meeting dates for 2007 include:

October 18 – 19 in Western Region, Coos Bay
December 13 – 14 in Portland

Agenda Notes

* **Rule Adoptions**: Hearings have been held on Rule Adoption items and public comment periods have closed. In accordance with ORS 183.335(14), no comments may be presented by any party to either the Commission or Department on these items at any time during this meeting.

Staff Reports: Staff reports for each item on this agenda can be viewed and printed from DEQ's Web site at http://www.deq.state.or.us/about/eqc/eqc.htm. To request a particular staff report be sent to you in the mail, contact Toneasha Kelly, Department of Environmental Quality, Director's Office, 811 SW Sixth Avenue, Portland, Oregon 97204; telephone 503-229-5990, toll-free 1-800-452-4011 extension 5990, or 503-229-6993 (TTY). Please specify the agenda item letter when requesting reports. If special physical, language or other accommodations are needed for this meeting, please advise Ms. Kelly as soon as possible, but at least 48 hours in advance of the meeting.

Public Forum: The Commission will provide time in the meeting during the late morning of Friday, June 22, members of the public to speak to the Commission. Individuals wishing to speak to the Commission must sign a request form at the meeting and limit presentations to five minutes. The Commission may discontinue the public forum after a reasonable time if a large number of speakers wish to appear. In accordance with ORS 183.335(13), no comments may be presented on Rule Adoption items for which public comment periods have closed.

Note: Because of the uncertain length of time needed for each agenda item, the Commission may hear any item at any time during the meeting. If a specific time is indicated for an agenda item, an effort will be made to consider that item as close to that time as possible. However, scheduled times may be modified if participants agree. Those wishing to hear discussion of an item should arrive at the beginning of the meeting to avoid missing the item.

The Environmental Quality Commission is a five-member, all volunteer, citizen panel appointed by the governor for four-year terms to serve as DEQ's policy and rule-making board. Members are eligible for reappointment but may not serve more than two consecutive terms.

Lynn Hampton, Chair
Lynn Hampton recently retired as Tribal Prosecutor for the Confederated Tribes of the Umatilla Indian Reservation and previously was Deputy District Attorney for Umatilla County. She received her B.A. at University of Oregon and her J.D. at University of Oregon School of Law. Commissioner Hampton was appointed to the EQC in July 2003 and lives in Pendleton.

Ken Williamson, Commissioner
Ken Williamson is head of the Department of Civil, Construction and Environmental Engineering at Oregon State University and serves as Co-Director of the Center for Water and Environmental Sustainability. He received his B.S. and M.S. at Oregon State University and his Ph.D. at Stanford University. Commissioner Williamson was appointed to the EQC in February 2004 and he lives in Corvallis.

Judy Uherbelau, Commissioner
Judy Uherbelau is a graduate of Ball State University with a B.S. in Economics/Political Science. She received a J.D. from UCLA School of Law and recently closed her law practice with Thomas C. Howser, PC in Ashland. Judy served in the Peace Corps and the Oregon House of Representatives as well as numerous boards and commissions. Commissioner Uherbelau was appointed to the EQC in February 2005 and lives in Ashland.

Donalda Dodson, Commissioner
Donalda Dodson is currently Interim Executive Director of the Oregon Child Development Coalition. Previously, she served as Administrator of the Department of Human Services Office of Family Health and as Manager of the Maternal/Child Health Program at the Marion County Health Department. Donalda has a Bachelor of Science degree in nursing and a master's degree in public health. She has chaired or served on nearly a dozen public health committees and task forces and expresses a strong interest in bringing environmental issues into the public health arena. Commissioner Dodson resides in Salem.

Bill Blosser, Vice Chair
Bill Blosser is owner of William Blosser Consulting. He is employed by, and has held several positions with CH2M Hill in Portland. Bill served as Director of the Oregon Department of Land Conservation and Development from 2001-2002 and was formerly president of Sokol Blosser Winery in Dundee, Oregon. Bill has served on and chaired numerous commissions and task forces, including terms as chair of the Water Resources Commission, chair of the Land Conservation and Development Commission and chair of the Policy Advisory Committee on Water Quality to the EQC. Bill has a Bachelor of Arts degree in history and humanities from Stanford University and a master's degree in regional planning from the University of North Carolina, Chapel Hill. Commissioner Blosser was appointed to the EQC in January 2006 and lives in Portland.

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Commissioners,

Preparation for this meeting has been pretty interesting.

We changed the Executive Session from lunch to first thing in the morning. Mike Carrier of the Governor's Office will be joining you for Executive Session and he has to leave by mid-morning.

Per my earlier email, we have also removed the strategic directions measures report from the agenda in order to add a public comment and discussion item on field burning.

We have also rearranged the order of agenda items considerably. This is partly because of moving Executive Session. In addition, we made Director's Dialogue the first item on the regular meeting agenda so that Mike Carrier can participate.

Lynn, Stephanie would like an opportunity to introduce Joanie Stevens-Schwenger, Nina Deconcini's replacement, at the very beginning of the meeting.

Helen

Hello, Commissioners.

This is the legal advice from the Department of Justice regarding the field burning issue. This will be the only topic during Executive Session from 8:30 - 9:30 on Thursday morning.

Andy Ginsburg will be calling each of you before the meeting with additional information.

HARDY MYERS
Attorney General

PETER D. SHEPHERD
Deputy Attorney General

DEPARTMENT OF JUSTICE
GENERAL COUNSEL DIVISION

MEMORANDUM

DATE: August 3, 2007

TO: Environmental Quality Commission

FROM: Paul Logan and Larry Knudsen, Assistant Attorneys General
Natural Resources Section

SUBJECT: Legal Authority of the Environmental Quality Commission to Grant Lane County's Request to Ban Field Burning in the Willamette Valley

CONFIDENTIALITY OF THIS MEMORANDUM

This memorandum is a confidential and privileged attorney – client communication containing legal advice to the Environmental Quality Commission (the Commission). If this memorandum or its contents are shared with a third party without consulting the Department of Justice, there is a risk that confidentiality and privilege may be waived. Therefore, to maintain confidentiality and privilege, this memorandum should not be attached to, nor made a part of, an agenda for any public meeting, nor should it be discussed except in a confidential meeting.

INTRODUCTION AND EXECUTIVE SUMMARY

By letter dated June 19, 2007, the Lane County Board of Health and Lane County Board of Commissioners (Lane County) requested that the Commission prohibit the field burning of grass seed or cereal grain crop residues in Multnomah, Washington, Clackamas, Marion, Polk, Yamhill, Linn, Benton and Lane Counties (the Willamette Valley Counties) during the 2007 and 2008 field burning seasons. Lane County principally requests that the Commission exercise its statutory authority, upon finding "extreme danger to public health or safety," to order a "temporary emergency cessation" of all field burning in the Willamette Valley Counties.

Although the Commission's temporary emergency authority clearly encompasses wildfires or similar events causing a drastic increase in air pollution that arise suddenly and unexpectedly, it is not clear whether that authority extends to the level of air pollution caused by foreseeable, routine field burning permitted by existing statutes and rules. To order a temporary emergency cessation, the Commission must first make specific findings of fact, supported by evidence, that the public health hazards posed by field burning meet the legal standard of "extreme danger to public health or safety." Second, the arguably known and foreseeable public health hazards that will result from planned field burning must qualify as an "emergency." If the

Commission determines that the evidence supports a finding of extreme danger to public health or safety that constitutes an emergency, then it may order a temporary emergency cessation for part or all of 2007 (but probably not for 2008). Any such order, however, would likely be challenged in court, and depending upon the evidence supporting the order, there could significant legal risk that a reviewing court would set the order aside.

In addition to its principal request, Lane County also asks that the Commission utilize three non-emergency statutory authorities to reduce or prohibit field burning by rule. In contrast to a temporary emergency order, acting under those non-emergency authorities would necessitate a more lengthy process requiring rulemaking, public comment and hearing, consulting with Oregon State University, and making specific findings of fact to support restricting or prohibiting field burning. Because of the specific findings requirements for such rules, we recommend that Commission engage in a formal and thorough fact-finding process as part of or in advance of rulemaking.

Of the three non-emergency authorities, only one would allow the Commission to act during 2007, and even then the Commission could only restrict the time, place or manner of field burning pursuant to burning permits that the Commission is required to issue for 65,000 acres. To issue such restrictions before the end of the 2007 burning season, the Commission would have to adopt a temporary rule in order to shorten the process.

For the 2008 burning season and beyond, the non-emergency authorities also allow the Commission to restrict the time, place or manner of burning pursuant to burning permits, and additionally allow it to issue burning permits for less than 65,000 acres (or not to issue any permits). However, by statute the Commission may reduce the amount of acreage receiving burning permits only if it acts between January 1 and June 1 of any year, and only upon finding, after public hearing, that "other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed."

SUMMARY OF LEGAL AUTHORITY APPLICABLE TO LANE COUNTY'S REQUESTS

I. **Principal request:** Upon a finding of extreme danger to public health or safety, order temporary emergency cessation of all open field burning, propane flaming or stack and pile burning in the Willamette Valley Counties for the 2007 and 2008 burning seasons, pursuant to ORS 468A.610(9).

Brief answer: The Commission may order temporary emergency cessation of all field burning in 2007 (but probably not for 2008) in any area of the Willamette Valley Counties if (1) it finds that field burning contributes to "extreme danger to public health or safety" and (2) that the extreme danger is an "emergency."

II. **Second Request:** Pursuant to ORS 468A.610(8)(b), cease issuing field burning, propane flaming or stack and pile burning permits upon finding, after public hearing, that "other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed."

Brief answer: Under ORS 468A.610(10), the Commission may make this finding only between January 1 and June 1 of each year. The Commission could hold public hearings before January 1, but must formally make the required findings and enact a rule prohibiting permit issuance between January 1 and June 1.

III. **Third Request:** Pursuant to ORS 468A.595(1), prohibit or restrict field burning by rule as necessary to carry out the policy of ORS 468A.010.

Brief Answer: The Commission may not reduce the amount of acreage allowed field burning permits, set by statute at 65,000 acres, unless it satisfies the hearing, findings and timing requirements discussed with the second request above. So long as it issues permits to burn 65,000 acres, though, the Commission need not comply with those requirements, and may otherwise restrict field burning by rule under ORS 468A.595(1). Before adopting rules, however, the Commission must consider whether the rules are necessary to carry out the policy of ORS 468A.010 (which might require findings of fact), and it must consult with Oregon State University.

IV. **Fourth Request:** Pursuant to ORS 468A.595(2), adopt by rule a "more rapid phased reduction" of field burning in the Willamette Valley Counties.

Brief Answer: The Commission may adopt rules for a "more rapid" phased reduction only if another phased reduction program exists. Because no other phased reduction currently exists, the Commission cannot exercise this authority. Further, ORS 468A.595(2) limits the Commission to a "more rapid" phased reduction, and does not allow the Commission to reduce the amount of acreage allowed burning permits.

BRIEF HISTORY OF OREGON FIELD BURNING LEGISLATION

Field burning legislation in Oregon was first enacted in 1955 in order to protect property and lives from the spread of fire. Since then, the emphasis of field burning has gradually shifted from fire safety to pollution control.

In 1969, after the legislature adjourned, field burning caused significant air pollution in the Willamette Valley, particularly in the Eugene area. In response, the 1971 legislature substantially amended the field burning regulatory scheme and changed its primary purpose to protecting public health from air pollution. Significantly, it banned field burning in the Willamette Valley after January 1, 1975, and established a committee to seek alternatives to burning.

In 1975, however, the legislature repealed the ban. In its place, the legislature capped the amount of acres allowed to be burned and mandated a phased reduction in acreage for future years. The 1979 legislature increased the cap to 250,000 acres per year, eliminated phased reduction, and continued to fund the search for alternatives. This system persisted for 21 years, until 1991.

In 1988, excessive field burning smoke decreased visibility on Interstate 5 and contributed to an infamous multi-vehicle accident that claimed numerous lives. The legislature reacted by significantly overhauling the field burning statutory scheme in 1991. Among the many changes, it imposed a phased reduction of the maximum acreage allowed to be burned, from 250,000 acres in 1991 to 65,000 acres by 1998.

ANALYSIS OF LANE COUNTY'S REQUESTS

I. Principal request: Upon a finding of extreme danger to public health or safety, order temporary emergency cessation of all open field burning, propane flaming or stack and pile burning in the Willamette Valley Counties for the 2007 and 2008 burning seasons, pursuant to ORS 468A.610(9).

Brief answer: The Commission may order temporary emergency cessation of all field burning in 2007 (but probably not for 2008) in any area of the Willamette Valley Counties if (1) it finds that field burning contributes to "extreme danger to public health or safety" and (2) that the extreme danger is an "emergency."

Lane County's principal request is that the Commission exercise its authority under ORS 468A.610(9) to order a "temporary emergency cessation" of all field burning in the Willamette Valley Counties upon finding "extreme danger to public health or safety." The statute reads:

> Upon a finding of extreme danger to public health or safety, the commission may order temporary emergency cessation of all open field burning, propane flaming or stack or pile burning in any area of the [Willamette Valley Counties].

The scope of the Commission's authority therefore depends upon the meaning of "extreme danger to public health or safety" and "temporary emergency cessation." As explained below, "extreme danger" is not clearly defined, but probably has two possible meanings: nothing less than the most severe danger (such as death), or something less dangerous but at least a very severe danger (which includes the range of dangers from very severe through death). The legislature intended to allow the Commission reasonable discretion to determine how severe the danger must be. To find extreme danger to public health or safety, the Commission must first make specific findings of fact that field burning contributes to air pollution levels that cause the most severe danger or at least very severe danger to public health or safety in the Willamette Valley Counties. Furthermore, the extreme danger must qualify as an "emergency," meaning that it is unforeseeable or rarely able to be exactly foreseen.

If the Commission finds extreme danger to public health or safety that constitutes an emergency, it may order a temporary emergency cessation of all field burning in any portion of the Willamette Valley Counties for any portion of the 2007 burning season. The maximum duration of the order would be limited by the period of the extreme danger to public health or safety. At this time, however, the Commission probably cannot order a temporary emergency

cessation for the 2008 burning season, because it is unlikely that field burning a year in the future would qualify as an emergency at the present time. Nevertheless, it is possible that the Commission could order a temporary emergency cessation in 2008 for the 2008 burning season, subject to finding extreme danger that constitutes an emergency at that time.

The Commission's order for a temporary emergency cessation may be challenged in court. It would be subject to hearings for a temporary restraining order and preliminary injunction, as well as extensive discovery and a mini-trial to determine whether the Commission based its decision upon substantial evidence that would enable a reasonable person to reach the same conclusion. Thus we recommend that the Commission thoroughly review all available evidence before ordering a temporary emergency cessation.

A. Methodology for Interpreting Statutory Terms

Whether the Commission may grant Lane County's requests depends upon the interpretation of Oregon statutes which convey to the Commission the authority to regulate and prohibit field burning. The interpretation of statutes follows the analytical method dictated by the Oregon Supreme Court in *PGE v. Bureau of Labor and Industries*, 317 Or 606, 859 P2d 1143 (1993).[1] *PGE* sets out a three-step analysis, with the goal of ascertaining the legislature's intent. The first step is to examine the statute's text and context to determine whether any ambiguity exists. *Id.* at 610-11. A statute is ambiguous if it is capable of at least two "reasonable" interpretations. *State v. Cooper*, 319 Or 162, 167, 874 P2d 822 (1994). At this first level of analysis, the court does not choose between two reasonable interpretations, even if one is more likely than the other. *State v. Stamper,* 197 Or App 413, 417, 106 P3d 172, *rev den*, 339 OR 230 (2005).

If the statute is clear at the first level, the analysis ends. *PGE*, 317 Or at 611. But if it is capable of at least two reasonable interpretations, then the analysis proceeds to the second level and examines the statute's legislative history.[2] *Id.* at 611-12. If the statute is still ambiguous, the

[1] If a statute is interpreted by a state agency or commission, then in addition to the *PGE* analysis, Oregon courts also apply the analytical methodology set forth in *Springfield Educ. Ass'n v. School Dist.*, 290 Or 217, 621 P2d 547 (1980). For example, the recent case of *Vickers/Nelson & Assocs. v. Envtl Quality Comm'n*, 209 Or App 179, 148 P3d 917 (2006), utilized the *Springfield* analysis. Although the courts have not dictated how to choose between the two, in this case both analyses yield virtually the same result. The first step under *Springfield* is to determine whether the term to be interpreted is an "exact term" (a term subject to a precise definition, such as "Marion County"), an "inexact term" (a term not precisely defined, at least on its face, such as "operator" of a facility), or a "delegative term" (a term for which the legislature grants discretion to the agency or commission to interpret, such as "good cause"). *Id.* at 184. Inexact terms are interpreted according to the *PGE* methodology, *id.* at 185, the same analysis followed in this memorandum. The term "emergency" is most likely an inexact term subject to *PGE* analysis, and thus would be interpreted per *PGE* as in this memorandum. The term "extreme danger" may be delegative, which would confer interpretive discretion upon the Commission, but this memorandum concludes upon the *PGE* analysis that the Commission has similar discretion to interpret the meaning of "extreme danger." Thus whether the terms are analyzed under the *PGE* or *Springfield* methodologies, the outcome is virtually the same.

[2] Contrary to *PGE*, ORS 174.020(1)(b) arguably allows courts to consider legislative history without first finding ambiguity or identifying a choice between two reasonable interpretations, and some courts do so. *See, e.g., Bobo v. Kulongoski*, 338 Or 111, 117-18, 107 P3d 18 (2005).

analysis moves to the third, final level and considers relevant canons of statutory construction. *Id.* at 612.

B. Extreme danger to public health or safety

1. First-level analysis: text and context.

Lane County's request cites medical studies to support its assertion that field burning endangers public health or safety. Those studies conclude that exposure to certain levels of particulate matter, specifically $PM_{2.5}$, endangers public health. However, the Commission cannot order a temporary emergency cessation of field burning unless it finds "extreme" danger to public health. Thus the meaning of "extreme" danger is critical to the breadth of the Commission's authority.

To interpret the term extreme, the *PGE* methodology begins with an examination of the statutory text. The statute does not define the term, and Oregon courts have not interpreted it in any published opinion. Thus we look to the term's "plain, natural and ordinary meaning." *PGE*, 317 Or at 611. Because it is not a term of art, its ordinary meaning is presumed to be reflected in a dictionary. *In re Marriage of Massee & Massee*, 328 Or 195, 202, 970 P2d 1203 (1999). The dictionary definition of a term does not necessarily dictate its interpretation. *See, e.g., State v. Glapsey*, 337 Or 558, 564-65, 100 P3d 730 (2004). But dictionaries often establish a range of reasonable alternatives to be considered in the context of the statute. *See, e.g., State v. Holloway*, 138 Or App 260, 265, 908 P2d 324 (1995).

Most Oregon appellate courts refer to *Webster's Third New Int'l Dictionary*. *See, e.g., Pacificorp Power Mktg., Inc. v. Dept. Revenue*, 340 Or 204, 215, 131 P3d 725 (2006). In this case, *Webster's Third New Int'l Dictionary* 807 (unabridged ed 1993) defines extreme as "existing in the highest or the greatest possible degree : very great : very intense" or "marked by great severity or violence : most severe : most stringent." Thus the definition of extreme danger to public health includes the "most severe" or "greatest possible degree" of danger, probably meaning death. The definition also includes "very great" danger or danger "marked by great severity" and suggests something less than the most severe danger, but still very severe.

The *PGE* methodology additionally directs us to examine the statute's context. Context may include other provisions of the same statute, or other statutes on the same subject matter. *Vsetecka v. Safeway Stores, Inc.*, 337 Or 502, 508, 98 P3d 1116 (2004); *State v. Carr*, 319 Or 408, 411-12, 877 P2d 1192 (1994). In this case, though, no other field burning or air quality statute defines the term extreme danger. In fact, no other Oregon statute uses the term extreme danger. In context, a finding of extreme danger allows the Commission to order a temporary "emergency" cessation. The use of the term emergency reinforces that extreme danger ought to be severe, but does not resolve how severe.

Thus the first-level analysis of the text and context allows at least two reasonable interpretations: first, that extreme danger to public health means nothing less than the most severe danger, such as death; or second, something less but at least very severe danger (which

includes the range of dangers from very severe through death). Because two reasonable interpretations remain, the analysis continues with the legislative history.

2. Second-level analysis: legislative history.

The second level of analysis in the *PGE* methodology concerns legislative history. Evidence of the legislature's intent may include the comments of legislators and legislative counsel in committee hearings. *Davis v. O'Brien*, 320 Or 729, 742-45, 891 P2d 1307 (1995); *State v. Wolleat*, 338 Or 469, 476, 111 P3d 1131 (2005). In this case, the phrase "extreme danger to public health or safety" was first enacted by Oregon Laws 1975, chapter 559, section 11(5). At that time, the Governor had the power to temporarily prohibit field burning upon finding extreme danger to public health or safety. The legislature subsequently transferred that authority to the Commission. Or Laws 1977, ch 650, § 8(6).

The legislative history of the 1975 statute, and all subsequent amendments, contains only one reference to the meaning of "extreme danger." A written summary[3] of the May 3, 1975 work session of the House Special Committee on Field Burning recounts that Chairman Lang, Representative Magruder and Legislative Counsel Kathleen Beaufait discussed its meaning as follows:

> Magruder asked for a definition of "extreme danger to public health and safety" as used in this bill. Kathleen Beaufait suggested that this was an acceptable standard used extensively elsewhere in the statutes though not easily definable. Chairman Lang stated that if this became a disputable fact that ended up in court, the burden of proof of "extreme danger" would lie with the Chief Executive. Magruder stated that he was extremely interested that the intent of this particular section be made clear and that the committee be in agreement as to the legislative intent - - specifically, that the bueden [*sic*] of proof does lie with the Chief Executive.
>
> Kathleen Beaufait stated that as worded, this is a judgment decision by the Governor as to "extreme danger to public health and safety."

The legislative history illustrates that the legislature did not intend to define extreme danger to public health and safety with precision, acknowledged that the term was not "easily definable," and intended to allow the Governor (and later the Commission) to exercise judgment in its interpretation. Although extreme danger is not precisely defined, the legislature understood that the term is not completely open-ended, and the Commission's discretion is not unbounded. Therefore, rather than establishing a single, exact definition, the second level of the *PGE* analysis confirms that the legislature intended to allow the Commission to exercise judgment to interpret extreme danger within a range of reasonable definitions. Pursuant to *PGE*, a court would look to legislative history to determine which of the reasonable interpretations identified at the first level the legislature intended. In this case, the first level analysis identified two reasonable interpretations from the dictionary definition of extreme. Therefore, the *PGE*

[3] The audio tape of the hearing is indecipherable.

analysis suggests that the Commission may exercise judgment to interpret extreme danger to public health as nothing less than the most severe danger, such as death, or something less dangerous but at least very severe danger (which includes the range of dangers from very severe through death). In summary, the text, context and legislative history of "extreme danger" demonstrate that the legislature intended to allow the Commission to exercise judgment as to whether extreme danger means the most severe danger only, or something less but at least very severe danger.

Because the text, context and legislative history provide sufficient guidance as to the legislature's intent, it is unnecessary to resort to the third level of analysis (canons of statutory construction).

3. *A finding of "extreme danger to public health" must determine that field burning poses, at the least, a very severe danger. The finding may cite general medical studies concerning $PM_{2.5}$ exposure, but must also be specifically tied to field burning in the Willamette Valley Counties.*

Lane County has presented a number of medical studies of the effects of $PM_{2.5}$ on public health. For example, Lane County cites a study published in the Journal of the American Medical Association in March 2006 which concluded that a short-term increase in exposure to $PM_{2.5}$ by 10 ug/m^3 caused a 1.28 percent increase in hospital admission for heart failure for patients over 65. The Commission might conclude that this study establishes that short-term increases in exposure to $PM_{2.5}$ very severely endangers the health of seniors, especially considering that hospital admission is reserved for serious illness, and that most visits to a doctor or even the emergency room do not result in hospital admission.

In addition, however, the Commission would have to link the general evidence of the dangers of $PM_{2.5}$ exposure to the specific effects of field burning on public health in the Willamette Valley Counties. To do so, the Commission would likely have to find that the levels of $PM_{2.5}$ determined by medical studies to endanger public health are comparable to the levels of $PM_{2.5}$ in the Willamette Valley Counties during the field burning season (in terms of chronic background levels and/or acute increases). The Commission would also have to find that field burning contributes to those levels, and that if field burning were prohibited, the danger to public health would decrease. The statute does not require field burning to be the sole cause of extreme danger to public health, but it must be a contributing factor.

To support an order prohibiting field burning, the Commission's findings would need to be based on "substantial evidence." As discussed below, substantial evidence entails an analysis of all the available information, not just evidence submitted by Lane County or otherwise tending to support a finding of extreme danger. Given the complexity of these factual issues, the Commission would likely rely heavily upon Department of Environmental Quality to evaluate the evidence of the danger to public health and safety posed by field burning.

C. Temporary emergency cessation

If the Commission finds that field burning contributes to extreme danger to public health or safety, then the Commission may order a temporary emergency cessation of field burning. The Commission's authority in this regard depends upon the meaning of "temporary" and "emergency." As described below, the meaning of those terms probably allows the Commission to prohibit field burning for all or any portion of the 2007 field burning season, but only as long as extreme danger persists, and only if the danger qualifies as an emergency. The Commission probably cannot at the present time extend the prohibition through the 2008 field burning season, though depending upon the evidence before it in 2008, it may be able to prohibit field burning by order that year.

1. "Emergency:" first-level analysis: text and context

The terms "temporary" and "emergency" are not defined by the statute, and have not been interpreted in a published opinion of an Oregon court. Looking to the terms' "plain, natural and ordinary meaning" as defined in *Webster's Third New Int'l Dictionary* 741 (unabridged ed 1993), "emergency" is defined as "an unforeseen combination of circumstances or the resulting state that calls for immediate action" and "a [usually] distressing event or condition that can often be anticipated or prepared for but seldom exactly foreseen." Thus the dictionary defines emergency as a situation that cannot be foreseen, or can only rarely be exactly foreseen.

Under this definition, it is unclear if the danger to public health cited by Lane County qualifies as an emergency. Field burning itself is clearly well known to and foreseen by the legislature and the Commission, as Oregon statutes require the Commission to issue permits allowing field burning each year. It is also well known that $PM_{2.5}$ generally endangers public health. The potentially unforeseen aspect is the severity of the danger that field burning poses to public health in the Willamette Valley Counties. Depending upon when the evidence of extreme danger first became available, the Commission might be able to conclude that the evidence arose so recently that the extreme danger caused by field burning was previously unforeseen and is therefore an emergency. This conclusion would rest upon the timing of when that evidence arose. Furthermore, it is unclear how recent the evidence must be to meet the definition of emergency. The older the evidence, the greater the risk that a court would determine that the extreme danger does not meet the definition of an emergency.

One could argue that although the public health danger posed by field burning is generally anticipated and prepared for, it is one of the rare emergencies consisting of a condition that can be foreseen. However, the context of the term emergency indicates that it is unlikely that the legislature intended it to mean a condition that can be foreseen. Two other statutes allow the Commission to restrict or prohibit field burning by adopting rules after the typical deliberative rulemaking process and public comment: ORS 468A.610(8)(b), the authority to restrict or cease issuing field burning permits, and ORS 468A.595(1), the authority to restrict or prohibit field burning generally. This indicates that when the Commission can foresee a future condition, the legislature probably intended the Commission to proceed with the public process called for under those two statutes.

Even though it is possible that a court would proceed to a second-level legislative history analysis, the legislative history does not comment on the meaning of emergency. The third-level, concerning statutory cannons of construction, is similarly unavailing in this case. Therefore, it is most likely that a court would find that emergency means a situation that cannot be foreseen.

2. "Temporary:" first-level analysis: text and context

The term "temporary" is defined as "lasting for a time only : existing or continuing for a limited time : IMPERMANENT, TRANSITORY" and "bearing the marks of a particular time : deriving interest from or having relation to a restricted period or special era." *Id.* at 2353. In essence, temporary means a limited period. Based solely on this definition, a temporary cessation could encompass the 2007 and 2008 field burning seasons, because it is a limited period. A temporary cessation could also be shorter or longer, so long as it is a limited period. The question is the permissible length of the limited period.

The first level of analysis also includes the terms' context, and in this case, the statute's context offers further indication of legislative intent. Context includes other provisions of the same statute, *PGE*, 317 Or at 611, and the same statute can mean the same ORS chapter. *See Morsman v. City of Madras*, 203 Or App 546, 561, 126 P3d 6 (2006). In this case, the context consists of the Commission's field burning statutes, including the Commission's two other statutory authorities to prohibit field burning: the authority to restrict or cease issuing field burning permits (ORS 468A.610(8)(b)) and the authority to restrict or prohibit field burning generally (ORS 468A.595(1)).

The context also includes a provision that restricts the period in which the Commission may exercise any of its statutory authorities to prohibit field burning: "The commission may order emergency cessation of open field burning at any time. Any other decision required under this section must be made by the commission on or before June 1 of each year." ORS 468A.610(10).[4] We understand that the field burning season typically begins after June 1 of each year, and thus once the season begins, the Commission may prohibit field burning only by ordering a temporary emergency cessation. That restriction indicates that the legislature probably intended to allow the temporary emergency cessation to last for the entire field burning season, if necessary. To categorically constrain the Commission to less than the entire season would deprive the Commission of its sole statutory authority to protect public health and safety from extreme danger that arises abruptly.[5] At the same time, the length of the temporary emergency cessation is limited to the duration of the extreme danger to public health or safety,

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[4] This provision is part of ORS 468A.610, and thus clearly applies to the authority to restrict or cease issuing field burning permits under ORS 468A.610(8)(b). It also applies to the authority to restrict or prohibit field burning generally under ORS 468A.595(1), as explained below in Section III.A.

[5] OAR Chapter 340, Division 206 (Air Pollution Emergencies) is narrower than the Commission's statutory authority to prohibit field burning by order. Further, the legislature specifically addressed field burning emergencies in the field burning statutes, and thus the general air quality statute upon which Division 206 rests might not apply to field burning.

because the Commission may not order a temporary emergency cessation unless it finds that extreme danger to public health or safety exists.

The context also indicates that a temporary emergency cessation probably cannot extend beyond one field burning season, because of the "emergency" requirement. The ordinary meaning of emergency is a situation that cannot be foreseen, or can only rarely be exactly foreseen. Therefore, an unforeseen danger may justify a temporary emergency cessation during the 2007 burning season, but the same danger, if certain to occur in 2008, will no longer be unforeseen and is probably no longer an emergency. For example, the Commission probably cannot at this time order a temporary emergency cessation for 2008 based solely on general medical studies cited by Lane County connecting $PM_{2.5}$ exposure to illness, because the Commission now knows about the general effects of $PM_{2.5}$ exposure.

On the other hand, this does not prevent the Commission from ordering a temporary emergency cessation in 2008 based upon a specific, unforeseen event that in combination with field burning poses extreme danger to public health. For example, if field burning were allowed in 2008, but an unexpected wildfire released so much $PM_{2.5}$ pollution that any additional $PM_{2.5}$ from field burning would pose extreme danger to public health, then the Commission could order a temporary emergency cessation of all field burning in the relevant area until the wildfire subsided.

Further, the legislature provided two alternative authorities to restrict or prohibit field burning when the Commission is not faced with an emergency: the authority to restrict or cease issuing field burning permits (ORS 468A.610(8)(b)) and the authority to restrict or prohibit field burning generally (ORS 468A.595(1)). To exercise those authorities, the legislature mandated public rulemaking and hearing processes. This indicates that the legislature probably intended the Commission to consider restrictions or prohibitions with the benefit of public input when immediate action is not necessary and it is able to deliberate at length. Also, the fact that those two authorities must be exercised before the burning season each year indicates that the legislature intended the Commission to supply advance notice to field burners when the Commission does not face an emergency.

3. "Temporary:" second-level analysis: legislative history

Because the first-level examination of the text and context points to only one reasonable interpretation, the *PGE* analysis ends. Even if a court moved to the second level analysis, though, the result would remain the same because the legislative history does not address or explain the meaning of temporary emergency cessation.

Therefore, the Commission probably cannot grant Lane County's request to order temporary emergency cessation of field burning for both the 2007 and 2008 burning seasons, but could prohibit the remainder of the 2007 burning season upon a finding of extreme danger to public health or safety that constitutes an emergency.

D. The Commission's findings regarding "extreme danger to public health" and its determination of whether the extreme danger qualifies as an "emergency" will be subject to judicial review, including hearings to determine whether a temporary restraining order or preliminary injunction are warranted, and a mini-trial to determine whether the Commission based its findings upon substantial evidence.

The Commission's authority under ORS 468A.610(9) allows the Commission to order a temporary emergency cessation without a hearing, public comment or other public input. As a practical matter, the Commission would issue orders to all entities holding field burning permits to prohibit field burning for a specified period in specified areas.

1. Temporary restraining order or preliminary injunction

Upon issuing the orders, an affected permit holder could challenge the Commission's order in court. A permit holder could seek a temporary restraining order to enjoin the Commission's order. If successful, the court would schedule a hearing for a preliminary injunction within a very short time frame, probably less than two weeks. If granted, a preliminary injunction would apply until the litigation concludes and the court enters final judgment. As a practical matter, a preliminary injunction would decide the fate of the order in this case because the burning season would conclude before the litigation concluded.

To obtain an injunction, the permit holder would have to prevail under one of the following three tests:

(1) The permit holder will suffer irreparable injury if the injunction is not granted, the permit holder will probably prevail upon the merits, the Commission will not be hurt more than the permit holder is helped, and the injunction is in the public interest; or

(2) The permit holder shows probable success on the merits and a possibility of irreparable harm; or

(3) Serious questions are raised and the balance of hardships tips sharply in favor of the permit holder.

2. Review for substantial evidence

An order for temporary emergency cessation of field burning is also subject to review by Oregon's circuit courts if challenged within 60 days of when the order is served. ORS 183.484(1). Mostly likely, a permit holder would seek a temporary restraining order and preliminary injunction to address the short-term effect of the orders. The permit holder could also seek review under ORS 183.484(1) to prevent similar orders in the future by establishing case law that interprets "extreme danger" and "emergency" in a way that favors the permit holder, and that defines substantial evidence as applied to orders for temporary emergency cessation of field burning.

If a court found that the Commission misinterpreted applicable legal standards, such as the extreme danger standard or the meaning of emergency, it could reverse the orders. ORS 183.484(5)(a)(A)-(B). Additionally, a court could set aside the orders if it found that the Commission findings were not supported by "substantial evidence." ORS 183.484(5)(c). A court judges substantial evidence by determining whether the record viewed as a whole would allow a reasonable person to reach the Commission's conclusion. *Norden v. Water Res. Dept.*, 329 Or 641, 649, 996 P2d 958 (2000). Thus the Commission does not have to refute all conflicting evidence. However, the court will consider all conflicting evidence, *id.*, and may allow extensive discovery and a mini-trial in which experts offer evidence and opinions. *Id.* at 648-49. The evidence is not confined to the record in front of the Commission at the time of its orders, but rather may include new evidence that the Commission never considered. *Id.* at 647. In other words, review by a circuit court can be a thorough and probing examination of the basis of the Commission's findings.

For those reasons, and because of the likelihood of litigation if the Commission orders a temporary emergency cessation, we recommend that the Commission engage in a thorough analysis of the evidence supporting and opposing the allegations of extreme danger to public health and safety before issuing any order. This could include working through Department of Environmental Quality or independent experts to analyze the studies submitted by Lane County and linking those studies to risks posed specifically in the Willamette Valley Counties.

II. **Second Request:** Pursuant to ORS 468A.610(8)(b), cease issuing field burning, propane flaming or stack and pile burning permits upon finding, after public hearing, that "other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed."

Brief answer: Under ORS 468A.610(10), the Commission may make this finding only between January 1 and June 1 of each year. The Commission could hold public hearings before January 1, but must formally make the required findings and enact a rule prohibiting permit issuance between January 1 and June 1.

In addition to its primary request for temporary emergency cessation of all field burning, Lane County requests that the Commission cease issuing permits for field burning. The Commission's field burning statutes generally require it to issue permits for the field burning of 65,000 acres in the Willamette Valley Counties, but under ORS 468A.610(8)(b) it may issue permits for less acreage (or none) if it finds, after public hearing, that "other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed."

ORS 468A.610(8)(b) states:

> Permits shall be issued and burning shall be allowed for the maximum acreage specified in subsection (2) of this section unless:

* * * * *

> (b) The commission finds after hearing that other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed.

A. Under ORS 468A.610(10), the Commission may make its finding only between January 1 and June 1 of each year. The Commission could hold public hearings before January 1, but must formally make the required findings and enact a rule prohibiting permit issuance between January 1 and June 1.

ORS 468A.610(10) requires the Commission to make its finding between January 1 and June 1 of each year. Thus the Commission cannot make this finding for the remainder of 2007. ORS 468A.610(10) states:

> The commission may order emergency cessation of open field burning at any time. Any other decision required under this section must be made by the commission on or before June 1 of each year.

The Commission could probably hold a hearing, or hearings, before January 1, but could not formally make the necessary findings or act to reduce or cease issuing permits until January 1, 2008.

B. The Commission's findings of fact that "other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed" are subject to judicial review.

Because the Commission has previously adopted rules to issue permits for 65,000 acres, *see* OAR 340-266-0060(1)(a)-(b), it is bound to follow those rules unless it amends them pursuant to another rulemaking. In other words, the Commission may not reduce or eliminate the amount of acreage allowed permits without enacting additional rules. Further, the findings themselves arguably meet the definition of a rule under the Oregon Administrative Procedures Act. ORS 183.310(9) (a rule is "any agency directive, standard, regulation or statement of general applicability that implements, interprets or prescribes law or policy, or describes the procedure or practice requirements of any agency.") The Commission's findings, therefore, would necessarily occur in the context of a rulemaking to reduce or eliminate field burning permits. As with findings of fact to support an order, the Commission's findings in a rulemaking are subject to judicial review, and the Commission should thoroughly consider all available evidence before finding whether "other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed."

Judicial review of the Commission's findings of fact in a rulemaking would be thorough and probing, just as with review of an order to ban field burning as described above. Although the precise legal standards of review for rulemakings and orders are different (at least as a technical matter), courts will carefully scrutinize the Commission's actions in either case.

Courts review whether orders are supported by substantial evidence in the record, which exists if the record viewed as a whole would permit a reasonable person to reach the Commission's findings of fact. ORS 183.484(5)(c). In contrast, recent case law indicates that courts review findings of fact in rulemakings to determine whether the Commission made the required findings of fact and whether the Commission considered those findings as part of the rulemaking. *Wolf v. Or. Lottery Comm'n*, 209 Or App 670, 686, P3d 303 (2006), *rev granted* 343 Or 115 (2007).

Generally, a court may invalidate an administrative rule only if the Commission violated the Constitution, exceeded its statutory authority or failed to comply with applicable rulemaking procedures. *Id.* at 682, *citing* ORS 183.400(4). Rules, unlike orders, are generally not required to be based on or supported by an evidentiary record. *Id.* at 684, *citing* ORS 183.335(13) ("Unless otherwise provided by statute, the adoption, amendment or repeal of a rule by an agency need not be based upon or supported by an evidentiary record."). However, where a statute requires the Commission to make findings of fact, a court will review the rulemaking record to determine whether the Commission made the required findings and whether the commission considered those findings as part of the rulemaking. If not, the court will invalidate the rule. *Id.* at 684-86. The *Wolf* case indicates that this will not be a cursory review to determine simply whether Commission made findings. Rather, it shows that courts carefully probe the rulemaking record to determine if the Commission made findings on the precise issues identified by the statute. *Id.* at 687-691. According to the *Wolf* case, judicial review ends there. A court will not proceed to review whether a commission's findings actually support the rule. *Id.* at 686. However, we expect that a court would require that the findings have a rational relationship to the rule, and that if the Commission disregarded its own findings or the rule otherwise lacked a reasonable connection to the findings, a court would invalidate the rule.

Nevertheless, the standard of review for findings of fact in rulemakings stated by *Wolf* is not completely clear, and the Oregon Supreme Court recently agreed to hear an appeal of the decision. Also, a court in a different case has remarked that review of an order for substantial evidence does not differ "in any significant way" from the review of findings mandated by statute, because both types of review require the court to determine whether the record adequately supports a commission's action. *City of W. Linn v. Land Conservation & Dev. Comm'n*, 201 Or App 419, 428, 119 P3d 285 (2005). Therefore, if the Commission intends to consider whether to reduce the amount of acreage allowed burning permits under ORS 468A.610(8)(b), we recommend that it seek additional advice to ensure its findings will comply with the statute and survive judicial review.

III. Third Request: Pursuant to ORS 468A.595(1), prohibit or restrict field burning by rule as necessary to carry out the policy of ORS 468A.010.

Brief Answer: The Commission may not reduce the amount of acreage allowed field burning permits, set by statute at 65,000 acres, unless it satisfies the hearing, findings and timing requirements discussed with Lane County's second request above. So long as it issues permits to burn 65,000 acres, though, the Commission need not comply with those

requirements, and may otherwise restrict field burning by rule under ORS 468A.595(1). Before adopting rules, however, the Commission must consider whether the rules are necessary to carry out the policy of ORS 468A.010 (which might require findings of fact), and it must consult with Oregon State University.

A. The Commission may not reduce the amount of acreage allowed field burning permits, set by statute at 65,000, unless it satisfies the hearing, findings and timing requirements of ORS 468A.610(8)(b), (10) discussed with the second request above.

The Commission has authority under ORS 468A.595(1) to restrict or prohibit field burning by class, type, extent and amount of burning to carry out the policy of ORS 468A.010. ORS 468A.595(1) states:

> In order to regulate open field burning pursuant to ORS 468A.610:
> (1) In such areas of the state and for such periods of time as it considers necessary to carry out the policy of ORS 468A.010, the Environmental Quality Commission by rule may prohibit, restrict or limit classes, types and extent and amount of burning for perennial grass seed crops, annual grass seed crops and grain crops.

However, the Commission may not reduce the amount of acreage allowed burning permits, set by statute at 65,000, unless it satisfies the hearing, findings and timing requirements of ORS 468A.610(8)(b), (10) explained under the second request above, including the requirements to make specific factual findings that "other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed," and to make these findings only between January 1 and June 1 of each year.

1. First level: text and context

At the first level *PGE* analysis of the text and context, there are at least two reasonable interpretations of whether the Commission must satisfy ORS 468A.610(8)(b), (10) in order to reduce the amount of acreage allowed burning permits. One could argue that this authority is subject to the hearing, findings and timing requirements of ORS 468A.610(8)(b), (10) because the text of the statute states: "In order to regulate open field burning pursuant to ORS 468A.610." (Emphasis added.) On the other hand, one could argue that the "pursuant to" language is not clear and is not intended to bootstrap the restrictive hearing, findings and timing requirements into ORS 468A.595(1) when the legislature did not explicitly require it. If at the first level of analysis, a statute is capable of at least two "reasonable" interpretations, the analysis necessarily moves to the second level of legislative history. *Cooper*, 319 Or at 167. "Reasonable" is a fairly low threshold referring to an interpretation that is "not wholly implausible." *Owens v. MVD*, 319 Or 259, 268, 875 P2d 463 (1994); *Stamper*, 197 Or App at 417. At this first level of analysis, the court does not choose between two reasonable interpretations, even if one is more likely than the other. *Owens*, 319 Or at 268. Both interpretations are probably reasonable because they are not wholly implausible. Because a court

could not choose between the interpretations at this level, the analysis turns to the second level of legislative history.

2. Second level: legislative history.

The legislative history illustrates that the legislature intended that the Commission may not, under ORS 468A.595(1), reduce by rule the amount of acreage allowed burning permits unless it satisfies the requirements of ORS 468A.610(8)(b), (10). ORS 468A.595(1) was first enacted by Oregon Laws 1971, chapter 563, section 2(1). At that time, ORS 468A.610 did not exist.

The 1975 legislature amended the field burning statutes and clearly directed the amount of acreage allowed burning permits under ORS 468A.610 to be subject to reduction by rules adopted pursuant to ORS 468A.595(1). For example, the legislature created ORS 468A.610(2), which stated that "[e]xcept as may be provided by rule under [ORS 468A.595], the maximum total registered acreage allowed to be open burned * * * shall be as follows." Or Laws 1975, ch 559, § 11. Additionally, the legislature amended ORS 468A.595 to add the phrase "In order to regulate open field burning pursuant to [ORS 468A.610]." *Id.* at § 5.

The 1977 legislature added the first version of ORS 468A.610(8)(b), which at that time required that permits had to be issued for the acreage specified by ORS 468A.610(2) unless the Commission found that "other reasonable and economically feasible alternatives to the practice of annual open field burning have been developed." Or Laws 1977, ch 650, § 8(5). However, the amount of acreage was still subject to restriction under ORS 468A.595 ("Except as may be provided by rule under [ORS 468A.595], the maximum total registered acreage allowed to be open burned * * * shall be:"). Therefore, the first issue was how many acres could qualify for permits. The amount of acreage was subject to reduction by rules adopted under ORS 468A.595. Once the acreage was set, the Commission had to issue burning permits for the entire acreage unless it satisfied the hearing, findings and timing requirements of ORS 468A.610(8)(b), (10). Thus in 1977, the Commission could have adopted rules under ORS 468A.595(1) to reduce the amount of acreage allowed burning permits without satisfying the hearing, findings and timing requirements of ORS 468A.610(8)(b), (10).

The 1979 legislature, however, amended the statutes once again and made clear that rules could not be adopted under ORS 468A.595(1) to reduce the amount of acreage allowed burning permits unless the Commission satisfied the hearing, findings and timing requirements of ORS 468A.610(8)(b), (10). The 1979 amendments deleted the following italicized text from ORS 468A.610(2): "*Except as may be provided by rule under [ORS 468A.595],* The maximum total registered acreage allowed to be open burned * * * shall be * * *." Or Laws 1979, ch 181, § 5(2). Also, the 1979 amendments added the following underlined text to ORS 468A.610(8): "[P]ermits shall be issued <u>and burning shall be allowed</u> for the maximum acreage specified in subsection (2) of this section unless" the Commission complied with the hearing and findings requirements of ORS 468A.610(8)(b). Thus the legislature no longer intended for the amount of acres allowed burning permits to be subject to reduction by rules adopted under ORS 468A.595,

unless the Commission first satisfied the hearing, findings and timing requirements of ORS 468A.610(8)(b), (10).

The foregoing interpretation does not violate the rule against interpreting one statute in a way that renders another meaningless. Even under this interpretation, ORS 468A.595(1) maintains independent utility. If the Commission meets the hearing and findings requirements, it can adopt rules pursuant to ORS 468A.595(1) to reduce or eliminate the acreage allowed field burning permits. Or, as described below, the Commission could adopt rules to reduce acreage, prohibit burning in certain areas, or impose other restrictions so long as it allowed for burning permits for 65,000 acres overall.

Because the legislative history resolves the legislature's intent, the *PGE* analysis ends.

B. So long as it issues permits to burn 65,000 acres, the Commission need not comply with the requirements of ORS 468A.610(8)(b), (10), and may otherwise restrict field burning by rule under ORS 468A.595(1). Before adopting rules, however, the Commission must consider whether the rules are necessary to carry out the policy of ORS 468A.010 (which might require findings of fact), and it must consult with Oregon State University.

So long as the Commission does not reduce the amount of acreage allowed permits, then it may adopt rules to otherwise restrict field burning pursuant to ORS 468A.595(1) without meeting the hearing, findings and timing requirements of ORS 468A.610(8)(b), (10).

1. Types of permissible restrictions not affecting the amount of acreage allowed burning permits

The Commission could, by rule, restrict or prohibit certain types and methods of burning, so long as 65,000 acres were allowed to be burned each year. For example, it could restrict or prohibit burning in certain areas, or on certain days or during certain times of day. It could also limit the maximum amount of acres allowed to be burned in any day, days, week or month. Additionally, the Commission could adopt those same restrictions or prohibitions in conjunction with a decreased amount of acres allowed to be burned, so long as it satisfied the hearing, findings and timing requirements of ORS 468A.610(8)(b), (10).

2. Restricting field burning under ORS 468A.595(1) requires the Commission to consider the policy objectives of ORS 468A.010, as the Commission may only restrict field burning "in such areas of the state and for such periods of time as it considers necessary to carry out the policy of ORS 468A.010."

The statute states that the Commission may only restrict or prohibit field burning in such areas and for such periods of time as it considers necessary to carry out the policy

of ORS 468A.010. That statute, as set forth below, encompasses a variety of priorities that the Commission would have to consider and balance against each other.

ORS 468A.010 states:

> (1) In the interest of the public health and welfare of the people, it is declared to be the public policy of the State of Oregon:
>
> (a) To restore and maintain the quality of the air resources of the state in a condition as free from air pollution as is practicable, consistent with the overall public welfare of the state.
>
> (b) To provide for a coordinated statewide program of air quality control and to allocate between the state and the units of local government responsibility for such control.
>
> (c) To facilitate cooperation among units of local government in establishing and supporting air quality control programs.
>
> (2) The program for the control of air pollution in this state shall be undertaken in a progressive manner, and each of its successive objectives shall be sought to be accomplished by cooperation and conciliation among all the parties concerned.

Those policies would make it more difficult to impose a complete prohibition, as requested by Lane County, rather than restrictions. For instance, the statute contains policies to restore air quality "as is practicable, consistent with the overall public welfare of the state" in a "progressive" manner. The Commission would have to identify reasons why a complete prohibition on all field burning is practicable, given that seed growers argue that there are no alternatives to field burning for certain types of crops and for steep slopes. Further, the economic value of the grass seed industry would likely need to be considered in "the overall public welfare of the state." Also, a complete prohibition might be a "progressive" step that is a continuation of the phased reduction carried out between 1991 and 1998, but there is risk that it could be interpreted as a sudden, complete ban that violates public policy.

3. *A court might infer that the Commission, when adopting rules restricting field burning under ORS 468A.595(1), is required to make findings of fact regarding whether the restrictions on field burning are necessary to carry out the policy of ORS 468A.010.*

By allowing the Commission to restrict or prohibit field burning "as it considers necessary to carry out the policy of ORS 468A.010," ORS 468A.595(1) does not appear to require the Commission to make findings of fact. It is possible, however, that a court would infer a findings requirement, or a requirement to otherwise document its determination upon thoughtful consideration of available evidence. Recent Oregon cases have stated that a legislative requirement to engage in fact-finding before adopting a rule need not be explicitly stated, or even practicable to accomplish, to become a basis for judicial review and invalidation of a rule. *Wolf*, 209 Or App at 685, *citing WaterWatch v. Water Res. Comm'n.*, 199 Or App. 598, 112 P3d 443 (2005). If a court determined that findings or other documentation of the

Commission's determination were impliedly required by ORS 468A.595(1), and the Commission had not made any findings, the court would invalidate the rule. *Id.* If the Commission made findings or otherwise documented its determination, a court would review whether the Commission made the type of findings required by the statute, and whether it considered those findings in the rulemaking. *Id.* at 686.

4. *Before adopting rules pursuant to ORS 468A.595(1), the Commission must first consult with Oregon State University, and may consult with other interested federal and state agencies.*

In addition to ensuring that restrictions or prohibitions are necessary to carry out the policy of ORS 468A.010, the Commission may not adopt rules under ORS 468A.595(1) without consulting with Oregon State University, and may consult with other federal or state agencies:

> Before promulgating rules pursuant to subsections (1) and (2) of this section, the commission shall consult with Oregon State University and may consult with the United States Natural Resources Conservation Service, or its successor agency, the Agricultural Stabilization Commission, the state Soil and Water Conservation Commission and other interested agencies. The Department of Environmental Quality shall advise the commission in the promulgation of such rules. The commission must review and show on the record the recommendations of the department in promulgating such rules.
>
> ORS 468A.595(3).

IV. Fourth Request: Pursuant to ORS 468A.595(2), adopt by rule a "more rapid phased reduction" of field burning in the Willamette Valley Counties.

Brief Answer: The Commission may adopt rules for a "more rapid" phased reduction only if another phased reduction program exists. Because no other phased reduction currently exists, the Commission cannot exercise this authority. Further, ORS 468A.595(2) limits the Commission to a "more rapid" phased reduction, and does not allow the Commission to reduce the amount of acreage allowed burning permits.

Lane County has also requested that the Commission exercise its authority to adopt by rule a "more rapid phased reduction" of field burning in the Willamette Valley Counties pursuant to ORS 468A.595(2). That statute is intended to authorize the Commission to complement another, ongoing phased reduction by requiring "more rapid" phased reduction in specified areas where more rapid reduction is appropriate, depending upon local conditions in those areas. The statute is not intended to allow the Commission to adopt a stand-alone phased reduction. Because its authority is contingent upon the existence of another phased reduction program, and no other phased reduction program currently exists, the Commission may not exercise this authority at the present time.

ORS 468A.595(2) states:

> In order to regulate open field burning pursuant to ORS 468A.610:
>
> * * * * *
>
> In addition to but not in lieu of the provisions of ORS 468A.610 and of any other rule adopted under subsection (1) of this section, the commission shall adopt rules for Multnomah, Washington, Clackamas, Marion, Polk, Yamhill, Linn, Benton and Lane Counties, which provide for a more rapid phased reduction by certain permit areas, depending on particular local air quality conditions and soil characteristics, the extent, type or amount of open field burning of perennial grass seed crops, annual grass seed crops and grain crops and the availability of alternative methods of field sanitation and straw utilization and disposal.
>
> (Emphasis added.)

The statute limits the Commission's authority to adopt additional reductions under ORS 468A.595(2) to a "more rapid phased reduction" by certain permit areas. (Emphasis added.) In other words, the legislature intended to allow the Commission to accelerate another, existing phased reduction program in areas where it is appropriate to do so. The meaning of the phrase "more rapid phased reduction" necessarily relies upon a comparison to another phased reduction. The words "more rapid" are relative by their nature, and lack meaning unless paired with a "phased reduction."

Currently, however, no other phased reduction program exists. The text of the statute indicates that the legislature intended ORS 468A.595(2) to work in conjunction with the phased reduction mandated by ORS 468A.610 or any other phased reduction adopted by rule pursuant to ORS 468A.595(1): "In addition to but not in lieu of the provisions of ORS 468A.610 and of any other rule adopted under subsection (1) of this section, the commission shall adopt rules * * * which provide for a more rapid phased reduction by certain permit areas * * *." The phased reduction mandated by ORS 468A.610 was completed by 1998[6], and the Commission has not adopted another phased reduction by rule under ORS 468A.595(1).

The Commission could adopt another phased reduction program by rule pursuant to ORS 468A.595(1), and if so, it would be able to adopt rules for more rapid phased reduction by certain permit areas under ORS 468A.595(2). Until it adopts another phased reduction program by rule,

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[6] ORS 468A.610(2) states:
(2) The maximum total registered acreage allowed to be open burned per year pursuant to subsection (1) of this section shall be:
(a) For 1991, 180,000 acres.
(b) For 1992 and 1993, 140,000 acres.
(c) For 1994 and 1995, 120,000 acres.
(d) For 1996 and 1997, 100,000 acres.
(e) For 1998 and thereafter, 40,000 acres.

though, it cannot exercise its authority to require more rapid phased reduction under ORS 468A.595(2).

In addition, the legislature did not authorize the Commission under ORS 468A.595(2) to modify a phased reduction by reducing the amount of acreage allowed burning permits. If the legislature had intended to grant this authority, it could have clearly stated it. In other portions of the field burning statutes, the legislature clearly conveyed the authority to reduce the acreage allowed burning permits and prohibit field burning. *See* ORS 468A.595(1), ORS 468A.610(8)(a)-(b), (9). Thus the legislature knew how to do so when it wished, and chose not to do so for ORS 468A.595(2).

State of Oregon
Department of
Environmental
Quality

Umatilla Chemical Demilitarization Program
Status Update
Environmental Quality Commission
August 16, 2007
(Agenda Item B)

Agent Processing at the Umatilla Chemical Agent Disposal Facility (UMCDF)

On July 8, 2007, the UMCDF completed treatment of the GB munitions stored at the Umatilla Chemical Depot (UMCD). This represents the safe demilitarization of nearly 71% of the total UMCD stockpile (only VX and HD munitions/bulk items remain).

The UMCDF has destroyed over 155,500 munitions and bulk containers filled with over 2 million pounds of GB nerve agent. This represents approximately:

- 100% of the GB munitions (155,539 munitions and bulk items)
- 100% of the GB agent
- 70.5% of all Umatilla munitions and bulk containers
- 27.3% of the original Umatilla stockpile (by agent weight)

Other UMCDF Chemical Demilitarization Program News

GASP I Judgment: The petitioners agreed with the UMCDF and DEQ's approach that the judgment should be streamlined and straightforward and leave the issue of attorneys' fees for the ORCP 68 motion (some months down the road). Thus, in mid-June 2007, Circuit Court Judge Michael H. Marcus signed a judgment remanding the EQC's determinations as to whether the UMCDF utilizes the best available technology (BAT) and has no major adverse impact on public health and the environment as it pertains to:

- Destruction of mustard ton containers containing significantly higher mercury levels than identified in the original Application,
- Destruction of hazardous waste originally intended for the Dunnage Incinerator (DUN), and
- The role of the Pollution Abatement System Carbon Filter System (PFS).

Change of Command: During a July 12, 2007, change-of-command ceremony, Lt. Col. Robert T. Stein replaced Lt. Col. Donna E. Rutten to become the Umatilla Chemical Depot's 34th commander. Lt. Col. Rutten has taken an assignment at the U.S. Northern Command at Fort Carson, Colorado. Lt. Col. Stein is a native of Pittsburgh and a commissioned officer since 1988. He most recently served in the Republic of Korea as the U.S. Forces Korea/Combined Forces Command chemical officer.

National/International Chemical Demilitarization Program Information

The Chemical Weapons Convention (CWC) milestone for destruction of 45% of the nation's original chemical agent stockpile (by weight) was met on June 18, 2007, well in advance of the December 31, 2007, requirement.

On July 26, 2007, the National Research Council (NRC) published a report entitled, "Review of Chemical Agent Secondary Waste Disposal and Regulatory Requirements." The report concluded that much of the secondary wastes produced as a result of chemical agent/weapon destruction can and should be dealt with at off-site facilities while destruction operations are carried out at the demilitarization facilities.

The committee also determined that RCRA provisions allow the submission of data from previous trial burns in lieu of conducting new trial burns, and should be used to the fullest extent possible.

Copies of the report will be made upon request.

UMCD Permit Modification Request (PMR) Activity:

APPROVALS		
PMR#	**Title**	**Approved**
UMCD-07-002-IBLK(2)	Incorporate the I-Block Storage Facility Closure Plan	06/18/07
UMCD-07-003-WAP(1R)	Disposal of Nonserviceable Material	07/26/07

UMCDF PMR Activity:

SUBMITTALS		
PMR#	**Title**	**Submitted**
UMCDF-07-033-MPF(2)	VX Agent Trial Burn Plans	07/31/07
APPROVALS		
PMR#	**Title**	**Approved**
UMCDF-07-019-PFS(2)	PFS Carbon Change-Out Conditions	06/22/07
UMCDF-06-049-MON(2)	Multiagent Monitoring for GB/VX Operations	08/02/07

IN PROCESS: In addition to the Class 2 PMR submitted during this period, the following PMRs are under Department review.

PMR#	Title	Received	Public Comment Period Close	Target Decision Date
UMCDF-05-034-WAST(3)	Deletion of the DUN and Addition of the CMS	10/25/05	12/24/05*	TBD
UMCDF-06-010-CMP(3)	Comprehensive Monitoring Program (CMP) Sampling and Analysis Plan (SAP) Changes	05/16/06	07/15/06*	TBD

IN PROCESS: In addition to the Class 2 PMR submitted during this period, the following PMRs are under Department review.				
PMR#	**Title**	**Received**	**Public Comment Period Close**	**Target Decision Date**
UMCDF-07-001-WAP(2)	Waste Analysis Plan Changes	04/12/07	06/11/07 (extd to 07/09/07 for GASP)	09/11/07
UMCDF-07-005-MISC(2)	Condition II.M-Liability Insurance Requirement Changes	01/30/07	04/02/07	10/12/07
UMCDF-07-006-DFS(3TA)	Minimum Temperature Limit Change on the DFS	01/16/07	03/19/07	11/15/07
UMCDF-07-014-MPF(2)	MPF DAL Low-Temperature Monitoring Changes	02/20/07	04/23/07	11/30/07
UMCDF-07-017-WAST(1R)	VX/HD Scrap Metal Recycling	03/29/07	N/A	08/31/07
UMCDF-07-024-CONT(2)	Annual Review and Revision of the Contingency Plan	05/17/07	07/14/07	08/15/07
*Indicates close of initial (permittee) public comment period.				

IN-PROCESS PMNS: In addition to the above requests, three Class 1 permit modification notices (PMNs) are still under Department review.		
PMR	**Title**	**Received**
UMCDF-07-008-LIC(1N)	LIC1 A&I Matrix Update	02/05/07
UMCDF-07-011-MISC(1N)	Annual Procedures Update	02/05/07
UMCDF-07-020-MISC(1N)	Miscellaneous As-Built Changes	04/26/07

Significant Events at Other Demilitarization Facilities

Anniston Chemical Agent Disposal Facility (ANCDF), Alabama

The ANCDF received its first shipment of VX 155 mm artillery projectiles on June 3, 2007, after a three-month shutdown to reconfigure the facility from rocket to projectile processing. As of July 30, 2007, the ANCDF has processed 12,901 VX projectiles (out of the original 139,581) and 8,011 gallons of VX.

Newport Chemical Agent Disposal Facility (NECDF), Indiana

As of July 31, 2007, the NECDF has neutralized 1,578,199 pounds (approximately 186,996 gallons) of VX. This represents approximately 62% of the original Newport stockpile. On April 16, 2007, the NECDF began shipment of the hydrolysate (previously being stored on site in containers) to Veolia Environmental Services in Port Arthur, Texas, for disposal by incineration. On May 8, 2007, the Sierra Club, the Chemical Weapons Working Group, and others filed a Complaint with the U.S. District Court in Indiana alleging that the shipments are an imminent hazard and violate numerous state and federal laws, including the prohibition of interstate transportation of chemical warfare agents. The NECDF has temporarily and voluntarily stopped off-site shipment of the hydrolysate.

Pine Bluff Chemical Agent Disposal Facility (PBCDF), Arkansas
The PBCDF destroyed the last of its 90,409 GB rockets on May 19, 2007, representing 13% of its original chemical agent stockpile. The facility is now preparing for the processing of VX rockets and mines, expected to begin in late 2007.

Tooele Chemical Agent Disposal Facility (TOCDF), Utah
As of July 29, 2007, 8,972.96 tons of nerve and mustard agent (65.9%) and all GB- and VX-filled munitions in the Deseret Chemical Depot have been destroyed. As of July 15, 2007, TOCDF has processed 1,671 ton containers containing HD mustard (blister) agent, 24% of the HD ton containers stored at the Deseret Chemical Depot. Processing continues to be limited to only those ton containers that show a concentration of 1 ppm or less of mercury contamination. Work continues on designing a carbon filtration system that will provide sufficient flue gas mercury removal to allow the processing of mustard that has been determined to have mercury concentrations in excess of 1 ppm.

Pueblo Chemical Agent Destruction Pilot Plant (PCAPP), Colorado
Blue Grass Chemical Agent Destruction Pilot Plant (BGCAPP), Kentucky
The design for the Pueblo Chemical Agent Destruction Pilot Plant was declared "final" on May 10, 2007, by the Bechtel Pueblo Team and the U.S. Department of Defense Program Manager for Assembled Chemical Weapons Alternatives. Road and fencing work has been completed at Pueblo, the access control point is shortly to open, and work continues on site grading and the early phases of construction. Site preparation and utility installation also continues at the Blue Grass stockpile site. A Blue Grass milestone was met on July 17 as the first direct-hire craft workers began work.

State of Oregon
Department of Environmental Quality Memorandum

Date: August 6, 2007

To: Environmental Quality Commission

From: Stephanie Hallock, Director

Subject: Agenda Item B, Action Item: Finding of No Major Adverse Impact from Best Available Technology (BAT) Determination for Processing of Secondary Waste Generated at the Umatilla Chemical Agent Disposal Facility (UMCDF)
August 16, 2007 EQC Meeting

Why this is Important

In 1997, shortly after the issuance of the original permit, a local group called GASP (Group Against Social Predation), in conjunction with the Sierra Club, the Oregon Wildlife Federation and individuals challenged the permit issuance process in court. After several rulings and appeals, a final ruling was issued in April 2007 that resulted in a June 2007 stipulated judgment.

The final judgment in GASP IV (Attachment A) sent three issues back to the EQC to make findings on best available technology and whether there is major adverse impact from using these technologies. (Two of the issues, the BAT status of the pollution filtration system and mustard agent with high mercury levels, do not have an immediate impact on facility operations and will be addressed throughout the rest of this year and 2008.) One of these issues, "the destruction of hazardous waste originally intended for the dunnage incinerator" at the Umatilla Chemical Agent Disposal Facility, has immediate effect on operations by preventing the destruction of secondary waste. These secondary wastes, such as personal protective gear (DPE suits, tap gear), wood wastes, miscellaneous metal parts and pieces, and pollution abatement system sludges, are now being stored in lieu of destruction.

Background

In the original permit application, certain waste generated from the processing of agent-filled munitions and bulk items often referred to as secondary waste (wood waste, spent carbon, spent personal protection gear, miscellaneous solids), were to be processed in a dunnage incinerator. However, technical and operational problems with the dunnage incinerators at Johnson Atoll and Toelle, Utah resulted in a decision at Umatilla not to construct a dunnage incinerator.

Site closure activities at Johnson Atoll indicated that the metal parts furnace and the deactivation furnace system were suitable replacements for the dunnage incinerator and did not cause the operational problems associated with the dunnage incinerator.

The UMCDF conducted a secondary waste trial burn in February 2007 that indicated the metal parts furnace is capable of meeting all emission limits at feed rates higher than the permitted limits for the dunnage incinerator. Further evaluation of the results showed improved destruction of the waste when compared with the results from the dunnage incinerator trial burn conducted at Johnson Atoll.

The UMCDF stopped processing secondary waste originally intended for the dunnage incinerator following the GASP IV ruling in April 2007. This waste is currently being sent to onsite storage. Storage of the waste entails containerizing, decontamination of waste containers, transporting to storage facilities, inspections of the storage facilities, transportation back to the facility, opening storage containers, reconfiguring the waste for disposal, and finally the processing of the waste.

Utilizing the metal parts furnace and deactivation furnace system makes it possible to co-process secondary waste with munitions. This allows the secondary waste to be managed with minimal employee exposure and without leaving engineering controls.

Continued storage of secondary waste would increase the overall emissions from the facility due to the extended incinerator operation, as it would be necessary to process this waste at the end of the project. Additionally, worker exposure would increase due to requirements of handling waste multiple times for containerizing, decontaminating of containers, transporting to storage areas, monitoring during storage and eventual unpacking of the stored containers for processing.

Key Issues

DEQ incorporated the processing of secondary waste into the UMCDF permit utilizing the metal parts furnace and deactivation furnace system instead of the dunnage incinerator. The GASP IV ruling halted secondary waste processing. The Commission's concurrence with the Department's BAT determination that use of the metal parts furnace and deactivation furnace system for treatment of the waste originally intended for the dunnage incinerator will result in no major adverse impact to human health and the environment and will allow the facility to return to processing secondary waste.

EQC Action Alternatives

The options available to the Commission in this matter include, but are not limited to, the following:

- Concur with the Department's best available technology determination for secondary waste treatment and find that the metal parts furnace and deactivation furnace system will not result in a major adverse impact due to secondary waste treatment.
- Take no action at this time.

Attachments

A. GASP IV Judgment
B. DEQ Memorandum - Best Available Technology for Secondary Waste at the Umatilla Chemical Agent Disposal Facility (UMCDF)

Approved:

Section: _____

Division: _____

Report Prepared By: Steve Potts

Phone: 541-567-8297, ext 27

Attachment to Best Available Technology for Secondary Waste at the Umatilla Chemical Agent Disposal Facility (UMCDF)

Umatilla Chemical Agent Disposal Facility (UMCDF)

Secondary Waste

Best Available Technology (BAT)

Data Package

August 3, 2007

Final

EXECUTIVE SUMMARY

In 1996 a Best Available Technology (BAT) findings report was created by Ecology and Environment, Inc. to recommend the BAT for the Umatilla Chemical Weapons Disposal mission including secondary waste. This assessment was made based on the information available at that time and the application of these technologies to the chemical weapons stockpile at Johnston Island (JI). The recommendation for processing certain secondary waste streams was the use of a fixed-hearth ram-feed Dunnage Incinerator (DUN). Since then, actual performance and experience information have been generated for the DUN incinerator at JI and at the Tooele Chemical Agent Disposal Facility (TOCDF) as well as performance and experience from the use of the Metal Parts Furnace (MPF) and Deactivation Furnace System (DFS) at the UMCDF. This information must be evaluated to determine if the assumptions made in 1996 remain valid or if other technology approaches are more appropriate for processing UMCDF secondary waste.

The results of the current evaluation show the benefits of using the existing MPF and DFS versus the technical challenges, costs, and schedule implications of using a DUN for processing the waste streams. To compare the three approaches, the technologies were fully assessed using the seven criteria established by the Environmental Quality Commission (EQC) in 1996 to define BAT. Overall, the data and historical information support using a combination of the existing MPF and DFS furnace systems and not the DUN, which was recommended in the 1996 findings as the BAT.

The DUN is one of four types of incinerators that were initially permitted as the main chemical munition treatment systems for UMCDF. As the name implies, the purpose of the DUN is primarily to combust dunnage wood and other secondary wastes such as spent carbon and certain miscellaneous solids (for example, pre-filters and high efficiency particulate air [HEPA] filters). Its design features a relatively simple fixed hearth that relies on batch processing for selective feed materials, rather than the roller hearth incorporated into the MPF or the rotary kiln incorporated into the DFS that

permits semi- or fully continuous processing for various feed materials. There are material handling, safety, operations, and schedule advantages gained from a continuous feed system versus the fixed hearth batch process.

Since the DUN's operation is generally limited to the treatment of combustible secondary solid wastes, its corresponding pollution abatement system (PAS) is designed on the basis of a dry pollution abatement concept. The PAS consists of a flue gas quench tower, a baghouse, a PAS Filtration System (PFS) separator (for moisture/condensate removal), and carbon filters. Certain feed materials that form acid gases such as hydrochloric acid (HCl) and sulfur oxide (SO_x) are restricted from feeding into the DUN since the dry DUN PAS does not consist of a wet scrubber, thus limiting its capacity for handling such gases. These same restrictions do not exist with the wet MPF/DFS PASs since these systems are equipped with a wet scrubber tower, a venturi scrubber, and a mist eliminator, which play an important role in acid gas scrubbing.

The DUN installed at Johnston Atoll Chemical Agent Disposal System (JACADS) did not initially operate effectively. Various technical problems caused frequent system shutdowns. The treatment of spent carbon was especially difficult with repeated ash grate clogging, and uncombusted carbon particle entrainment transferring to the afterburner during DUN operation. There was significant expectation that the technical challenges associated with the DUN operation could be resolved during disposal of wastes that were not agent-contaminated. Modifications were made in an attempt to improve the overall performance through 1997 and the DUN remained on the 1998 EPA permit. After extensive attempts to resolve the technical issues it was determined that the DUN was not optimal for disposal of designated secondary wastes (listed in table ES-1). The unit operation was finally abandoned and the furnace disassembled prior to JACADS facility closure. The lack of an acid scrubbing unit in the PAS and the unfavorable cost for operation and maintenance were some of the contributing factors to this action. This decision and some of the historical and functional performance information was not known or available in 1996 when the original assessment was performed.

These issues associated with the DUN prompted JACADS to expand the use of existing onsite incinerators (that is, MPF and DFS) to process waste streams originally intended for the DUN and other miscellaneous solid waste. CMA established an IPT to review technologies for addressing the agent-contaminated carbon. The carbon micronization system (CMS) was selected and a unit was constructed at JACADS for the pulverization of spent carbon and pneumatic feeding of the pulverized carbon particles into the DFS for treatment. The CMS successfully demonstrated the treatment of spent carbon by a JACADS performance test.

While the DUN was in the Umatilla Chemical Agent Disposal Facility (UMCDF) design, JACADS demonstrated the effectiveness of the MPF and the DFS-CMS (DFS combined with a CMS) for the treatment of secondary wastes. Wood and certain miscellaneous solids were adequately processed in the MPF and spent carbon was satisfactorily processed in the DFS-CMS. The successful use of the two existing incinerators for disposal of secondary wastes demonstrated an approach that was more efficient, safer, and economical than constructing a DUN at UMCDF, which might be prone to frequent shutdowns, fires and maintenance activities as experienced at JACADS. During the time since the closure of JACADS CMA demilitarization facilities have been able to safely and compliantly address new or emerging secondary waste streams with No Major Adverse Effects (NMAE) using either the MPF or DFS technology. The commercial application of roller hearth and rotary kiln technologies for a wide range of hazardous waste disposal further support the flexibility of these technologies.

As shown in table ES-1, the utilization of the existing incinerators at UMCDF in place of the DUN is well supported by their proven (or demonstrated) waste treatment operability and resultant cost/schedule benefits. Specific secondary wastes (for example, not agent-contaminated wood, not agent-contaminated spent carbon,) are better suited for alternate methods of treatment and disposal. The program has established acceptable alternatives and is actively working to resolve the best means to address these specific streams. The table also shows alternate disposal methods (instead of the MPF or DFS-CMS) recommended for some wastes, which include offsite disposal for not agent-contaminated wastes.

Table ES-1. Demonstrated or Recommended Alternate Options for Treatment of Secondary Wastes

SECONDARY WASTE TYPE		DEMONSTRATED OR RECOMMENDED TECHNOLOGY/ METHODOLOGY	RATIONALE FOR DEMONSTRATED OR RECOMMENDED TECHNOLOGY/ METHODOLOGY
Dunnage Wood	Agent-contaminated	MPF	Technical/cost/schedule advantage
	Not agent-contaminated	Offsite disposal	Environmental/cost/schedule advantage
Spent Carbon	Agent-contaminated	DFS/CMS based on current permit/offsite disposal shipment evaluation	Technical/safety/environmental/ cost/schedule advantage
	Not agent-contaminated	Offsite disposal; potential reuse regeneration	Technical/environmental/cost/ schedule advantage
All other Miscellaneous Solids[1]	Agent-contaminated	MPF	Technical/cost/schedule advantage
	Not agent-contaminated	Offsite disposal	Technical/cost/schedule advantage

1. excludes explosive contaminated waste, partially treated DFS ash, contaminated PCB contaminated waste and liquid waste

In an effort to systematically determine the BAT for treating the wastes slated for the DUN and other miscellaneous solid waste, three technologies (DUN / MPF / DFS) have been evaluated using the seven criteria established by the DEQ/EQC that are identified in Section 1 Introduction and background.

The findings of this comparative evaluation, especially in the categories of schedule (or rapidity of destruction) and cost, indicate that constructing and using the DUN to process secondary waste would add significant cost to the UMCDF project, add potential risk to safe operations due to the likelihood of higher than typical maintenance, as demonstrated by the experience at JACADS, and provide no schedule benefit as compared to using the MPF and DFS currently onsite. The best available technology to process secondary wastes at UMCDF is the combined roller hearth/rotary kiln technology (that is, MPF and DFS). It is more reliable than the fixed hearth technology (that is, DUN) with No Major Adverse Effects (NMAE) on workers, the public, and the environment.

The scope of this BAT package including the data, evaluations and conclusions are intended to apply specifically and only to the UMCDF.

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1. INTRODUCTION AND BACKGROUND

During the Resource Conservation and Recovery Act (RCRA) permitting process for the Umatilla Chemical Agent Disposal Facility (UMCDF), the Oregon Department of Environmental Quality (DEQ) and Oregon State Environmental Quality Commission (EQC) reviewed the permittees' application and information for determining the demonstrated use of the Best Available Technology (BAT) for secondary waste processing. Following the issuance of the RCRA Treatment, Storage, and Disposal Facility (TSDF) permit in 1997, the permittees continued to evaluate new technologies, experience, and lessons learned information to analyze other methods besides the Dunnage Incinerator (DUN) for disposing of secondary waste produced from chemical agent storage and disposal activities. The data indicated that construction and operation of the DUN was not beneficial based on the ability to process secondary wastes through two other available furnaces, the Metal Parts Furnace (MPF) and Deactivation Furnace System (DFS).

The UMCDF has completed technical evaluations to determine if secondary waste can be effectively processed via alternate methods besides the DUN. As a result, all of the DUN waste streams, with the exception of spent carbon, can be effectively treated in the MPF. The wastes originally intended to be treated in the DUN would be treated by the following alternate methods:

- Agent-contaminated dunnage wood and certain miscellaneous solid wastes will be treated in the MPF.

- Agent-contaminated spent carbon will be treated using the DFS-carbon micronization system (CMS)[1] (permit modification has been submitted).

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[1] This is an option selected for onsite treatment of spent carbon, based on the satisfactory operations carried out at Johnston Atoll Chemical Agent Disposal System (JACADS). The selection does not preclude other potential options, including offsite disposal.

- Not agent-contaminated spent carbon will be disposed of offsite (not yet permitted).

- Other wastes that are determined to be not agent-contaminated (that is, not agent-contaminated dunnage wood) will be disposed of offsite.

In this paper, the DUN and alternate waste treatment technologies are reviewed to satisfy Oregon Revised Statute (ORS) 466.055(3) to determine the BAT and ORS 466.05(5) to assess the impact to human health and the environment. These technologies are evaluated using the following EQC and DEQ criteria:

- "Types, quantities, and toxicity of discharges to the environment by operation of the proposed facility compared to the alternative technologies"

- "Risks of discharge from a catastrophic event or mechanical breakdown in operation of the proposed facility compared to the alternative technologies"

- "Safety of the operations of the proposed facility compared to the alternative technologies"

- "The rapidity with which each of the technologies can destroy the stockpile"

- "Impacts that each of the technologies have on consumption of natural resources"

- "Time required to test the technology and have it fully operational; impacts of time on overall risk of stockpile storage"

- "Cost."

This evaluation is based on operational experience at JACADS, Tooele Chemical Agent Disposal Facility (TOCDF), Chemical Agent Munitions Disposal System (CAMDS), UMCDF, standard industry practices, and commonly used waste management practices.

The BAT determination requires that a minimum technology standard is applied, although the EQC has the latitude to require more stringent standards. RCRA, which is the regulation that the facility is permitted under to manage hazardous wastes, states under the Best Demonstrated Available Technology (BDAT) that "determinations should not be based on emerging and innovative technologies," but proven methodologies. RCRA BDAT defines "available" the following three ways:

- The technology does not present a greater total risk than land disposal.
- If the technology is a proprietary or patented process, it can be purchased from the proprietor.
- The technology provides substantial treatment.

The final criterion can be defined as substantially decreasing the toxicity or substantially reducing the likelihood of migration of hazardous constituents.

Both the DUN and the MPF/DFS technologies are proven means to thermally treat agent-contaminated materials. The technologies exist and are capable of being obtained from established vendors. Because the treatments eliminate agent and reduce the volume of solid wastes requiring disposal, these technologies meet the RCRA BDAT definition.

2. SUMMARY OF RISK INFORMATION

This section provides an overview of the various risks associated with secondary waste processing at UMCDF. Using established criteria, there is no appreciable difference for the public and/or worker from using either the DUN or MPF/DFS for processing of secondary waste.

All risk results in this section are based on the UMCDF Phase 2 Quantitative Risk Assessment (QRA), published in December 2002 by Science Applications International Corporation (SAIC), under contract with the Army. This QRA supersedes the UMCDF Phase 1 QRA published in 1996, which was the basis for the 1996 BAT. The UMCDF Phase 1 QRA was completed before all the UMCDF-specific design and operational details were available, so it was updated with the Phase 2 QRA, which reflects the as-built facility and operational plans.

The purpose of the QRA is to support a risk management program designed to ensure safe disposal of the chemical weapons stockpile while minimizing risks to the public, site workers, and the environment. The QRA considers the effects of postulated accidental releases of chemical agent on both the public (the population outside the Umatilla Chemical Depot [UMCD] boundary) and workers (within the UMCD boundary). Only accidental releases of agent large enough to cause adverse health effects to the public or workers are included. The frequency and consequences associated with each type of accident are combined to estimate risk. The risks of all types of accidents are summed to arrive at the total risk.

In the QRA both public and worker risk were calculated in terms of acute fatality risk, which is the probability of fatality over a specified period of time due to a one-time exposure to chemical agent. The public risk of exposure-induced cancers also is considered for potential releases of mustard agent (nerve agents are not considered carcinogenic). Worker risk is limited to estimates of fatalities. Because some agent-related accidents could also involve explosions, the explosion effects are assessed in terms of fatalities. The cause of a worker death due to an agent-related

accident is not differentiated between explosion effects and agent exposure. Risk was not assessed for accidents involving workers where there is no potential for agent exposure (that is, typical industrial accidents that do not involve handling munitions or agent).

The QRA analyses and documentation were subjected to extensive review throughout the development of the assessment. In addition to internal peer reviews and U.S. Army Chemical Materials Agency (CMA) and UMCDF staff review, an independent expert review panel was convened to confirm that the QRA was performed using appropriate methods and models. This panel was composed of specialists in the QRA field, as well as professionals from the chemical industry and academia. The panel met on a periodic basis with the QRA staff to review modeling methods and results, and to confirm the validity of the approach. The following sections are summarized from the QRA as relative to the technologies being assessed.

2.1 Risk of Processing Secondary Wastes in DUN

Risk of processing secondary wastes in the DUN is assessed to have negligible risk (that is, less than 1×10^{-6} per year) because the amount of agent involved in a DUN accident would not be sufficient to result in public or worker risk. Regardless of how contaminated it might be, secondary wastes typically do not contain large quantities of agent.

The low amount of agent expected to be in the DUN at any one time, low population in the immediate area surrounding UMCDF, and the low potential for agent to escape from engineering controls combine to yield low consequences if a release from the DUN were to occur.

2.2 Risk of Maintaining Stockpile While DUN is Built

Because the DUN is used to process secondary waste and not the munitions themselves, any delay incurred while the DUN is constructed and systemized would not

impact the UMCDF munition processing schedule. Secondary waste that is generated could be stored until the DUN is ready and could then be processed in the DUN at a later date. Therefore, public and worker risk due to munition storage is not increased if the DUN is not available during its construction and systemization. Furthermore, there is negligible risk (that is, less than 1×10^{-8} per year) from storing secondary waste until the DUN is operational due to the relatively low level of contamination anticipated on the waste (in comparison to the munitions themselves).

2.3 Risk of Processing Secondary Waste in MPF and DFS

Secondary waste processing in the MPF and DFS is also assessed to have negligible worker or public risk (that is, less than 1×10^{-8} per year) for the same reasons as secondary waste processing in the DUN has negligible risk.

2.4 Transportation Risk Assessment (TRA)

This evaluation is designed to review the technologies available for decontamination and disposal of secondary waste on the UMCDF site, which is the current permit condition. It should not be interpreted to indicate that processing of the waste offsite cannot adequately meet the safety, environmental, and risk requirements associated with BAT determination.

The use of offsite disposal as a method of managing secondary waste cannot be considered a "technology," and accordingly, is not specifically addressed in this evaluation. It should, however, be understood that the selection of a technology as "Best Available" does not limit or preclude this technology being deployed at a TSDF location other than the UMCDF site, provided such TSDF location employs technologies for the disposal of secondary waste that are consistent with this BAT assessment.

The Army issued *Guidance for Development of Site-Specific Plans for Shipment of Chemical Agent-contaminated Secondary Waste* on June 25, 2007. This guidance describes the process that must be completed prior to making any determination of

viability regarding the use of offsite disposal as a management method for secondary waste. This process includes preparation of a TRA.

Although a TRA has not been completed for the UMCDF secondary waste, there are similarities between the secondary waste at UMCDF and the secondary waste other chemical demilitarization sites are disposing offsite that enable a comparative assessment. Based on waste characterization, packaging methods, and travel distances, some comparisons can be drawn between the UMCDF waste and the Deseret Chemical Depot (DCD)/CAMDS waste, which is undergoing a TRA. Therefore, it is reasonable to assume, based on these comparisons, that UMCDF waste may yield similar risk-based results. More detailed TRA analysis, to include UMCDF-specific data, would be required to confirm this assumption.

It is important to note that the DCD/CAMDS TRA may evaluate offsite disposal of agent-contaminated spent carbon due to available information. Ongoing efforts to better characterize the spent carbon waste at the UMCDF and other sites are in progress. Initial results indicate that the vast majority of the agent has degraded over time and very little agent remains entrained on the carbon filter media. If these results are confirmed by subsequent analysis, it is likely that offsite disposal of spent carbon may also be acceptable.

The National Research Council recommends from their *Review of Chemical Agent Secondary Waste Disposal and Regulatory Requirements* report (July 2007) Recommendation 3-4 "*The Chemical Materials Agency should select an alternative to on-site micronization followed by incineration for decontamination, and/or destruction and ultimate disposal of contaminated activated carbon. Off-site decontamination, and/or destruction and disposal of contaminated activated carbon should be pursued whenever possible.*" This recommendation is supported by an efficiency model that indicates the same technology available onsite in the DFS (a rotary kiln incinerator) is available at commercial TSDFs in capacities that do not require micronization for efficient disposal of the carbon.

With this understood, the BAT evaluation reviewed technologies that would meet the current permit limitations for onsite management of secondary waste and specifically, if the DUN furnace is the BAT for those waste streams originally intended for that unit. The selection of the DFS type rotary kiln furnace as the BAT for carbon processing should be understood to be the BAT, whether located onsite or at an offsite TSDF.

2.5 Incineration and Landfill

Since a disposal method and location for offsite disposal operations have not been determined, assessing the risk related to disposal is not possible. In addition to the disposal process itself, a number of factors dependent on the location for disposal are required for risk models, including: nearby populations, terrain, weather conditions, etc. Without this information, a quantitative assessment of offsite disposal options cannot be completed. However, some qualitative statements can be made concerning incineration and landfill:

- *Incineration.*

  - Incineration of secondary waste poses negligible risk (that is, less than 1×10^{-8} per year) to the public due to the minimal amount of agent (that is, usually less than 1 gram per drum) present on the secondary waste. Even if the area surrounding the offsite incineration site is densely populated, the relatively minimal amount of agent on the secondary waste ensures that the risk is low.

  - Worker risk associated with offsite incineration of secondary waste is not expected to be greater than incineration of secondary waste at UMCDF.

- *Landfill.*

  - Risk to the public from landfill of secondary waste (excluding spent carbon) is negligible (that is, less than 1×10^{-8} per year) based on the protection afforded by the drums and the minimal amount of agent (that is, usually less than 1 gram per drum) on the waste. Even if the transportation drums are compromised and the potential exists for agent to escape from the containers, risk is negligible. The amount of agent on the waste is minimal because the waste has previously undergone decontamination.

  - Worker risk associated with handling the transportation drums is not expected to be greater than handling operations at UMCDF.

3. UMCDF SECONDARY WASTE GENERATION

The UMCDF generates secondary wastes from processing activities. These wastes include agent-contaminated and not agent-contaminated waste streams. In the State of Oregon, chemical agent is classified under RCRA as a "P" waste stream for acutely hazardous waste (P999 for GB and VX and P998 for HD). Residues of demilitarization activities are categorized as hazardous materials and as "F"-listed waste or nonspecific sources wastes. The DUN was originally permitted to treat some of these waste streams.

3.1 Description of Original DUN Waste Streams

The waste streams that were originally permitted for the DUN include the following: agent-contaminated wood pallets, spent carbon, laboratory solids, carbon canisters, and other certain miscellaneous solid wastes, some of which may be contaminated with chemical agents. For this evaluation, the waste streams have been categorized into three groups as follows:

a. *Wood.* Munitions are transported to the facility packaged on wood pallets or in packing cases. The potential exists for some of these packing materials to be contaminated with chemical agent. Based on operational experience from JACADS, TOCDF, and UMCDF, the amount of agent-contaminated wood is estimated to be less than one (1) percent of the total wood contained at UMCD.

b. *Spent Carbon.* Activated carbon is used as an adsorbent media in the Munitions Demilitarization Building (MDB) heating, ventilation, and air conditioning (HVAC) filters, laboratory filters and for the Pollution Abatement System (PAS) Filter System (PFS) for each incinerator. Carbon filters are also used for the Agent Collection System (ACS) tank venting system and personal protective equipment (PPE) mask canisters. The HVAC and ACS filters may adsorb agent from the building ventilation system and from the tank venting system during normal operations and the PAS PFS filters, although it would be very unlikely, from exhaust gas from the PAS during off-normal conditions. The carbon from the first two filter banks in both the MDB HVAC filter housing and the ACS tank vent filter system are expected to be exposed to agent. Therefore, over the course of the UMCDF planned demilitarization operations, there will be generation of agent-contaminated carbon needing treatment. Based on the destruction removal efficiency (DRE) from agent trial burn results and monitoring via Automatic Continuous Air Monitoring System (ACAMS) before and after the PFS, it is unlikely that the PFS carbon will become contaminated with agent. Below, table 1 indicates the anticipated carbon categories, process sources and expected quantities.

c. *Miscellaneous Solids.* This waste stream includes pre-filters and high efficiency particulate air (HEPA) filters, M23 mine overpack polystyrene, wastes generated from monitoring and chemical analysis of samples in the laboratory, rags, paper, and other absorbents used in cleaning spills

and other similar wastes that may be exposed to agent. Solid wastes from the laboratory would consist of glassware, plastics, paper, metals, etc.

Table 1. Anticipated Carbon Contamination, Sources and Quantities at UMCDF

Carbon Category	UMCDF Sources	Anticipated Quantity Generated at UMCDF
Not agent-contaminated	• HVAC Banks 3, 4, 5, 6 • Laboratory HVAC • PAS Filter System Carbon	• 146,880 lbs. • 16,320 lbs. • 368,000 lbs.
Agent-contaminated	• HVAC Banks 1 and 2 • PPE Mask canister • ACS tank filter carbon	• 73,440 lbs. • 1,498 lbs. • 22,291 lbs.

Source: April 2007 CMA Secondary Waste Survey

Notes:

HVAC = heating, ventilation, and air conditioning
PAS = pollution abatement system
ACS = Agent Collection System
PPE = personal protective equipment

It is important to note that Demilitarization Protective Ensemble (DPE) was not originally included as a waste stream to be managed in the DUN in the UMCDF RCRA permit. The UMCDF RCRA application, Revision 10, March 1996, states "Discarded Demilitarization Protective Ensemble suits will be placed in containers for disposal offsite to an approved hazardous waste treatment, storage, or disposal facility." Based on the results of the MPF Secondary Waste Trial Burn (SWTB), where DPE suits, Toxicological Agent Protective (TAP) gear, high heat plastics, and absorbents were processed through the MPF with emissions below all permit and regulatory limits, DPE suits are considered as a miscellaneous solid waste treatable in the MPF along with other secondary wastes (for example, TAP gear, absorbent) not originally designated specifically for the DUN. The processing of this waste stream during operations when MPF availability exists can positively impact the secondary waste accumulation rates.

3.2 Projected Amounts of DUN-Designated Waste Streams and Treatment Options

Table 2 shows the estimated amounts of the various waste streams described in the previous section and their demonstrated or recommended disposal options.

Wood processing in the DUN was demonstrated at JACADS during the trial burns and briefly conducted during the systemization at TOCDF, but spent carbon processing, which was performance tested at JACADS, was difficult due to plugging (with ash) of the grates that provide under-fire air, higher than anticipated maintenance, and entrainment of uncombusted carbon dust to the afterburner. Using the projected waste amounts and the currently permitted (or demonstrated) processing rates for the DUN, MPF, and DFS, the processing times for each waste stream may be estimated. The processing times for treating all wood and certain miscellaneous solids are expected to be shorter for the MPF than for the DUN and the processing time for treating agent-contaminated spent carbon is anticipated to be shorter for the DFS-CMS than for the DUN on the basis of the feed rate and sustained operability.

Realizing the shortcomings of the DUN for processing spent carbon and the general operational problems experienced at JACADS and TOCDF, the permittees at UMCDF took the approach of processing the DUN-designated wastes using a combination of the MPF and the DFS. The MPF was already permitted to process wood and certain miscellaneous solids, and the permit modification request to use the DFS-CMS to process agent-contaminated carbon is currently being reviewed. For some of the wastes that have been excluded from demilitarization incineration, alternate methods (that is, offsite disposal for not agent-contaminated wood and not agent-contaminated spent carbon) are being investigated for best management practices.

To address spent carbon generated at UMCDF, the carbon can be separated into two major categories; agent-contaminated carbon and not agent-contaminated carbon. Table 1 describes the UMCDF carbon sources to each of these categories.

4. FIXED HEARTH WITH FEED RAM SYSTEM

The design of the DUN consists of two primary components: the primary chamber and the afterburner. Wastes are loaded into the primary chamber through an airlock, DUN lift system, and feed ram. The feed ram was designed to push wastes ahead along the primary chamber until the waste ash falls into a collection bin. Flue gas was designed to flow from the primary chamber to the afterburner where the combustion process was to be completed.

The primary chamber and afterburner were designed as refractory-lined with independently fired auxiliary fuel burner nozzles. Design temperatures were estimated to be 1,350°F to 1,950°F in the primary chamber and 2,000°F in the afterburner. Flue gas residency design was set at a minimum of 2 seconds in the afterburner. This incinerator was designed to be used in batch process mode.

The DUN was designed with a PAS separate from the other four UMCDF furnaces. The DUN PAS (figure 1) consisted of a quench tower, baghouse, PFS separator, carbon filter unit, and blower with an emergency backup.

The first processing step in the DUN PAS reduces the temperature from approximately 2,000°F to 350°F. This was to be accomplished with a quench tower. The temperature reduction would protect the fabric filters in the baghouse from heat. The flue gases then would go through the baghouse where particulates would be removed. The particulates would be collected in hoppers below the baghouse.

The DUN PFS separator was designed as a vertical cylinder to remove condensate from the flue gas prior to passing through the flue gas reheater. After going through the

Table 2. Projected Secondary Waste Amounts and Demonstrated or Recommended Disposal Options

Secondary Waste Type		Projected Waste Amounts (Tons)**	Demonstrated or Recommended Disposal Option
Wood	Agent-contaminated (~1%)	2	MPF
	Not agent-contaminated (~99%)	222	Offsite disposal
Spent Carbon	Agent-contaminated	49	DFS-CMS
	Not agent-contaminated	266	Offsite disposal
All other Miscellaneous Solids*	Agent-contaminated	62	MPF
	Not agent-contaminated	Not estimated	Offsite disposal

*Excludes explosive contaminated waste, partially treated DFS ash, contaminated PCB contaminated waste and liquid waste.

**Based on July 2007 estimates.

Notes:

1. Approximately 1 percent of the wood is assumed to be contaminated, although no contaminated wood has been identified yet.
2. The permitted rates are 368 lbs/hr for the DUN and 410 lbs/hr for the MPF.
3. The spent carbon processing rate demonstrated using the DFS-CMS during the JACADS trial burns was 249 lbs/hr.
4. The spent carbon processing in the DUN at the permitted rate of 368 lbs/hr was not demonstrated.
5. The total amount of miscellaneous solids does not include demilitarization protective ensemble (DPE) suits (162 tons) but does include Toxicological Agent Protective (TAP) gear (30 tons).

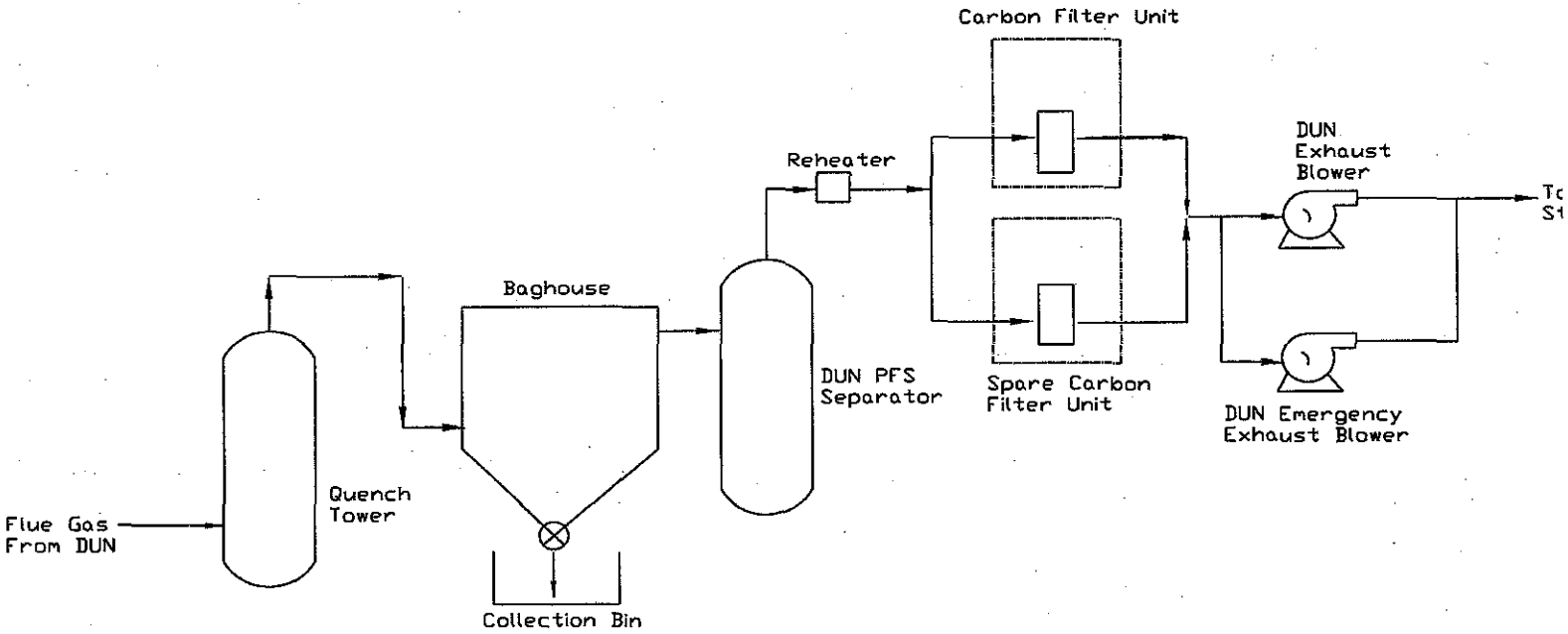

Figure 1. Simplified Process Flow Diagram of DUN Pollution Abatement System

reheater to lower the relative humidity of the flue gas, the gas then passes through one of two carbon filters. The carbon filters were to contain a bank of pre-filters, HEPA filters, two banks of carbon beds in series, followed by a final bank of HEPA filters. The flue gas would then be emitted out of the DUN stack.

A DUN was used at JACADS with minimal success and ended up being abandoned in place until closure of that facility. At TOCDF, a DUN was built with an improved design and then systemized with nonhazardous materials, but never processed chemical agent or RCRA waste streams and was abandoned in place. Issues with the DUN at JACADS include waste jams, the ram feeder riding over the waste, flare ups, and overall inefficiency of the system. After abandoning the DUN in place, JACADS successfully processed all other hazardous waste generated through either the MPF or the DFS.

5. ROLLER HEARTH FURNACE/ROTARY KILN SYSTEM

5.1 Roller Hearth Furnace (MPF)

The MPF consists of two primary components: the burnout chamber and the afterburner. It is designed to decontaminate drained munition casings and bulk items by heating them to more than 1,000°F in a refractory-lined, direct-fired, roller hearth furnace. Flue gas then flows through the afterburner where it is heated to 2,000°F. During normal operations, the feed to the MPF includes: projectiles and bulk items, mine drums, chemical agent residual heel, permitted secondary wastes, and other permitted wastes.

The MPF is designed with three separate chambers: the charge airlock (entry), the burnout chamber, and the discharge airlock (exit). The burnout chamber is partitioned into three zones that correspond to three tray locations. In the first zone, any residual agent will be vaporized. In the second zone, sufficient heat will be added to raise the temperature of the metal parts to 1,000°F. In Zone 3, the waste will be held for a minimum of 15 minutes to meet decontamination standards (actual times are higher) and await discharge monitoring.

Flue gas from the burnout chamber and exhaust gas from the discharge airlock are sent to the afterburner. The afterburner is designed to ensure that all residual chemical agent vapors and other products of combustion from the burnout chamber are completely incinerated.

When munitions or permitted waste streams are discharged from the MPF, they exit into a large cool down room. This room is cooled with large air conditioning units and exhausted through a carbon filter system. The exhaust gas is monitored to check for the presence of any agent.

The MPF has a PAS and a PFS that chemically and physically treat exhaust gases (see figure 2). The PAS/PFS systems for the MPF and DFS (as well as the Liquid Incinerators) are nearly identical and share a common exhaust stack. Each PAS has a quench tower, venturi scrubber, scrubber tower, mist eliminator vessel (sometimes referred to as the demister vessel), filter system, and a two-stage induced draft fan).

The first processing step in the PAS is to reduce temperatures and neutralize acidic byproducts in the flue gas. This is accomplished with the use of a counter flow quench tower. Flue gases exit from a furnace's secondary chamber at approximately 2,000°F. These gases are sprayed with a brine solution and are cooled to approximately 185°F to begin the pollution abatement process.

The next unit in the process is the venturi scrubber. As the flue gas enters the top of the venturi scrubber, the flue gas is sprayed with additional brine solution and transferred through the venturi section. The primary purpose for the venturi scrubber is to remove large particulates from the flue gas.

Further stripping of combustion products from the flue gas and lowering the temperature of the flue gas occurs in the scrubber tower. The temperature is lowered to 125°F to condense water vapor. Brine in the flue gas exiting the venturi scrubber is separated in the bottom section of the scrubber tower prior to the flue gas entering the packed bed and clean liquor section of the scrubber tower.

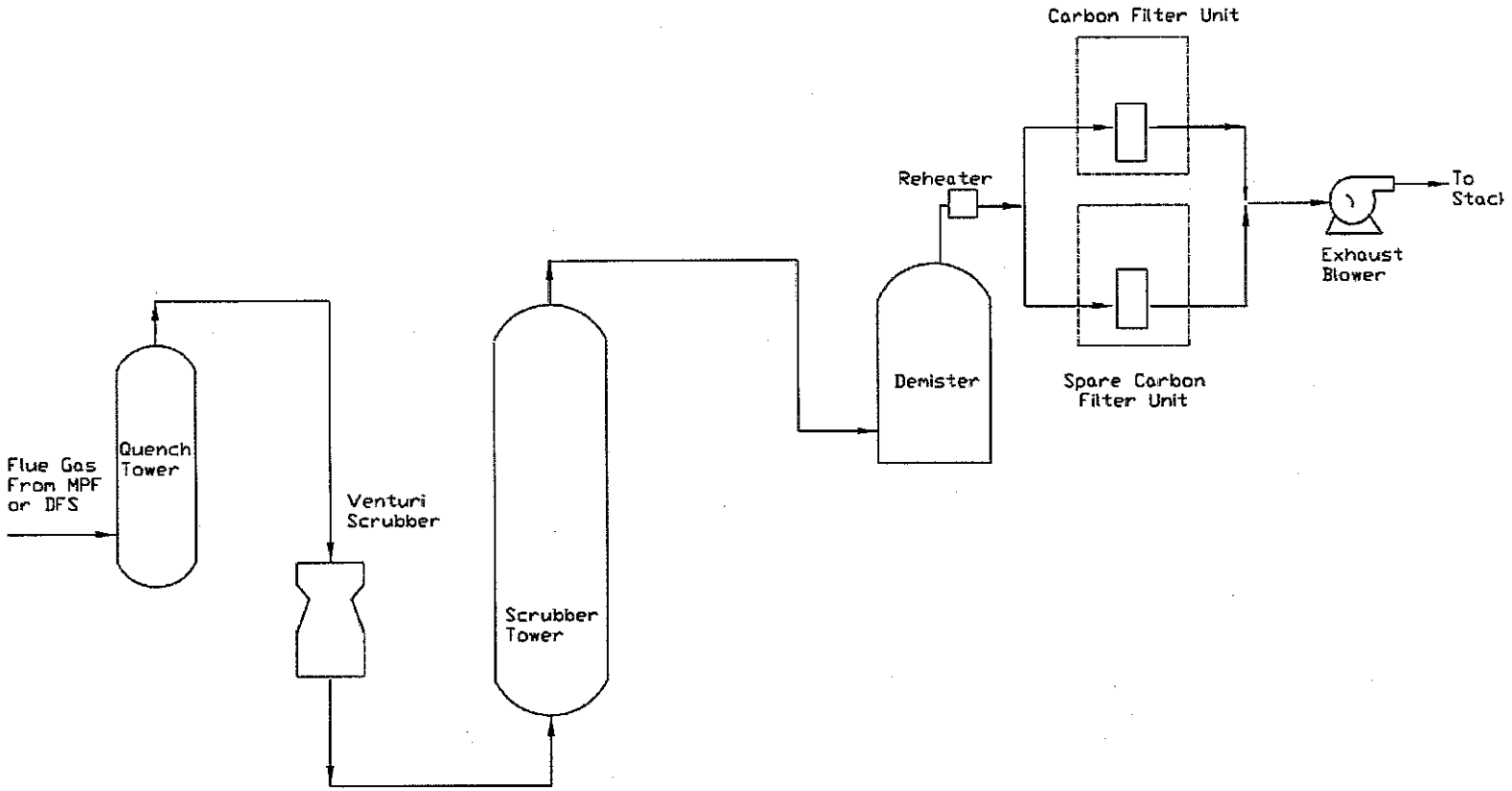

Figure 2. Simplified Process Flow Diagram of MPF/DFS Pollution Abatement System

The primary purpose of the scrubber tower is to remove acid gases from the flue gas through efficient gas-liquid contacting. Exiting flue gas from the scrubber tower enters a demister pad where entrained liquor droplets are removed from the flue gas.

The flue gas continues out of the scrubber tower into the mist eliminator vessel. Flue gas enters the bottom of the mist eliminator vessel and travels upward, coming in contact with the vertical candle elements. These elements remove metal oxides and other particulates that were not removed by the previous processes.

The flue gas is then reheated by the PFS reheater to approximately 160°F to decrease the relative humidity of the flue gas before it enters the PFS. The PFS is the final stage before the flue gas has completed the cleansing process. The flue gas will pass through a series of filter banks (pre-filter, HEPA filters, two banks of carbon filters, followed by a final bank of HEPA filters). The flue gas is then emitted out a common stack. The common stack is constantly monitored for the presence of agent, carbon monoxide, oxygen, and moisture.

Three trial burns have been performed at UMCDF using the MPF. Trial burns are regulatory requirements that are designed to push an incinerator to the limits of its established operating parameter, while demonstrating high destruction removal efficiency of the incinerator. The MPF was tested using monochlorobenzene and hexachloroethane with a spiked solution of metal oxides for the surrogate trial burn. These surrogates are harder to destroy than chemical agent. Second, an agent trial burn was conducted using bombs with residual heel of GB agent. Finally, a secondary waste trial burn was conducted using DPE suits, high heat plastics, TAP gear, and absorbents. The results of all three trial burns were favorable and all emissions were below permit and regulatory limits.

5.2 Rotary Kiln (DFS)

The DFS consists of the following major equipment: two feed chutes, rotary kiln, heated discharge conveyor, blast attenuation duct, cyclone separator, and afterburner.

Process feed enters the rotary kiln via the feed chutes, which contain two blast gates apiece. In the rotary kiln, wastes are deactivated and incinerated at temperatures above 900°F but below 1,600°F, the maximum operating temperature for the iron-chromium-nickel alloy (RA 253 MA) of which the kiln is constructed.

The flue gas then enters the cyclone separator, where particulates in the gas stream are separated out. The flue gas enters the cyclone separator tangentially near the top and the treated gas exits through the top of the cyclone separator while relatively larger particulates drop to the bottom where a container is located.

Flue gas then enters the afterburner where it is treated at between 2,000°F and 2,200°F. The flue gas is then passed through to the DFS PAS for further treatment.

Waste from the rotary kiln is transferred via the flights to the heated discharge conveyor (HDC). The HDC is an electrically heated steel enclosure with a bucket conveyor that maintains the waste above 1,000°F for an additional 15 minutes. Waste is transferred with the bucket conveyors to bins that are inside an airlock. The gate at the discharge end of the HDC is closed when these bins are changed out.

The DFS PAS is similar to the MPF PAS (figure 2) with the exception that it is sized larger and includes a cyclone separator to remove larger particulates in the flue gas (described previously) prior to entering the wet PAS. The DFS PAS also uses two PFSs when processing. Besides these exceptions, refer to the description of the MPF PAS for the DFS PAS contained in section 5.1.

Three trial burns have been performed at UMCDF using the DFS. The DFS was tested using monochlorobenzene and hexachloroethane with a solution of metal oxides placed inside simulated rocket tubes (fiberglass tubes cut to simulate the size of the shears from the rocket shear machine) for the surrogate trial burn. These surrogates are harder to destroy than chemical agent. Second, an agent trial burn was conducted using rockets with residual heels of sarin (GB) agent. Third, a Toxic Substances Control Act (TSCA) trial burn was conducted using polychlorinated biphenyl (PCB) for

DRE determination. The results of these three trial burns were favorable and all emissions limits were below permit and regulatory limits.

To demonstrate the capability of the DFS-CMS and its PAS to process spent carbon, JACADS conducted a performance test in 2002 (METCO, 2002). During the test, carbon wastes were micronized and processed through the combined DFS-CMS system at an average rate of 249 lbs/hr.

6. COMPARISON OF TECHNOLOGIES

To systematically compare the DUN (a fixed hearth technology), the MPF (a roller heath technology) and the DFS (a rotary kiln technology) for treatment of the DUN-designated and other miscellaneous secondary wastes, the seven BAT criteria developed by the EQC were used to evaluate the available disposal technologies. The characteristics of the three technologies that have been compared for each of the seven criteria are summarized in table 3. The MPF/DFS have been combined for ease of review within the table and evaluation summary.

6.1 Types/Quantities/Toxicity of Discharges to the Environment

6.1.1 DUN. The fixed hearth technology discharges may include ash from the primary chamber, fly ash collected in the bag house, liquid discharge from the quench tower wet bottom, and stack emissions. The quantity and toxicity of these discharges would depend upon the feed characteristics and dry PAS limitations that result from the lack of wet scrubbing. Spent carbon processing using this fixed hearth technology has not been fully demonstrated with the current DUN design. The permitted feed rate for secondary waste is 368 lbs/hr with an agent rate limited to 1.7 lbs/hr. UMCDF's RCRA Permit limits the amount of chlorine in the waste to less than 4 lbs/hr and Maximum Achievable Control Technology (MACT) rule limits the emissions to 32 parts per million by volume (ppmv) hydrochloric acid (HCl). The DUN and its dry PAS were designed primarily for secondary waste treatment before the MACT rule was promulgated by the Environmental Protection Agency (EPA) in 1999. Their design criteria were not as strict

Table 3. Comparison of Secondary Waste Processing Technologies

Criteria	Fixed Hearth with Feed Ram System (that is, DUN)	Roller Hearth Furnace/Rotary Kiln System (that is, MPF & DFS)
1. Types, quantities, toxicity of discharges to the environment	1. Permitted feed rate for secondary waste is 368 lbs/hr with agent rate limited to 1.7 lbs/hr. 2. PAS does not include wet scrubbing, so limiting acid gas removal. 3. Maximum metal and chlorine feed rates for DUN (lbs/hr): Arsenic = 0.00219 Chlorine = 0.04 Hydrogen Chloride = 3.63 Chromium = 0.000729 Lead = 0.0178 Mercury = 0.00570 4. Maximum allowable emission rates for DUN (g/sec): GB = 1.35×10^{-7} VX = 1.35×10^{-7} HD = 1.35×10^{-5} Arsenic = 3.57×10^{-5} Beryllium = 8.45×10^{-6} Cadmium = 1.57×10^{-5} Chromium = 2.33×10^{-5} Lead = 8.88×10^{-5} Mercury = 1.62×10^{-5} Phosphorus = 5.50×10^{-4} Hydrogen Chloride = 5.04×10^{-1} Chlorine = 5.49×10^{-3} Hydrogen Fluoride = 1.49×10^{-2} 5. Processing of spent carbon has not been demonstrated with current design.	1. Permitted MPF feed rate to treat wood and miscellaneous solids is 410 lbs/hr. Demonstrated DFS-CMS feed rate to treat spent carbon at JACADS is 249 lbs/hr. 2. PAS includes wet scrubbing for efficient acid gas removal. 3a. Maximum metal and chlorine feed rates for MPF (lbs/hr): Arsenic = 0.232 Beryllium = 0.00094 Cadmium = 1.18 Chlorine = 96.9 Chromium = 0.68 Lead = 4.2 Mercury = 0.000486 Phosphorus = 51.7 3b. Maximum metal and chlorine feed rates for DFS (lbs/hr): Arsenic = 0.0117 Beryllium = 0.0000757 Cadmium = 1.53 Chlorine (total) = 116.3 Chromium = 0.858 Lead = 9.68 Mercury = 0.0000973 Phosphorus = 25.4

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Table 3. Comparison of Secondary Waste Processing Technologies (Continued)

Criteria	Fixed Hearth with Feed Ram System (that is, DUN)	Roller Hearth Furnace/Rotary Kiln System (that is, MPF & DFS)
	6. System discharges include ash, liquid, stack emissions, and bag house ash. 7. Toxicity of discharges depend upon feed characteristics and PAS limitations resulting from lack of wet scrubbing.	4a. Maximum allowable emission rates for MPF (g/sec): GB (combined for LICs, MPF, and DFS) = 4.29×10^{-6} VX (combined for LICs, MPF, and DFS) = 4.29×10^{-6} HD (combined for LICs, MPF, and DFS) = 4.29×10^{-4} Arsenic = 8.51×10^{-5} Beryllium = 2.38×1010^{-5} Cadmium = 5.73×10^{-5} Chromium = 6.99×10^{-5} Lead = 1.45×10^{-4} Mercury = 4.28×10^{-5} Phosphorus = 1.16×10^{-3} Hydrogen Chloride = 8.16×10^{-3} Chlorine = 2.57×10^{-2} Hydrogen Fluoride = 1.93×10^{-2} 4b. Maximum allowable emission rates for DFS (g/sec): Arsenic = 4.19×10^{-5} Beryllium = 6.21×1010^{-6} Cadmium = 1.87×10^{-5} Chromium = 4.04×10^{-5} Lead = 4.42×10^{-4} Mercury = 5.24×10^{-6} Phosphorus = 9.35×10^{-4} Hydrogen Chloride = 1.16×10^{-3} Chlorine = 2.22×10^{-2} Hydrogen Fluoride = 1.66×10^{-2} 5. System discharges include ash, liquid, and stack emissions.

Table 3. Comparison of Secondary Waste Processing Technologies (Continued)

Criteria	Fixed Hearth with Feed Ram System (that is, DUN)	Roller Hearth Furnace/Rotary Kiln System (that is, MPF & DFS)
		6. Toxicity of discharges depends upon feed characteristics and PAS effectiveness with wet scrubbing. 7. Processing of spent carbon has been demonstrated in DFS-CMS at JACADS 8. System discharges include ash, liquid, and stack emissions. 9. Toxicity of discharges depend upon feed characteristics and PAS effectiveness with wet scrubbing.
2. Risks of discharge from a catastrophic event	1. Negligible risk to workers and public (that is, less than 1×10^{-8} per year).	1. Negligible risk to workers and public (that is, less than 1×10^{-8} per year).
3. Safety of Operation	1. Various safety-related problems encountered during DUN operations at JACADS. 2. Additional safety modifications may be required. 3. Increased maintenance frequency results in greater potential for industrial safety incidents	1. Low number of safety-related problems expected because DFS-CMS operations at JACADS were satisfactory; MPF/DFS currently functioning satisfactorily at UMCDF. 2. No additional safety modifications expected

Table 3. Comparison of Secondary Waste Processing Technologies (Continued)

Criteria	Fixed Hearth with Feed Ram System (that is, DUN)	Roller Hearth Furnace/Rotary Kiln System (that is, MPF & DFS)
4. Rapidity of Destruction	1. Agent destruction efficiency >99.99% and within fraction of a second. 2. Permitted feed rate of DUN is 368 lbs/hr and JACADS demonstrated feed rate is 337 lbs/hr. There is no demonstrated feed rate for carbon. 3. DUN has not been fully developed especially for spent carbon. 4. Due to lower feed rate and/or potentially lower availability, DUN requires more operating time than MPF/DFS-CMS.	1. Agent destruction efficiency >99.99% and within fraction of a second. 2. Permitted feed rate of MPF is 410 lbs/hr and JACADS demonstrated feed rate of DFS-CMS for carbon is 249 lbs/hr. 3. At JACADS, DFS-CMS operation for spent carbon was satisfactory. Project estimate for UMCDF operations schedule projects approximately 4 months for the treatment of carbon wastes using the DFS-CMS. 4. MPF/DFS-CMS requires less operating time than the DUN due to higher feed rate and/or potentially higher availability. Secondary waste may be processed in the MPF/DFS-CMS prior to the closure phase, if the munition campaign schedule permits.
5. Impacts on consumption of natural resources* * There is no historical information for the consumption of natural resources separated out by furnace.	1. Uses water, natural gas, and electricity operations. 2. Natural resources above and beyond the amount currently consumed at UMCDF would be required. 3. Consumption rate for resources expected to be higher than normal due to the ineffectiveness of a system not yet fully developed.	1. MPF and DFS use water, natural gas, electricity, and caustic solution. 2. Both furnaces currently operating at UMCDF, so any additional resources required for processing secondary waste would not be extensive.

Table 3. Comparison of Secondary Waste Processing Technologies (Continued)

Criteria	Fixed Hearth with Feed Ram System (that is, DUN)	Roller Hearth Furnace/Rotary Kiln System (that is, MPF & DFS)
6. Time before technology is operational and impacts to overall risks	1. Requires procurement; not yet built or operating. 2. Requires several major design modifications (safety, spent carbon processing, etc.) in addition to other significant pre-operational activities (that is, permit modification, construction, installation, systemization, trial burns). 3. Estimated to be operational at full capacity in ~27 months. 4. No potential schedule advantage anticipated.	1. Currently operational. 2. Installation of CMS will require permit modifications, procurement, installation, systemization, and trial burns. The same amount of time or less is estimated for the DUN, even though some activities may be shorter for CMS. 3. DFS-CMS is estimated to be operational in ~11 months as exemplified by JACADS. 4. If DFS-CMS is fully operational prior to start of closure, no impact to closure schedule
7. Cost	1. The Life Cycle Cost (LCC) for incorporating the DUN into UMCDF operations estimated at approximately $29.5 M. 2. Estimated cost for treating contaminated wood, miscellaneous solids, and agent-contaminated spent carbon is included in the LCC above. 3. Estimated offsite disposal cost for not agent-contaminated wood is 0.079 cents/lb plus $713/truck load for transport.	1. CMS will be incorporated into existing furnace system. The cost of adding a CMS onto the DFS is estimated at approximately $12.8M. 2. Estimated offsite disposal cost for not agent-contaminated wood is 0.079 cents/lb plus $713/truck load for transport.

as they could be at that time. Thus, rather extensive modifications would be required to make the DUN compliable with the current rule.

6.1.2 MPF/DFS. Discharges from the roller hearth/rotary kiln technology may include ash collected in MPF waste incinerator container (WIC) or DFS HDC bins, liquid discharge from the scrubber bottom, and stack emissions. The quantity and toxicity of these discharges would also depend upon feed characteristics and the effectiveness of the wet PAS consisting of a wet scrubber. JACADS successfully demonstrated spent carbon processing using the rotary kiln technology (DFS-CMS) with a feed rate of 249 lbs/hr. The permitted feed rate for treating wood and certain miscellaneous solids in the MPF is 410 lbs/hr. UMCDF's RCRA Permit limits the amount of chlorine in DFS waste to 116 lbs/hr and MACT rule limits the emissions to 32 ppmv HCl.

Unlike the DUN, the MPF and DFS furnaces and the wet PAS were designed and constructed with more strict design criteria required to treat process byproducts. For this reason these systems are capable of meeting the current MACT requirements during secondary waste treatment operations.

6.2 Risks of Discharge from a Catastrophic Event or Breakdown

6.2.1 DUN. The quantified risk of discharge from a catastrophic event or breakdown for the fixed hearth technology is negligible (1×10^{-8} per year). Regardless of the extent of contamination, secondary wastes do not contain large quantities of agent (GB, VX, or HD) that would lead to worker, public, or environmental risk. The amounts of any hazardous materials generated from agent operations that may be discharged would be relatively small.

6.2.2 MPF/DFS. The quantified risk of discharge from a catastrophic event or breakdown for the roller hearth/rotary kiln technology is also negligible (1×10^{-8} per year). As described previously, regardless of the extent of contamination, secondary wastes do not contain large enough quantities of GB, VX, or HD agent that would lead

to worker, public, or environmental risk. The amounts of hazardous materials generated from agent operations would also be relatively small.

6.3 Safety of Operations

6.3.1 DUN. DUN operations have encountered a variety of safety issues. At JACADS, several safety-related problems were experienced. These included a fire in the elevator shaft, failure of the charge door closing, stalling of the ram due to ash buildup on the grate, jamming of the lift car, problems maintaining oxygen concentration per RCRA requirements as a result of insufficient under-fire air flow that plugged the grate, and hydraulics problems, which lead to failure of the lift car.

If an over-temperature condition was to occur within the quench tower, an over-temperature emergency exhaust relief would be opened to release exhaust gas to the PFS. The PFS pre-cooler has been designed to cool baghouse exit gases from 350°F down to 125°F and potentially may not have enough cooling capacity to cool the hot quench tower exhaust gas. If this gas would not be adequately cooled by the PFS pre-cooler, it would pose a fire hazard to the PFS.

Although some modifications were already incorporated into the UMCDF DUN PAS design, additional modifications would be necessary to resolve the existing issues for the DUN to be constructed at UMCDF. In addition, more frequent maintenance expectations increases the potential for industrial related safety issues such as heat stress, sprains, strains, trips, and falls.

6.3.2 MPF/DFS-CMS. The MPF and the DFS are controlled by the Automatic Waste Feed Cut-Off (AWFCO) system that stops the feed if temperatures exceed high-high alarm levels that are just below the design operating limits. Currently, the MPF and DFS are functioning satisfactorily at UMCDF, and the DFS-CMS operations conducted at JACADS were also successful. Based on these past and current operational experiences, the expectation is that the MPF/DFS-CMS system would adequately

function in processing the secondary wastes originally intended (and other miscellaneous solid wastes) for the DUN.

6.4 Rapidity of Destruction

6.4.1 DUN. Under normal operating conditions, it is anticipated that agent would be destroyed in the DUN within a fraction of a second with an efficiency of greater than 99.99 percent. However, the technology was not fully developed, especially for processing spent carbon, when the decision was made to suspend all DUN operations at JACADS due to economical and technical reasons. Operation of the TOCDF DUN, constructed later with a number of improvements, was also discontinued per the decision to cease all activities due to significant resource requirements for maintenance and operation. Spent carbon was never processed in the DUN at TOCDF. The suspension of DUN operations at both sites prevented the acquisition of long-term, normal operating data for secondary waste disposal in the DUN. It is not certain if the furnace can be made optimally operable for all secondary wastes without major system modifications. Consequently, the rapidity of destruction cannot be accurately estimated.

Installation of a CMS onto the DUN does not appear to be feasible because of the potentially unsteady conditions that may develop in the fixed hearth as pulverized carbon particles are fed by a continuous-flow feeder. Even if a DUN-CMS could be designed and constructed, its initial throughput rate may be limited due to the low burner heating capacity (that is, 220,000 Btu/hr for the DUN compared with 6,000,000 Btu/hr for the DFS). Increasing the DUN-CMS burner capacity to step-up the throughput rate would, in turn, require enhanced refractory linings in the hearth and expanded downstream unit operational capacities.

6.4.2 MPF/DFS-CMS. Under normal operating conditions, agent is destroyed within a fraction of a second in the MPF/DFS-CMS with an efficiency of greater than 99.99 percent. The overall waste treatment operations are expected to proceed without major technical problems based on current performance experience at UMCDF. The overall throughput rates of this technology would be, therefore, higher than those of the

DUN, requiring shorter processing times. UMCDF projects approximately four months of operation time needed for the treatment of carbon wastes using the DFS-CMS. Since the carbon processing can be initiated during DFS processing windows, little impact to the schedule is anticipated. Theoretical process limits based on feed rates are much higher indicating completion in as little as 17 days; however, the UMCDF projections were selected as a more representative bases for duration.

6.5 Impacts on Consumption of Natural Resources

6.5.1 DUN. The fixed hearth technology requires a variety of resources including water, natural gas, and electricity for operations. The DUN is presently unconstructed, so additional natural resources above and beyond those currently being consumed at UMCDF would be required to design, construct, and then operate this fixed hearth technology. Also, due to the inefficiency of this technology, which has not been fully developed, it is estimated that extra natural resources would be consumed to restore and maintain operations if this system is selected for secondary waste treatment. The consumption rates of natural resources would be unsteady and difficult to estimate.

6.5.2 MPF/DFS-CMS. The roller hearth/rotary kiln technology also requires a variety of natural resources including water, natural gas, electricity, and caustic solution. Because the MPF and DFS are already operating and processing their initially designated feed materials at UMCDF, any additional natural resources required to utilize these incinerators for treatment of the secondary waste originally intended for the DUN would not be extensive. Also, the consumption rates of natural resources are not expected to be much different for secondary waste treatment from those for current operations.

6.6 Time Before Technology is Operational and Impacts to Overall Risks

6.6.1 DUN. The DUN will require procurement and several major design modifications to be fully operational to process secondary waste at UMCDF. Based on the current condition of the facility and the previously designated interior room for the DUN already

in place at UMCDF, the following list of activities was used to estimate the time required to initiate DUN operations:

- Facility design
- DUN design specific to UMCDF, including design modifications for spent carbon
- Permit modification to incorporate the DUN
- Procurement of major equipment
- Facility construction
- Installation of major equipment
- Systemization
- Trial Burn
- Operations.

Based on the program historical information scaled to address the design, construction, systemization, and operations of a single furnace system, the estimated time for the DUN at UMCDF to be operational at full capacity is approximately 27 months after the decision is made to use the DUN for processing secondary waste. This assumes that the DUN design can be modified for spent carbon treatment without extensive system reconfiguration and that the permit modification will be granted within 6 months based on an acquisition design package (greater than 90 percent design with P.E. stamps) and final design activities, and vendor procurement can be running concurrently with the permit modification review process. As per the current schedule, UMCDF would have completed GB and VX campaigns by the time the DUN is fully operational. If the DUN

is to be constructed for secondary waste treatment, it would be better to complete construction before UMCDF reaches the milestone of completing its mustard campaign. Otherwise, the DUN would lose the advantage of beginning secondary waste processing prior to the start of closure activities.

6.6.2 MPF/DFS-CMS. The MPF and DFS are currently operational at UMCDF. Installation of a CMS, required for spent carbon pulverization and feeding, onto the DFS will require permit modifications, procurement, installation, systemization, and trial burns. It is assumed that these activities will require the same amount of time or less as the DUN because some CMS-related activities may be of a shorter duration. An important scheduling issue for combining the DFS with a CMS is to ensure that all regular DFS munitions and secondary waste processing is completed before the combination activities begin. The UMCDF closure schedule will not be impacted as long as the DFS-CMS is fully operational prior to the start of closure.

6.7 Cost

6.7.1 DUN. The Life Cycle Cost (LCC) for incorporating the DUN into UMCDF operations is estimated at approximately $29.5M inclusive of capital costs, labor and utilities for operations, and disposal of unit in site closure activities. Additional modifications of the DUN may be required for combustion of spent carbon, and this needs to be factored in the LCC.

6.7.2 MPF/DFS-CMS. The cost of procuring and installing a CMS onto the DFS is estimated at approximately $12.8M.

6.7.3 Offsite Disposal Cost. For either technology, offsite disposal would be pursued for not agent-contaminated wood and the estimated cost of offsite disposal for not agent-contaminated wood is $0.079/lb plus $713/truck load for transport. The estimated disposal cost for spent carbon is approximately $294K based on Aberdeen Chemical Agent Disposal Facility's (ABCDF's) historical costs.

6.8 Summary of Recommendations

The BATs determined in the previous section have been summarized in table 4. The table illustrates how the roller hearth/rotary kiln technology (MPF/DFS) is superior for most of the criteria and equal in all others, indicating that it is the BAT for processing secondary waste.

7. ALTERNATE OPTIONS FOR NOT AGENT-CONTAMINATED WASTES

7.1 Offsite Disposal of Not Agent-Contaminated Wastes

UMCDF is currently only permitted to ship offsite, waste that is determined to meet the agent free standard. Agent free is defined in the UMCDF RCRA permit Waste Analysis Plan (WAP) and varies based on waste stream. The analytical parameters for process related secondary wastes offered for offsite treatment and/or disposal is selected based on process knowledge, previous results for similar waste streams at JACADS and TOCDF, and Land Disposal Restriction (LDR) notification requirements.

Table 4. Summary of Best Available Technology

Criteria	Best Available Technology	Comments on Key Issues
1. Types, quantities, toxicity of discharges to the environment	MPF/DFS-CMS	MPF/DFS PAS includes wet scrubbing capability for efficient acid gas removal that is not currently included in DUN PAS design.
2. Risks of discharge from a catastrophic event	MPF/DFS-CMS or DUN	Risk is low for both technologies.
3. Safety of operation	MPF/DFS-CMS	Safe and sustained operations for all designated wastes demonstrated by MPF/DFS-CMS may not be achievable by DUN based on current design.
4. Rapidity of destruction	MPF/DFS-CMS	DUN's capability for sustainable secondary waste and spent carbon disposition has not been demonstrated as it has been by the MPF/DFS-CMS.
5. Impacts on consumption of natural resources	MPF/DFS-CMS	Addition of DUN would require natural resources above and beyond baseline.
6. Time before technology is operational and impacts to overall risks	MPF/DFS-CMS	DUN may require major system modifications to be operational for spent carbon treatment.
7. Cost	MPF/DFS-CMS	Cost impact of DUN modification requirements (especially for spent carbon treatment) may be very high.

Notes:

MPF is rolling hearth technology; DFS is a rotary kiln technology; and DUN is a fixed hearth ram-feed technology.

8. CONCLUSIONS AND RECOMMENDATIONS

Based on analyzing the technical information obtained from operating three furnaces at other sites, the U.S. Army determined that the installation and construction of the DUN at UMCDF was not the most economical, efficient, or safest method for disposing of secondary waste.

It appeared that the DUN was not fully fine-tuned and was inferior to the other two onsite furnaces in design capacity, operational efficacy, and pollution abatement capability for disposition of the designated secondary wastes.

The satisfactory MPF/DFS-CMS operations support the U.S. Army's decision for the use of the existing roller hearth/rotary kiln technology (that is, MPF and DFS-CMS) in place of the fixed hearth technology (that is, DUN) for the safe and effective treatment of secondary waste streams proposed to be treated onsite via thermal methods.

To work more effectively than was demonstrated at JACADS, the DUN may be upgraded, if it is vitally necessary. However, this would require time and resources for design modifications, permit modifications, construction, systemization, and trial burns. This analysis shows that these will only add to the cost for operations at UMCDF, not provide any benefit of faster waste elimination, create another system that will require staffing to operate once in use, and add closure activities and costs.

The comparison of the estimated costs and schedules show that a decision to use the DUN for processing secondary wastes would add significant cost to the project for no schedule, safety or environmental benefit compared with using the existing MPF and DFS-CMS equipment for processing secondary waste. Adding a unit operation that is prone to delays and malfunctions, as demonstrated in the JACADS operating experience, adds potential risk to the operations for maintaining a safe and effective operation. Processing secondary waste in the MPF and DFS-CMS system can be

accomplished within the existing operational schedule and utilizes the existing workforce, which has significant experience working in the facility.

The findings of this assessment and data package confirm that the combined roller hearth/rotary kiln technology with the associated CMS and PAS is the BAT for processing UMCDF secondary waste.

APPENDIX A
ACRONYMS/ABBREVIATIONS

APPENDIX A
ACRONYMS/ABBREVIATIONS

ABCDF	Aberdeen Chemical Agent Disposal Facility
ACS	Agent Collection System
ACAMS	Automatic Continuous Air Monitoring System
AWFCO	Automatic Waste Feed Cutoff
BAT	Best Available Technology
BDAT	Best Demonstrated Available Technology
Btu	British thermal unit
CAMDS	Chemical Agent Munitions Disposal System
CMA	U.S. Army Chemical Materials Agency
CMS	carbon micronization system
DCD	Deseret Chemical Depot
DEQ	Department of Environmental Quality
DFS	Deactivation Furnace System
DPE	demilitarization protective ensemble
DRE	destruction removal efficiency
DUN	Dunnage Incinerator
EPA	Environmental Protection Agency
EQC	Environmental Quality Commission
GB	sarin
HCl	hydrochloric acid
HD	distilled sulfur mustard

HDC	heated discharge conveyor
HEPA	high efficiency particulate air
HVAC	heating, ventilation, and air conditioning
JACADS	Johnston Atoll Chemical Agent Disposal System
JI	Johnston Island
LCC	Life Cycle Cost
LDR	Land Disposal Restrictions
MACT	Maximum Achievable Control Technology
MDB	Munitions Demilitarization Building
MPF	Metal Parts Furnace
NMAE	No Major Adverse Effects
NRC	National Research Council
ORS	Oregon Revised Statute
P.E.	Professional Engineer
PAS	pollution abatement system
PCB	polychlorinated biphenyl
PFS	PAS Filtration System
PPE	personal protective equipment
ppmv	parts per million by volume
PQL	practical quantitation limit
QRA	Quantitative Risk Assessment
RCRA	Resource Conservation and Recovery Act

SAIC	Science Applications International Corporation
SO_x	sulfur oxide
SWTB	Secondary Waste Trial Burn
TAP	Toxicological Agent Protective
TOCDF	Tooele Chemical Agent Disposal Facility
TRA	Transportation Risk Assessment
TSCA	Toxic Substances Control Act
TSDF	treatment, storage, and disposal facility
UMCD	Umatilla Chemical Depot
UMCDF	Umatilla Chemical Agent Disposal Facility
VX	O-ethyl S-(2-diisopropylaminoethyl)methylphosphonothioate
WAP	Waste Analysis Plan
WIC	waste incinerator container

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APPENDIX B
REFERENCES

APPENDIX B
REFERENCES

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IN THE CIRCUIT COURT OF THE STATE OF OREGON

FOR THE COUNTY OF MULTNOMAH

GASP, *et al*

Petitioners,

v

ENVIRONMENTAL QUALITY COMMISSION, *et al* ,

Respondents,

and

UNITED STATES ARMY, and WASHINGTON DEMILITARIZATION COMPANY,

Intervenor-Respondents.

Case No. 9708-06159

STIPULATED GENERAL JUDGMENT

Petitioners have brought a Petition for Review against the State of Oregon Environmental Quality Commission ("EQC") and the State of Oregon Department of Environmental Quality ("DEQ") to require that Air Contaminant Discharge Permit #25-004 ("ACDP") issued by DEQ and Hazardous Waste Permit I.D. No. OR6 213 820 817 ("HWP") issued by EQC be reversed and or remanded; and

The United States Army ("Army") and Washington Demilitarization Company ("WDC"), both named permitees on these permits, having intervened as intervenor-respondents and joined the state in opposing the Petition for Review; and

This Court having dismissed the petition for review as to the ACDP by Order dated June

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14, 2006; and

This Court having issued its Opinion and Order dated April 17, 2007 granting in part and denying in part the petition as to the HWP;

It is ADJUDGED that the OREGON EQC'S determinations made pursuant to ORS 466.055 as to whether the Umatilla Chemical Agency Disposal Facility uses the best available technology and has no major adverse impact on public health or the environment in regard to (a) destruction of any mustard in any ton container that contains significantly higher mercury levels than previously reported; (b) the destruction of hazardous waste originally intended for the dunnage incinerator; and (c) the role of PFS carbon filters; are remanded to the State of Oregon Environmental Quality Commission for consideration and further proceedings consistent with the court's opinion of April 17, 2007.

The petition regarding the HWP is granted in regard to the above referenced findings that are remanded to the EQC. The petition regarding the HWP is otherwise denied.

DATED this ____ day of June, 2007.

Michael H. Marcus
Circuit Court Judge

Submitted by: Stuart A. Sugarman
Of Attorneys for Petitioners GASP *et al*

Marc Abrams
Senior Assistant Attorney General
Of Attorneys for Respondents DEQ and EQC

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing Stipulated General Judgment was served on the following parties, this 11th day of June, 2007, by electronic mail, and no later than the 12th day of June, 2007 by first class mail:

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Agenda Item B, Action Item: Finding of No Major Adverse Impact from Best Available Technology (BAT) Determination for Processing of Secondary Waste Generated at the Umatilla Chemical Agent Disposal Facility (UMCDF)
Attachment B

State of Oregon
Department of Environmental Quality Memorandum

DEQ Item No. 07-1208 (11)

To: Rich Duval
Chemical Demilitarization Program Administrator

Date: 8/3/2007

From: Steven Potts
Senior Hazardous Waste Specialist

Subject: Best Available Technology for Secondary Waste at the Umatilla Chemical Agent Disposal Facility (UMCDF)

Background

In February 1997 the Department of Environmental Quality (Department or DEQ) issued the Umatilla Chemical Agent Disposal Facility Hazardous Waste Permit No. ORQ 000 009 431. As part of the permitting process, the Environmental Quality Commission (Commission or EQC) concluded that several regulatory statutes, [ORS 466.050, 466.055(1)-(5)] had been met. ORS 466.055(3) requires the Commission to find that the proposed facility uses the best available technology for treating hazardous waste as a result of processing agent-filled munitions and bulk items.

Based on information the Department reviewed from the Department of the Army and Ecology and Environment (an independent subcontractor to the Department), the Commission found that incineration was the best available technology for disposing of secondary waste generated at the UMCDF as a result of processing agent-filled munitions and bulk items.

At the time the 1997 finding was made, the Dunnage Incinerator was part of the facility design and the intent was to install, systemize, and operate the Dunnage Incinerator to destroy certain secondary wastes. Subsequently, however, due to experience gained from the operation of the Dunnage Incinerator at Johnston Atoll Chemical Agent Disposal System and the Tooele Chemical Agent Disposal Facility, the Army decided not to install the Dunnage Incinerator at the UMCDF.

Summary

This report summarizes an assessment conducted by the Department to determine the best available technology for secondary wastes that were originally destined for the Dunnage Incinerator. The assessment focused on whether the Metal Parts Furnace and the Deactivation

Furnace System would be an appropriate method of disposal for the secondary wastes versus constructing and operating the Dunnage Incinerator. This assessment was made based on a compilation of information and knowledge available from various sources and persons available to or provided for the Department. This included reports, briefs, presentations, and technical staff knowledge and evaluations.

The results of this evaluation clearly show that utilizing the Metal Parts Furnace and Deactivation Furnace System for secondary wastes is the best available technology and would be more effective and protective of human health and the environment than installing and operating the Dunnage Incinerator.

The results of this evaluation clearly show that utilizing the Metal Parts Furnace and Deactivation Furnace System for secondary wastes not only would be appropriate, but actually more effective and protective than installing and operating the Dunnage Incinerator.

Assessment

To dispose of secondary wastes originally destined for the Dunnage Incinerator, the UMCDF conducted numerous tests and evaluations including, but not limited to:

- Sample and analysis of secondary wastes utilizing the results in incineration models.
- Performing a secondary waste trial burn sampling process wastes and emissions from the Metal Parts Furnace.
- Evaluating the design of the Metal Parts Furnace and Deactivation Furnace System to effectively destroy secondary wastes.

The product of these tests and evaluations was the development of current Hazardous Waste Permit conditions and parameters, which include sampling methods and intervals, feed rates, temperatures, and pressures, to ensure complete combustion and the most effective and safe operation of the Metal Parts Furnace and Deactivation Furnace System while processing secondary wastes.

A brief general description of the three types of furnaces (Dunnage Incinerator, Metal Parts Furnace, Deactivation Furnace System) is provided below to gain a better understanding of the significant differences in the furnace systems.

Dunnage Incinerator: The Dunnage Incinerator is a fixed-hearth incinerator comprised of a refractory-lined chamber into which solid, sludge, and/or liquid wastes are introduced. The fixed-hearth incinerator originally planned for the UMCDF is designed as a batch mode; that is, it is not intended for long-term, continuous incineration because no provision for automated ash removal is made. In the case of the Dunnage Incinerator, the batch feed is conducted through the use of a feed ram system. The ash from the burned waste will collect in the lower portion of the furnace and at some point must be manually removed.

Metal Parts Furnace: The Metal Parts Furnace is a roller-hearth furnace and also has a refractory-lined primary chamber as well as a secondary chamber. The secondary chamber provides an opportunity for products of incomplete combustion to be exposed to a high temperature a second time, thus ensuring efficient destruction of the wastes introduced in the primary chamber. Waste is introduced to the furnace by utilizing a roller-conveyor system that conveys trays of waste into the furnace utilizing a sophisticated automation system. Waste produced from the processing of secondary wastes in the Metal Parts Furnace is captured either in the wet pollution abatement system or remains as ash in the trays exiting the furnace.

Deactivation Furnace System: The Deactivation Furnace System is a rotary kiln comprised of a refractory-lined cylindrical steel shell mounted slightly tilted on its horizontal axis to facilitate the progression of waste through the furnace. This shell is supported by two or more heavy steel tracks or trundles that encircle the shell. The trundles ride on rollers, which are driven to allow the kiln to rotate around its horizontal axis. The waste material in the kiln is "tumbled" as the kiln rotates. This tumbling action serves to increase turbulence inside the kiln, which improves combustion efficiency. The residence time of solids inside the kiln is determined by the rate of rotation, the length, and the angle of tilt of the kiln. The rotary kiln is very versatile in that any form of waste may be introduced to the kiln. A secondary combustion chamber downstream of the kiln ensures complete combustion of flue gases.

More descriptive design details and general process drawings are available in the report, "Secondary Waste Module of the Best Available Technology (BAT) Data Package for Umatilla Chemical Agent Disposal Facility (UMCDF)," dated August 2007 conducted by the U.S. Army Chemical Materials Agency Program Manager for the Elimination of Chemical Weapons (Attachment 1).

When evaluating the best system for disposing of the secondary wastes either through the original design of the Dunnage Incinerator or through the currently designed and operational Metal Parts Furnace and Deactivation Furnace System, it is easiest to evaluate utilizing Table 3 in the above-referenced report. To briefly summarize the information in the above-referenced table, it is clear that the Metal Parts Furnace and Deactivation Furnace System:

- Provide either as effective or more effective destruction of the wastes,
- Present a negligible risk to workers and public from a catastrophic event,
- Have lower safety risks and maintenance downtime,
- Require less operating time and are currently available,
- Have no additional impacts on natural resources.

Additional risks to UMCDF employees were considered as well. When wastes are generated in the Munitions Demilitarization Building they are transported via personnel in protective suits to the Toxic Maintenance Area. All wastes must be monitored after a four-hour aeration period to determine the level of contamination. The waste is segregated into drums and monitored again. The drums are then removed from the Toxic Maintenance Area, labeled, and transported to permitted storage igloos in J-Block. In the case of higher-level waste igloos, igloo monitoring must be completed prior to entry, which is labor intensive, and is required whenever adding or

removing containers from higher-level waste igloos. When secondary waste processing is available at the facility, the process is reversed--Monitoring of the igloos, transportation back to the Toxic Maintenance Area, waste removed from the containers, segregated based on the current loading strategy, and finally loaded into waste incineration containers. The waste incineration containers are then remotely maneuvered to the Metal Parts Furnace for disposal of the waste.

When the Metal Parts Furnace is authorized for disposal of the secondary wastes, generated wastes are transported to the Toxic Maintenance Area and directly loaded into waste incineration containers. This bypasses the transporting, monitoring and storage activities involved with permitted storage in J-Block and reduces the associated personnel risks.

Conclusion

Based on the information evaluated, the Department has determined that the Metal Parts Furnace and Deactivation Furnace System are the best available technology for disposal of secondary wastes originally destined for the Dunnage Incinerator.

The Metal Parts Furnace and Deactivation Furnace System are more effective and efficient in destruction of the wastes. Additionally, the Metal Parts Furnace and Deactivation Furnace System are less likely to cause risk to worker or public safety due to the design features of the furnace systems. Further, the ability to immediately process the wastes reduces the handling of the wastes, thereby significantly reducing risk to personnel and reducing the resources required to store the wastes while awaiting disposal.

SRP:scr
Attachment

Comments for 8/16/2007 EQC Meeting

The Oregon Chapter of the Sierra Club fully supports the comments submitted by Karyn Jones on behalf of GASP, et. al. within the absurdly short seven day comment period that ended Tues.

It has been clear for nearly a decade when the Army put in the concrete wall precluding use of the DUN at the Umatilla Chemical Weapons Facility that they had no intention of complying with the original operating permit. This was a classic "bait and switch" tactic. The proposal before you today is based on a design being used at the Tooele Chemical Agent Disposal Facility (TCADF) with a problematic operating history. In addition TACDF solved the problem of excessive emissions of Dioxin and other HAPs released at JACDS where they were monitored merely by not having the appropriate monitoring that could detect those pollutants.

The supporting materials presented are insufficient to make an appropriate BAT determination as required by law.

We strongly urge you to reject the proposal as presented and request a more reasonable period of time for public comment. Thank you.

Bob Palzer,
Chemical Weapons Issue Coordinator, Oregon Chapter Sierra Club

Del. by Perrin DeGroy

Item B

G.A.S.P.
P. O. Box 1693
Hermiston, OR 97838

August 14, 2007

Rich Duval, Chemical Demilitarization Program Administrator
Eastern Oregon Chemical Demilitarization Program
256 E. Hurlburt
Hermiston, OR 97838

RE: Secondary Waste Best Available Technology Determination

Dear Mr. Duval:

The following comments are being submitted on behalf of G.A.S.P. et al. Please enter them in the administrative record.

The Oregon Department of Environmental Quality (DEQ) and Department of Army propose to replace the dunnage incinerator (DUN) at the Umatilla Chemical Agent Disposal Facility by utilizing the Metal Parts Furnace (MPF) and Deactivation Furnace System (DFS). To achieve this goal, the Environmental Quality Commission (EQC) is asked to approve the DEQ recommendation as a determination of Best Available Technology (BAT). This effort has far-reaching implications that the Commission should consider before granting.

Prior to the 1997 EQC decision, the Army had requested the EQC to issue a hazardous waste permit for the Army's baseline hazardous waste incineration technology package which in 1997 included as primary components a metal parts furnace (MPF), a deactivation furnace (DFS), two liquid incinerators (LIC 1 & 2), the dunnage incinerator (DUN), a brine reduction area (BRA) and a pollution abatement filter system using carbon filter beds. (PFS). Transcript (TR.) Vol. 10A, 6/19/06, pp. 1564 – 1565 (Henry Lorenzen, former EQC Chairman); PX. 20, TR. Vol. 6A, 10/28/02, pp. 23 - 31 (Sue Oliver, DEQ) (describing the components approved by the EQC in 1997 and the waste streams each was supposed to handle). The EQC found both that this technology package was BAT for the chemical weapons and chemical agent hazardous wastes to be treated at TOCDF and that UMCDF would use this technology package. PX. 1 at 17 - 21. Please note that the technology package approved included a dunnage incinerator.

During construction of the incinerator facility at UMCDF a DEQ inspector discovered that the Army had built a concrete wall blocking installation of the DUN furnace. Rather than issuing citations and revoking the permit for this unlawful act, DEQ management took no action. The following statements are taken from GASP III certified transcripts.

• The State "kinda" got a hint the Army was not constructing and installing the DUN when the Army put up a wall in the plant that would prohibit getting the DUN incinerator through. The State thought at that point that something was going on. It was the State's first clue (and a rather large one), and then the first written correspondence was a letter in August 1998 when the ODEQ was formally told that the DUN was on hold. Tr. Vol. 6C, October 28, 2002, Wayne Thomas, DEQ P. 67-68.

• The Army didn't disclose in the permit application that they weren't going to use the DUN. Tr. Vol. 6C, October 28, 2002, Thomas P. 75.

• Mr. Thomas admits that it was his conclusion in his memo that the Army must have known as early as its processing of the 1994 report that the DUN wouldn't process carbon. Tr. Vol. 7B, October 29, 2002, Thomas P. 33.

• Mr. Thomas admits that burning the DPE suits in the MPF is the proposal, but he has not seen dioxin emission data for burning DPE suits in the MPF. Tr. Vol. 6C, October 28, 2002, Thomas P. 49.

• Mr. Thomas admits that the State has not conducted a risk assessment based on dioxin emissions from burning plastic DPE suits in the MPF. Tr. Vol. 6C, October 28, 2002, Thomas P. 40-50.

The Data Report does not mention that Drew Lyle was aware of the Army's plan to burn dunnage in the Metal Parts Furnace in 1996 or earlier. (Testimony of Drew Lyle, v18B at 113.) Mr. Lyle never told the state of Oregon, even though he was leader of the Army's permitting team dealing with Oregon during the relevant time period.

At the time of permitting the Army reported that the DUN was a proven technology. This is particularly interesting when considering the following. "Satisfactory operation of the dunnage furnace and its related pollution abatement system was not demonstrated during the JACADS OVT." (Review of Systemization of the Tooele Chemical Agent Disposal Facility (1996); Page 13. Commission on Engineering and Technical Systems (CETS)

At the same time the Army made claims to the EQC, DEQ and public that the DUN was a proven technology because it was part of the full scale JACADS prototype in 1995-96, was also tested at JACADS but only for wood, and a very different DUN was tested at CAMDS.

In the DEQ Data Package dated August 3, 2007, the Report failed to acknowledge the profound differences between the Pollution Abatement Systems (PAS) for the DUN and for the MPF or DFS. The MPF/DFS utilizes a basic PAS configuration of quench tower, venturi scrubber, scrubber tower, demister, fan, and exhaust stack. The DUN, on the other hand, was permitted to operate with a quench tower, bag house with drum receptacle, fan, and exhaust stack. Even to a layperson, it seems safe to conclude that the bag house cyclones out larger particles into a drum whereas the PAS for the MPF/DFS is designed to precipitate smaller particulates through a "misting" process to cool the

exhaust. The EQC should carefully exam the PAS of both MPF and DFS for problems created by DUN waste feed. The evaluation should include the carbon filters.

As Larry Edelman urged the EQC on March 15, 1996 the "Commission consider the full range of technologies suggested for the destruction" to meet BAT under ORS 466.055(3). To date this has not been done by the Commission or DEQ.

The Secondary Waste BAT Data Report dated August 3, 2007 briefly compares only three options for the treatment of secondary waste. Those options are using the dunnage incinerator, the metal parts furnace and the deactivation furnace system. The following information on other available technologies for the treatment of secondary waste was ignored.

The Army carefully evaluated alternatives to incineration during the Assembled Chemical Weapons Assessment Program (ACWA), which included an evaluation of DUN alternatives. Oregon representatives, including a DEQ staff member, participated throughout the ACWA process which took several years. Commenter's include the ACWA Report to Congress December 2001 as an attachment.

Let's compare the DUN to the alternatives. The alternative technologies underwent intense testing for years through the Assembled Chemical Weapons Assessment (ACWA), a study funded by Congress that was far more intense than any testing that any component of incineration was required to undergo. Neutralization has been successfully used full scale at ABCDF and destroyed many tons of agent. See, Ex. 220, offered as evidence in Petitioners' Post Trial Brief. Alternatives, especially neutralization, are now more proven than the DUN and other incineration components ever were. Consider how incineration began in the remote areas of Johnston Atoll and the Utah desert, while the alternatives began in a densely populated area right near the Pentagon and on the same grounds as the office where Army officials decided to neutralize the Maryland stockpile. This alone speaks volumes. That the alternatives may use warm water or caustic in a true batch process as opposed to incineration's high temperature continuous flow model peaks volumes. That incineration's smokestacks will spew nearly 36 tons of hazardous waste into the atmosphere while the alternatives will release far less hazardous gas and liquid speaks volumes.

Additionally, the Interim Design Assessment for the Blue Grass Chemical Agent Destruction Pilot Plant (2005) Board on Army Science and Technology (BAST) National Academies of Science made the following recommendation.

General Recommendation 5. Alternative approaches for treating contaminated dunnage and wastes should be considered by the Army, with involvement by the public. One alternative to SCWO for treatment of contaminated dunnage is to treat it in the MPT to levels suitable for release to appropriate waste disposal sites.

The two tables that follow give brief descriptions of the seven technology packages that passed the DoD's initial evaluation and an evaluation of the maturity of the demo II units operations and processes that included alternative treatments for dunnage. or secondary waste and were included in the BAST Assessment.

TABLE 1–1 Description of the Seven Technology Packages That Passed DoD's Initial Evaluation Page 7

Technology Provider[a]	Access to Munitions	Treatment of Agent	Treatment of Energetics	Treatment of Metal Parts	Treatment of Dunnage
AEA	Modified reverse assembly (high-pressure wash, new rocket shearing).	Electrochemical oxidation using silver ions in nitric acid (SILVER II™).	Treated with SILVER II™ process.	High-pressure acid wash; thermal treatment to 5X.[b]	Shredded and treated with SILVER II™ process.
ARCTECH	Modified reverse assembly.	Hydrolysis with a-HAX (humic acid and strong base, KOH).	Hydrolysis with a-HAX.	Hydrolysis with a-HAX; shipped to Rock Island Arsenal for 5X treatment.	Hydrolysis with dilute a-HAX; shipped to landfill.
Burns and Roe	Modified reverse assembly.	Plasma arc.	Plasma arc.	Melted in plasma arc.	Shredded; processed in plasma arc.
General Atomics	Modified reverse assembly; cryofracture for projectiles.	Hydrolysis; supercritical water oxidation (SCWO).	Hydrolysis, SCWO.	Hydrolysis; thermal treatment to 5X.	Shredded; destroyed in SCWO.
Lockheed Martin (Foster/Eco Logic/Kvaerner)	Modified reverse assembly (multiple lines, compact layout, new	Hydrolysis; SCWO; Eco Logic gas-phase chemical reduction (GPCR).	Hydrolysis, SCWO, GPCR.	Hydrolysis; GPCR to 5X.	Hydrolysis; GPCR to 5X.

	drain and wash).				
Parsons	Modified reverse assembly (fluid-jet cutting and energetic washout for rockets).	Hydrolysis; biotreatment.	Hydrolysis, biotreatment.	Thermal treatment to 5X.	Thermal treatment to 5X.
Teledyne-Commodore	Fluid-jet cutting; access and drain agent; wash out energetics with ammonia.	Solvated electron process in ammonia for reduction; chemical oxidation with sodium persulfate.	Solvated electron process in ammonia for reduction; chemical oxidation with sodium persulfate.	Wash in solvated electron solution; oxidation to 3X;[c] ship to Rock Island Arsenal for 5X treatment.	Crushed or shredded; treated in solvated electron solution; shipped to landfill.

Page 38 TABLE 5–1 Summary Evaluation of the Maturity of Demo II Unit Operations and Processes

	Hydrolysates			Agent Munitions			
Technology Provider/Unit	VX/GB	HD	Energetics	VX/GB	HD	Energetics	Other
Operation or Process							
AEA							
SILVER II™[a]				C	C	C	
Solid/liquid waste treatment				C	C	C	
Gaseous waste treatment				D	D	D	
Foster Wheeler/Eco Logic/Kvaerner							
TW-SCWO	B	B	C				
GPCR™				B	B	B	B[b,c]
Teledyne-Commodore							
Ammonia fluid jet cutting and washout system				D	D	E	
SET™				D	D	D	C[b]
Persulfate oxidation (agent)				D	D	D	
Peroxide oxidation				D	D	D	

(energetics)
Metals parts and dunnage shredding A[b,c]

NOTE: Environmental and safety issues were considered in assigning maturity categorizations. Schedule and cost issues were not considered. The letter designations are defined as follows (a blank space indicates that categorization was not applicable for that material): A, demonstration provides sufficient information to justify moving forward to full-scale design with reasonable probability of success; B, demonstration provides sufficient information to justify moving forward to the pilot stage with reasonable probability of success; C, demonstration indicates that unit operation or process requires additional refinement and additional demonstration before moving forward to pilot stage; D, not demonstrated, and more R&D is required; and E, demonstrated unit operation or process is inappropriate for treatment.

Another analysis missing from the report are impacts to worker health and safety from low-level chronic exposure. The reports for public review only included episodic events with observed effects. Staff did not consider worker chronic exposure. Also, dioxin contamination led to the shut down of the dunnage incinerator in UT. Has DEQ reviewed this information? Without a broader scope to BAT that includes low level of worker exposures, the resulting decision is baseless.

The Data Report fails to consider the emissions from using the MPF and DFS for dunnage as a single source of or in combination with like emissions from other sources that pose a danger of non-cancer adverse health effects to infants. The average infant dioxin-like compound exposure from existing sources is already 50 times greater than the exposure standard set by two federal agencies, and high end infants have a dioxin-like exposure hundreds of times greater than the federal standard, particularly in light of new studies indicating adverse health effects even in adults and older children at existing exposure levels. The Report also fails to address impacts to subsensitive populations in the area or potential harm to the environment.

The comment package provided no data on the volume of waste currently stored or the expected volume of wastes. In response to our inquiry, DEQ staff offered the following that could not be found in the public review documents: There is currently approximately 180,000 pounds of secondary waste stored in J-block. About 100,000 pounds is spent carbon. The permit includes 58 J-block igloos for storage of secondary waste. How much each can hold will be variable depending on the type of waste, but a good average is 50,000 pounds per igloo (about 3,000,000 pounds total). Also, there is nothing to prevent the inclusion of additional igloos into the Permit should capacity become an issue. So theoretically, with over 900 igloos available, there is no practical limit on storage capacity

The Resource Conservation and Recovery Act (RCRA) regulations on public participation appear to have been ignored. RCRA requires notice of any proposed permit be published in a local newspaper and that the public be allowed to comment and attend a

public hearing [42 U.S.C. sec. 6974(b)]. The public notice is dated August 7, 2007, the comment period ends on August 14, 2007, and a decision by the EQC is expected on August 16, 2007.

If one believes that public participation is a cornerstone of this program, as alleged by the department and the army, then the seven day comment period is grossly inadequate and severely limits the public's ability to participate in the process. Given the magnitude of the proposal and the Judge's ruling in GASP v. EQC, we ask for a minimum thirty day public review and comment period. Supporting documents used by staff must also be made easily accessible.

In conclusion, commenter's request that the BAT determination by the EQC be denied at this time and revisited at the October 18-19 2007, meeting. This will provide staff with time needed to begin addressing issues that we have brought to their attention and others that they may become aware of or that the EQC specifically requests information on. Commenter's also request that they be allocated time to present information to the EQC on this issue during the October meeting and that their presentation be listed as an agenda item not limited to five minute or less.

Sincerely,

Karyn J Jones
On behalf of G.A.S.P. et al

State of Oregon
Department of Enviro

Confidential

DATE: January 24, 2000

TO: Langdon Marsh
Director

FROM: Wayne C. Thomas 1/24/2000
Manager, Chemical Demilitarization Program

SUBJECT: Secondary Waste and Dunnage Incinerator Issues
DEQ Item No. 00-0111 (27 01)

We have prepared the following list of issues for discussion in preparation for the meeting on January 26, 2000 with the Army on the secondary waste issues

1. **The Army wants to convince the EQC and the Department to allow operational start-up by approving a Compliance Schedule for the development, testing, and selection of secondary waste treatment technologies. The Army's number one priority is clearly the processing of chemical agent and chemical agent munitions only, and they consistently fail to understand why the regulatory community and the public are so adamant about ensuring that treatment technologies for secondary waste are in place before any more is generated through operations.**

   Given their track record, we have absolutely no reason to believe that the Army would be able to meet a Compliance Schedule. The Compliance Schedule that was proposed last August includes some ambitious schedules for the development of various treatment technologies, and yet the Army has not included DEQ in the discussion of the concept they are developing. The Army continually shows a reluctance to include DEQ in the discussion of issues that are of mutual concern and need resolution. At this time we do not have any confidence in the compliance schedule approach. Even if we can establish a level of confidence we would need to include severe penalty clauses in the compliance schedule in the event the Army fails to meet the requirements

2. Although the Hazardous Waste Permit clearly states that all wastes currently stored at the Depot will be treated at UMCDF the Army is focusing solely on demilitarization wastes. The legislative barrier to processing the Depot storage wastes was removed last fall, but the Army's chemical demilitarization group and the Army's storage group seem unwilling and/or unable to resolve how and when the storage wastes will be treated at UMCDF.

   The chemical agent-related wastes stored in J Block at the Umatilla Chemical Depot are going to be a processing challenge for both the Army and the Department. Only recently has the Depot started to segregate the wastes they are putting in drums. There are hundreds, if not thousands, of drums in J-Block and there are only very sketchy assumptions of what is in each drum. Past practice was just to put all the agent-related

waste from a given activity into a drum (which could include paper, cloth rags, butyl rubber gloves and boots, metal parts, carbon canisters, etc.) and then fill the drum with decontamination solution and store it. Each of those drums will have to be opened in an engineering controlled environment, and the various wastes fished out of the drums and re-packed into segregated containers for processing. We also have an issue with multi-agent contaminated wastes, since the current Hazardous Waste Permit forbids the processing of wastes that have been contaminated with more than one agent.

The Army does not want to acknowledge what it's going to take to process the J-Block waste. The waste preparation time will be significant, and the different branches of the Army are apparently struggling to come to an agreement over how the processing will be done, and of course, who is going to pay for it. The Program Manager for Chemical Demilitarization and the Soldiers Biological and Chemical Command (the storage Depot side of the Army) must come to an agreement not only on the processing issues, but they also must insure consistency in waste management and analytical procedures (they think we are being unreasonable when we expect the two different organizations to manage identical wastes in the same way).

3. **Treatment technologies for numerous and inherently problematic secondary wastes (such as carbon and protective suits) are in the early to middle stages of development. The Army does not work with the regulatory agencies (such as the National Chemical Demilitarization Workgroup) prior to developing test plans. The consequence is that sometimes they do a lot of work that doesn't result in answers that address the concerns of the regulatory communities.**

The Army is apparently well into the development of a Carbon Micronization System to pulverize waste carbon so that it can be fed into the Deactivation Furnace. The Army has also conducted numerous tests of the "Thermal Decontamination System" for the protective suits (although some of the tests are of dubious value due to poor test plans and/or failure to execute the test as planned). The reality, the Army's preferred solution to the treatment of secondary waste is off-site shipment to another facility. Off-site shipment of liquid wastes such as brine (to commercial treatment facilities) has been approved by both the Utah and Alabama environmental agencies. The Army expects Oregon to do the same—eventually.

4. **The Army cannot understand, let alone accept, the state's prohibition on off-site shipment of liquid wastes, and the requirement for certifying that any wastes going off-site must be agent-free. I believe that their failure to put resources into development of better sampling protocols and analytical methods for liquid and solid waste matrixes is a direct consequence of their firm belief that we will change our position on off-site shipments.**

The development and issuance of the permit during 1996 and 1997 was based on the Army's application and commitment to the EQC that all agent contaminated secondary wastes and liquid wastes would be treated on-site. The Army made these commitments to secure issuance of the permit and they are now trying to back away from the commitments.

8. The Army has apparently made virtually no progress on the Dunnage furnace (DUN) in the last two years. They have not put in the work needed to modify the design to make it perform.

The Army's original plan for treatment of secondary wastes was simple: Carbon and virtually everything else was to be treated in the Dunnage Furnace, with the exception of Demilitarization Protective Ensembles (the worker's protective suits), which were never included in the original Waste Analysis Plan (an omission we should have caught, but didn't). We now know that the Army knew as early as the late 1980's that the Dunnage Furnace would definitely not be able to process carbon, and would only be able to process other wastes (primarily wood) with major design modifications to the DUN furnace and its pollution abatement system. The Application we received in 1995 includes the following statement (Volume II, Section D-8b(2)(e):

> "The goal of the trial burn will be to demonstrate that the Dunnage Incinerator meets the performance standards presented in Section D-8b. The Dunnage Incinerator is designed to meet these standards. additionally, a Dunnage Incinerator of similar design will be tested at the Johnston Atoll Chemical Agent Disposal System (JACADS) to demonstrate successful performance. *On the basis of the incinerator design and the JACADS data, it is anticipated that the Dunnage Incinerator will meet the applicable incinerator performance standards.*" *(emphasis added)*

Our recent review of the Dunnage Incinerator history has seriously jeopardized and undermined our confidence in the information being provided to us by the Army. The Army has presented information to DEQ that clearly shows they knew in 1994 that the DUN would not meet the required performance standards. We have tasked our contractor (Ecology & Environment) to review the 1994 and 1999 Dunnage Incinerator reports to determine if the permitted design is capable of treating secondary wastes. This issue is so significant that the very question of whether the DUN should have been permitted is now something that we need to consider.

Proposed Outcome of Meeting

We believe that the outcome of the meeting must be that the Army has a <u>full understanding</u> of the state's position on the management and treatment of all secondary wastes stored at the UMCD. We should make a commitment to work proactively with the Army and Raytheon on the critical issues related to secondary wastes. A senior management monthly meeting to update the secondary waste issues should be proposed. This will keep the Army moving forward on these issues, however we must not prematurely approve a technology or approach without following the required public process. The following issues are critical to the successful outcome of the entire project and are considered non-negotiable

Start of Hazardous Waste Operations (Surrogate Agent Trial Burns) – HW operations cannot occur until a viable option for the treatment of all secondary wastes is approved. We have always operated under the assumption and permit requirement that agent contaminated

wastes and liquid wastes must be treated on-site. The status of the DUN is questionable and alternative technologies are untested.

Off-site Shipment of Agent-Contaminated Wastes and Liquid Wastes - This is one of our basic principles and cannot be compromised. If we allow the Army to send agent-contaminated wastes and liquid wastes offsite which can be treated at Umatilla it would be transferring our problems to another location, likely another state, for future cleanup.

The receiving state may not have the same regulatory standards as Oregon and the wastes would not be managed appropriately. The treatment technology exists at Umatilla to effectively treat agent-contaminated and liquid wastes. Chemical agents are not listed hazardous wastes in many states and not even by the USEPA. The EQC and Department have maintained and have repeatedly informed the Army that all secondary wastes which contain chemical agent must be treated on site. We believe our stance on this fundamental issue is consistent with Oregon's environmental ethic and the original permit decision issued by the EQC and the Department for the UMCDF.

State of Oregon
Department of Environmental Quality Memorandum

To: File Category 700

From: Wayne C. Thomas WCT 1/24/2000
Manager, Chemical Demilitarization Program

Subject: Dunnage Incinerator (DUN) Meeting Notes from the January 13, 2000 Meeting with the Army & Raytheon
DEQ Item No. 00-0109

Date: January 24, 2000

Attendees:

Wayne Thomas, DEQ
Trisha Kirk, DEQ
Raj Malhotra, PMCSD
Megan Proctor, SAIC -PMCSD
Clara Moraga, PMCSD
Tom Artioli, IOC -PMCSD
Bob Nelson, UMCD
Mark Wiggins, Maumee-RDC
Loren Sharp, RDC
Joe Gonzales, RDC
Allan Bean, RDC
Gus Aljure, RDC
Dave Nylander, RDC
Glen LeVan, RDC
Buddy Webster, Maumeee-RDC

The purpose of the meeting was to discuss the Dunnage Incinerator (DUN) modifications being addressed by Engineering Change Proposal (ECP) 639 and the Dunnage Incinerator System Feasibility Study (DUN FS), September 1999. Mr. Raj Malhotra stated that Field Configuration Control Board (FCCB) approval of the ECP had occurred and hopes to have Configuration Control Board (CCB) approval by the end of the week. Mr. Buddy Webster presented the modifications in the FCCB approved ECP 639 that were derived from the DUN FS. He followed with discussion on why certain items recommended in the DUN FS were not planned for inclusion in ECP 639 such as nitrogen purge, primary chamber dome purging, and shredder installation.

At the completion of this presentation, Mr. Wayne Thomas discussed the DEQ's view of the DUN FS and the Dunnage Furnace Retrofit Design Report, December 1994. The following summarizes many of Mr. Thomas' comments:

The Army does not have adequate experience with an operating DUN to take the position that the DUN is capable of processing carbon or wood. The operating history is "marginal at best". It is important to state where Oregon is on this issue. Candidly, looking at the 1994 Report and the DUN FS, they both say the DUN doesn't work. The Army knew in '94 the DUN wouldn't process carbon. The Army submitted an Application saying the DUN would work when they knew it wouldn't. This is serious and needs to be discussed. The Army recommendation (DUN FS) is one that says lets pick the simplest one that will meet schedule and cost that the State will agree on but not the rotary kiln because it would be a Class 3. We are considering the DUN to be untested, unproven technology. We can't talk about technical modifications to the DUN because you have no information to show it will work. The '94 Report and the DUN FS both say a bricklined rotary kiln was the best method, why isn't it being proposed

Our confidence in the technical capability of the DUN mods are of little use when the '94 and DUN FS Reports both say the DUN won't work. The whole credibility issue is on the table. The Army knew in December '94 the Dun wouldn't work and the rotary kiln was the best option and six years later the Army is at the same place and nothing is done.

Mr. Thomas then read the last paragraph on page 1-3 of the DUN FS and made the following comments

Your intent was not to come up with a solution but slide a permit mod through the State with something less that wouldn't work. What have you gained? No progress for six years. We don't care about your schedule -we care about protecting human health and the environment. Why should the State of Oregon run to you with an answer when you have wasted six years on the DUN when you knew it wouldn't work

During Mr. Thomas' statements, Mr. Webster identified that use of a for rotary kiln that the information was based on 30% agent loading on carbon. Information since then indicated that agent loading is much less and does not warrant a PAS upgrade. (It is assumed this will need to be demonstrated to the DEQ eventually.)

The status of all ECPs affecting the DUN was also discussed and how they will be included in the DUN design changes and pending permit modification. Parsons has been provided a list of all past ECPs pertaining to the DUN that have been reviewed with the DEQ. These ECPs will be reflected in the permit modification design.

Mr. Malhotra requested another meeting to address the 1994 Report. Mr. Thomas agreed with Mr. Malhotra that another meeting was needed to discuss not only the 1994 report but also the Army's Application submitted in 1995 and future permitting of the DUN. Mr. Thomas said he would submit a request for references used in the reports that they have not received. A meeting has been scheduled for 9:00 a.m., 16 February 2000, in the PSB Conference Room to address these topics.

Mr. Loren Sharp recommended that Parsons be authorized to move forward on modification designs for the DUN Permit Modification upon approval of ECP 639. Mr. Thomas stated that this is an internal Army decision on how to proceed. Mr. Malhotra concurred that Parsons should continue with the design effort.

Mr. Thomas' closing comment: "I don't like what I see. I have to get up and defend to the public that what the UMCDF is doing here is going to protect human health and the environment. A DUN FS was completed six years ago and this last one is no different." He further elaborated that he will have to explain this to the Oregon Environmental Quality Commission, and they are not going to like this.

Mr. Malhotra stated to Mr. Thomas that PMCD never tried to hide anything from the DEQ and that UMCDF has always been up front with the DEQ. Mr. Thomas replied that "I hear what you are saying, but this information does not agree with what you say and your actions".

ACTION: Mr. Malhotra will coordinate getting representatives knowledgeable on the 1994 Report, DUN FS, and the Permit Application available for the February 16, 2000 meeting.

Comments for 8/16/2007 EQC Meeting

The Oregon Chapter of the Sierra Club fully supports the comments submitted by Karyn Jones on behalf of GASP, et. al. within the absurdly short seven day comment period that ended Tues.

It has been clear for nearly a decade when the Army put in the concrete wall precluding use of the DUN at the Umatilla Chemical Weapons Facility that they had no intention of complying with the original operating permit. This was a classic "bait and switch" tactic. The proposal before you today is based on a design being used at the Tooele Chemical Agent Disposal Facility (TCADF) with a problematic operating history. In addition TACDF solved the problem of excessive emissions of Dixon and other HAPs released at JACDS where they were monitored merely by not having the appropriate monitoring that could detect those pollutants.

The supporting materials presented are insufficient to make an appropriate BAT determination as required by law.

We strongly urge you to reject the proposal as presented and request a more reasonable period of time for public comment. Thank you.

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Bob Palzer,
Chemical Weapons Issue Coordinator, Oregon Chapter Sierra Club

July 19, 2007

Governor Ted Kulongoski
254 State Capitol
Salem, Oregon 97310

Dear Governor Kulongoski,

As neighbors of Lakeside Reclamation, Inc. in Washington County, we call your attention to the enclosed article, "The Grapes of Trash," (Willamette Week, July 18-24, 2007), which highlights the threats this poorly regulated landfill poses to our community, Ponzi vineyards, the Tualatin River National Wildlife Refuge, the public health and Oregon's environment.

We have had numerous discussions with DEQ staff, asking for increased oversight of Lakeside's operations, yet these problems persist. We are disappointed at the failure of DEQ to fulfill its mission to protect Oregonians and our environment, thereby endangering the Tualatin River basin and the health of its residents and its wildlife.

We would like the opportunity to meet with you and Mike Carrier, your Natural Resources Adviser, to solicit your assistance in finding solutions to the serious environmental and public health problems created by this landfill.

Sincerely,

Elizabeth Thoresen
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Beaverton, Or 97007
503-628-2490
Rwthor@gotsky.com

Norman Penner
President, Friends of the Tualatin River National Wildlife Refuge
14712 SW Woodhue St.
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Enclosure

CC: Stephanie Hallock, Director, Department of Environmental Quality
Congressman David Wu
Lynn Hampton, Chairman, Environmental Quality Commission

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Grapes of Trash

How regulators favored a rogue dump operator over a landmark winery.

BY NIGEL JAQUISS

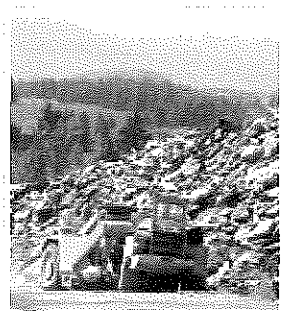

IMAGE: Leah Nash

Fifteen miles from downtown Portland, Ponzi Vineyards sits on the banks of the Tualatin River.

Established in 1970, Ponzi was one of Oregon's first wineries and is a standard bearer for a regional industry that has earned worldwide acclaim and brings hundreds of millions of wine-tourism dollars to Oregon annually.

Right next to Ponzi's original 12-acre vineyard of pinot noir, pinot gris, chardonnay and riesling grapes is an unlined dump that last year gobbled up about 180 million pounds of trash.

The dump, called Lakeside Reclamation Landfill, is so close to Ponzi that visitors to the vineyard can smell it, taste its dust and feel the vibrations of its earthmovers.

While the dump has been operating for five decades, neighbors say the noise and stench have worsened dramatically in the past few years.

In a letter last month to Tom Brian, chairman of the Washington County Board of Commissioners, Ponzi marketing director Maria Ponzi Fogelstrom says she has had to curtail the tours that bring wine writers and visitors from all over the world.

"The strong odors, noise and disgusting sight of the dump are major distractions to guests," she wrote to Brian. "The constant flow of trucks, loud sounds of dumping, equipment running and trucks constantly backing up, makes it nearly impossible to focus and be heard."

The dispute between Ponzi and Lakeside owner Howard Grabhorn is not a case of two businesses, both operating legally, that happen to conflict with each other.

Instead, a review of public records and interviews with the three agencies that regulate the dump make clear that for decades Lakeside has been operating in defiance of a variety of land-use and environmental rules.

Neighbors say Lakeside is illegal because it never received the proper land-use and building permits.

"Up until 2001 when Grabhorn applied for a land-use permit, I assumed the dump was just a nuisance," says Art Kamp, 60, a retired chemical engineer who lives nearby. "Then I connected the dots and realized it's a nuisance *and* illegal."

Grabhorn and his attorney, Wendie Kellington, dispute that characterization, saying Lakeside has made good-faith efforts to comply with all regulations.

Lakeside has regularly violated Oregon Department of Environmental Quality standards, and DEQ reports say the dump is leaking contaminants—some of which are pretty nasty—into the groundwater and the Tualatin River.

"Low levels of several human carcinogens including tetrahydrofuran, benzene and arsenic have been intermittently detected in groundwater," says a 2007 DEQ report.

So here's the puzzle: Why do public agencies that tout their environmental stewardship allow an archaic dump on prime farmland near Ponzi Vineyards and just upstream of the Tualatin River National Wildlife Refuge to remain in operation?

Lakeside's case illustrates that Oregon's vaunted environmental protections and stringent land-use laws are no match for a determined operator, especially one with a high-priced legal and lobbying team befitting a far larger company.

"Grabhorn has gone as far as anybody would let him for as long as he can," says Mark Riskedahl of the Northwest Environmental Defense Center at Lewis & Clark Law School. "The fault lies with those who have let him get away with it."

Five decades ago, according to DEQ records, Howard Grabhorn started dumping debris from his demolition business on his land in the Scholls area of Washington County (see map, page 27).

Over time, according to DEQ files, the dump began taking trash from all comers and grew from about a quarter-acre to more than 40 acres today.

The landfill has grown vertically as well as horizontally. In 1983, Grabhorn told DEQ and Washington County that the landfill would not exceed the height of adjacent farms, the highest of which is 209 feet above sea level.

Grabhorn then proceeded to pile trash up to 259 feet above sea level. Though neighbors complained, a Washington County hearings officer ruled in 2004 that to force Grabhorn to lower the dump's height "would be unreasonable."

Today, Grabhorn's mountain of debris towers over the surrounding farmland like a real-life version of Mount Trashmore, the fictional dump on *The Simpsons*.

"He breaks the law and then asks the regulatory bodies to change the law to fit his lawlessness," wrote Dr. Richard Thoresen, a veterinarian who lives near the dump, in a May letter to Metro. "The truly sad thing is, he gets away with it."

Grabhorn has not simply violated his agreement to limit the size of his dump.

He has also repeatedly violated the terms of his DEQ permit, which says the dump is supposed to accept only what's called "non-putrescible" or "dry" waste, such as construction debris, cardboard and wood from ground clearance.

Among the numerous substances Lakeside has accepted over the years, according to DEQ records, are "non-hazardous industrial waste sludge from the Tektronix wastewater treatment plant," as well as prohibited substances: cafeteria wastes, household garbage, paint cans, oil filters and jugs of used motor oil, "baghouse dust and chromium-containing sludge ash." The dump also accepted sands from a company called Western Foundry that DEQ records say "are known to have contained zirconium which has low level nuclear radiation. Dusts associated with Western Foundry operations have contained elevated concentrations of arsenic, cadmium, chromium, copper, lead, and zinc."

Occasionally, DEQ has penalized Grabhorn. In 2002, the agency caught Grabhorn accepting 630 tons of "contaminated soils and chromium-treated animal hides." He was forced to send them elsewhere.

Last year, Lakeside got caught accepting 60 large bags containing "friable" asbestos (which is easily released into the air, distinct from asbestos sealed in building materials), which it was not allowed to do. DEQ forced Lakeside to remove the materials.

Grabhorn tells *WW* that DEQ knew about the various industrial wastes he accepted from Tektronix and that the asbestos was the fault of a rogue contractor.

Since there is little day-to-day monitoring of the dump trucks entering Lakeside, it is easy for the dump to accept whatever contractors want to leave there.

"There are inadequate measures in place to assure that the landfill routinely operates legally," says the NEDC's Riskedahl.

Audrey O'Brien, DEQ's solid waste manager for the Northwest region, acknowledges the agency has been less effective than it should have been in overseeing Lakeside in the past.

She says the agency has recently made Grabhorn's dump a "high priority" and is requiring better monitoring of incoming loads.

Lakeside's history of accepting prohibited substances is particularly troubling because, unlike any other publicly accessible dump in the metro area, it is unlined.

"A landfill is supposed to be lined and capped so nothing gets out," says Henning Larsen, a DEQ senior hydro-geologist. "That's not the case at Lakeside."

Larsen says federal and state laws prohibit the opening of an unlined landfill today, but Grabhorn's dump is grandfathered in because it was operating before current laws took effect.

Neighbors worry that the absence of a liner allows water washing through the facility to pollute groundwater and the Tualatin River.

In 2005, a DEQ report found that "groundwater has been contaminated with concentrations of nitrates and arsenic that have periodically exceeded drinking-water maximum contaminant levels."

So far, the DEQ report says, the leachate has not harmed humans, but "site groundwater contamination could represent a significant threat to local well water users and to aquatic life in the Tualatin River."

"[Lakeside] is definitely a known source of landfill leachate. There's no question about that," DEQ's Larsen says. "They have exceeded their permit-specific concentration limits for a number of hazardous and non-hazardous substances."

Grabhorn disagrees that leachate is entering the Tualatin. "Nothing to our knowledge is going into the river," he says.

Currently, DEQ is trying to determine whether discharges from the dump are harming aquatic life in the Tualatin.

The agency expects results of an investigation into that question by October.

In a recent email to DEQ, Kamp, one of Grabhorn's neighbors, wrote, "I have just been informed of your decision to abdicate responsibility for assuring that Lakeside complies with land use laws as is required by your regulations.... You can trust that we [Grabhorn's neighbors] will do everything within our powers to correct this and other injustices to continue to occur because of his exercise of financial and political power."

Grabhorn doesn't look like a powerful figure. Slight, red-faced and homespun, Grabhorn, 72, appears more like a Christmas-tree farmer—which he also is—than the environmental bandit his neighbors consider him.

But his retinue tells a different story. Grabhorn's lobbyist is Paul Phillips, CEO of Pac/West Communications.

Pac/West is no mom-and-pop operation. Among the firm's clients are Georgia Pacific, the international engineering giant Bechtel, and the coalition pushing to open the Arctic National Wildlife Refuge for oil drilling—and Grabhorn.

So how does a Christmas-tree farmer afford Bechtel's lobbyist? Simple.

"The money in garbage is huge," says Metro Councilor Rod Park.

Over the past decade, for example, Grabhorn has taken in about 80,000 tons annually. At his dumping charge of $50 per ton (recently raised to $52.36), that means he has grossed close to $40 million over that period. (A little less than half of that goes to government fees; it's unclear how much is profit.)

In addition to Phillips, Grabhorn employs a squadron of lawyers, including land-use specialists at two of Portland's biggest firms, Schwabe, Williamson & Wyatt and Davis Wright Tremaine, as well as solo practitioners with more targeted skills. (Davis Wright Tremaine is *WW*'s libel lawyer.)

Grabhorn's most revealing relationship may be with lawyer Mark Reeve. Grabhorn hired Reeve in 2004 after Reeve was appointed chairman of the state Environmental Quality Council. The EQC's five members are appointed by the governor to oversee DEQ.

Unlike other commissions, which are advisory, the EQC has the power to hire and fire the DEQ director. It also "establishes [DEQ] policies, issues orders [and] judges appeals of fines or other department actions," according to the agency's website.

Grabhorn hired Reeve in September 2004, shortly after Lakeside failed to notify DEQ of potentially serious contaminants it had detected.

On March 18, 2005, while still serving as EQC chairman, Reeve, acting as Grabhorn's attorney, wrote a letter to Larsen, the DEQ hydro-geologist, requesting that Reeve "be copied on any communication to or from DEQ" regarding Lakeside.

Grabhorn maintains that he did not hire Reeve because of the lawyer's EQC chairmanship. "I don't think it came up until after he joined the team," Grabhorn told *WW*. "The reason I hired him is he had a lot of experience with landfills."

Larsen, who has been at DEQ for 15 years, says Reeve met with him twice on Lakeside's behalf. Asked whether he'd ever before been contacted by a commission member representing a client, Larsen says "only once."

That contact also involved Reeve, he says, acting on behalf of another client.

The idea that the chairman of a board of a regulatory agency would simultaneously serve as the hired hand of a dump owner who has business before that regulator—and has a record of violating that organization's rules—strikes some as outrageous.

"It is, at the very least, remarkably imprudent for a member of an independent oversight board to simultaneously represent a member of the very same community the board is charged with impartially regulating," says NEDC's Riskedahl.

Jeremiah Baumann of Environment Oregon (formerly OSPIRG), agrees. "It's problematic to have an EQC chair representing somebody who is violating DEQ rules," he says.

"There's certainly the appearance of conflict of interest on the issue of water quality, which is one that requires great public trust," says Sen. Brad Avakian (D-Bethany), chairman of the Senate Environment and Natural Resources Committee.

Reeve strongly disagrees with the critics. "I operated under the standards that were applicable," he says. "I think what I did was entirely appropriate."

For her part, DEQ director Stephanie Hallock says she sees no problem with Reeve's representation of Lakeside, because the EQC was never involved in Lakeside matters. "It's a matter of no consequence," Hallock maintains.

In 2004, Kamp and another neighbor filed a complaint against Reeve with the Oregon State Bar. The Bar dismissed that complaint in August 2005, saying that because Lakeside's issues with DEQ never rose to the EQC level, Reeve had no conflict of interest.

While DEQ is the principal agency that regulates Lakeside, Washington County also plays an important role because it has authority over land-use issues.

Whether Lakeside holds a valid county land-use permit is a matter of great dispute.

Lakeside went through a 1991 process called a "land use compatibility study," which found that the landfill did not need a permit because it was grandfathered in as a "non-conforming use."

Neighbors say, however, that Grabhorn misled county officials in that 1991 process, stating that he had no plans to expand his operation—and then promptly did so. They also argue—and Washington County agrees—that he needs but never obtained permits for two of the buildings associated with Lakeside.

Washington County Chairman Brian says the dispute is one of mind-bending complexity. "If there were a clear answer, we would have settled it years ago," he says.

At times, the rapidly growing county has been friendly to Grabhorn, who provides a cheap and convenient place for the homebuilding industry to dump its waste. In 2001, the county even agreed to pave a road to Lakeside and maintain it for 15 years for free. In exchange, Grabhorn agreed to allow the county to dump waste in his landfill for free for the same period of time.

Metro also has some authority over Lakeside, and based on a proposal put forward last week, that agency may be taking the harshest line with Grabhorn.

Lakeside is actually located just outside Metro's jurisdictional boundaries. But in 1993, the agency granted Grabhorn a contract allowing him to accept trash from inside Metro boundaries. That waste stream now accounts for about 85 percent of the waste dumped at Lakeside.

What Grabhorn's neighbors only recently came to realize is that Metro requires Lakeside to comply with "all federal, state, regional and local laws." Recently, neighbors have asked Metro to cancel his contract on that basis.

"Grabhorn's never had a valid land-use permit, and he's broken a lot of DEQ rules," says winemaker Dick Ponzi.

Like Washington County, Metro must manage conflicting agendas. The agency that supplies Grabhorn with trash previously designated the nearby Tualatin River a "greenway" and last fall successfully asked voters to give Metro $220 million to buy more greenspaces.

Ultimately, a proposed new Metro recycling policy may be the hammer that shuts Lakeside down. Metro wants Grabhorn to recycle more, but he says the cost is prohibitive. If he doesn't comply, Metro can cancel his contract, cutting off the dump's lifeblood.

Last week, Metro told Grabhorn that if he agrees to close Lakeside by July 1, 2012, it will exempt him from recycling between now and then. Neighbors are wary of the proposal. On one hand, Kamp says, it could give them what they want—closure—albeit in five years, during which time anything could end up in the dump. On the other hand, exempting Grabhorn from a recycling policy with which others must comply perpetuates his ability to evade the rules.

Metro Council President David Bragdon says his agency is attempting to be responsive to neighbors' concerns.

"Lakeside wasn't really a priority issue for us until recently because the other agencies have far more control," Bragdon says. "But our contract does give us some leverage."

Closing the dump, of course, is what neighbors want. But for decades, records show, closure has been a moving target.

In 1973, for instance, Grabhorn said in a document the facility had only five years of operation left. Last year, one of his attorneys wrote that Lakeside would close in 2017.

In recent negotiations with DEQ, Washington County and Metro, however, Grabhorn's representatives have raised the threat that a recycling mandate or forced premature closure could imperil his ability to pay for clean-up costs and the 30 years of post-closure monitoring that are by law his responsibility.

That has led to a series of proposals, including one from Metro that the public take over his mess and create a memorial to him.

A written proposal circulated in early June suggested that Metro "consider purchase of [Grabhorn's] Tualatin Riverfront property for the purchase of a Metro open space." Grabhorn would then put those Metro dollars—approved by taxpayers last November—toward his obligation to clean up the dumpsite.

And what would become of the waterfront land? "Metro will consider offering naming rights of the parcel to Howard Grabhorn," the proposal said.

Maria Ponzi Fogelstrom, the vineyard's marketing manager, recoils at the prospect of a "Grabhorn Park" next to her family's winery. "That is appalling and frankly just a tad humorous," she says. "I don't know of anybody in this community who would want to go to a park with his name on it."

In addition to his dump, Howard Grabhorn also has a composting facility that grinds woody debris into chips for net "bio-bags" used for stormwater control.

In addition to their wine business, Dick Ponzi and his wife, Nancy, founded Oregon's oldest microbrewer, BridgePort Brewing, in 1984.

The proposed recycling policy Metro wants Grabhorn to comply with is part of an attempt to raise the region's overall recycling rate from 59 percent to the state-mandated 64 percent.

Metro Councilor Rod Park says alternatives to Lakeside exist. "There is a tremendous amount of capacity in Arlington and a lot in Hillsboro," Park says. "But he's the lowest-cost option, and that subsidizes the construction and development industry."

Lakeside is popular with contractors because, according to Metro, it is the cheapest place to dump construction debris in the region—about 20 percent less than Hillsboro's landfill.

Last November, Washington County voters agreed to raise the county lodging tax from 7 percent to 9 percent to promote tourism, especially wineries and natural recreation sites such as the Tualatin National Wildlife Refuge.

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MEMO

August 1, 2007

To: EQC Commissioners

From: Day Marshall, Office of the Director, Oregon Department of Environmental Quality

Re: Staff Reports and agenda for the EQC meeting on August 16, 2007 in Portland

Our one day EQC meeting is scheduled to be held at the EcoTrust building in northwest Portland from 8:00 – 4:00 on Thursday, August 16.

I have reserved a hotel room for each of you at the FourPoints near the river. I will arrange to have a DEQ staff person come by to pick you up for the meeting. Please let me know if you would like to ride to the EcoTrust building (parking is a challenge in that area, so the fewer cars the easier on everyone).

Enclosed please find the following items:

- Draft agenda for the meeting (note executive session is scheduled at 8:00 and the public form and Item D are switched due to some rescheduling)
- Item D – request for dismissal of contested case AQ/AB-WR-05-187
- Item F – LRAPA funding authority delegation
- Item G – Strategic Direction performance measures update (unsigned version)
- Item H – Title V fee increase temporary rule adoption

The minutes for the June EQC meeting as well as Item B: Informational update on the Chemical Disposal Facility and an Action Item pertaining to UMCDF are forthcoming. The Director's Dialogue will be included in your white folder at the meeting.

Take care and we'll see you in a couple weeks!

EQC Meeting Agenda
Thursday, August 16
EcoTrust Building
Portland, Oregon

Thursday, August 16--*Regular Meeting*

Time	Item	Topic	Notes
8:00 60 min		Executive Session	
9:00 15 min	A	Preliminary Commission Business: Adoption of Minutes of the June 21-22, 2007 Meeting	
9:15 45 min	B	Informational Item: Update on the Status of the Umatilla Chemical Agent Disposal Facility (UMCDF)	Joni Hammond and Rich Duval
10:00 15 min.		Break	
10:15 60 min	C	Informational Item: Director's Dialogue	Include Greg's Budget and Legislative Update. May also include Director Recruitment discussion.
11:15 45 min	E	Public Forum	
12:00 45 min		Lunch	
12:45 30 min	D	Action Item: Request for Dismissal of Contested Case No. AQ/AB-WR-05-187 regarding Alpine Abatement Associates, Inc.	
1:15 30 min	F	Action Item: Delegation of Lane Regional Air Protection Agency Funding Authority	Andy Ginsburg
1:45 45 min	G	Informational Item: Update on Strategic Direction Measures (Internal Executive Performance Measures)	René-Marc Mangin, Karen Whisler
2:30 15 min		Break	
2:45 60 min	H	Temporary Rule Adoption: Oregon Title V Operating Permit Program Fee Increase	Andy Ginsburg, Uri Papish, Andrea Curtis
3:45 15 min	I	Commissioners' Reports	
4:00		End of Meeting	

Thursday Evening: Dinner w/ Stephanie, Dick, Lynn, Bill, Elin Miller and Socorro Rodriguez at the Heathman Restaurant at 6:00.

Contact: Helen Lottridge (503) 229-6725
Revised 8/1/2007

Commissioners,

Preparation for this meeting has been pretty interesting.

We changed the Executive Session from lunch to first thing in the morning. Mike Carrier of the Governor's Office will be joining you for Executive Session and he has to leave by mid-morning.

Per my earlier email, we have also removed the strategic directions measures report from the agenda in order to add a public comment and discussion item on field burning.

We have also rearranged the order of agenda items considerably. This is partly because of moving Executive Session. In addition, we made Director's Dialogue the first item on the regular meeting agenda so that Mike Carrier can participate.

Lynn, Stephanie would like an opportunity to introduce Joanie Stevens-Schwenger, Nina Deconcini's replacement, at the very beginning of the meeting.

Helen

Item B
07-1252

Umatilla County
Board of County Commissioners

COPY

August 13, 2007

VIA ELECTRONIC MAIL AND HAND DELIVERY

Rich Duval, Administrator
Chemical Demilitarization Program
256 E. Hurlburt
Hermiston, OR 97838

Re: Umatilla Chemical Agent Disposal Facility

Dear Mr. Duval:

The Umatilla County Board of Commissioners met Monday (August 13th) to consider the "Secondary Waste/Best Available Technology" matter that the Environmental Quality Commission is to decide on August 16th.

The Board passed a motion to support the DEQ recommendation. We agree that current technologies available at our site are the best available technologies for the treatment of the secondary waste generated at our site.

Please note that this technology is proven on the basis of prior experience at this site; that the community has been supportive of this technology; and that there has always been the understanding that secondary waste generated here would be disposed of here.

We believe that it is in the best interests of Umatilla County and its citizens that the use of current available technology be ratified, and that we proceed with disposal of the secondary waste now being stored on site so that it is gone before the VX campaign begins.

I am directed by the Board to convey its action and sentiments to you by this letter. Thank you for your consideration.

Sincerely,

Dennis D. Doherty
Chairman
Umatilla County
Board of Commissioners

cc: Umatilla County BCC

Office of the Mayor
180 N.E. 2nd Street
Hermiston, OR 97838-1860
Phone (541) 567-5521 • Fax (541) 567-5530
E-mail: bseverson@hermiston.or.us

August 13, 2007

Mr. Rich Duval
Chemical Demilitarization Program Administrator
256 E Hurlburt
Hermiston, OR 97838

Mr. Duval,

The City of Hermiston appreciates the opportunity to comment on the current issues being discussed by the Environmental Quality Commission with regard to the ongoing operation of the Umatilla Chemical Agent Disposal Facility. The following comments summarize important points that we wish to emphasize:

The City concurs with the DEQ staff recommendation that the current methods available at the Umatilla Chemical Agent Disposal Facility for secondary waste treatment are the "best available technology."

There are no objections to using the Metal Parts Furnace or other existing methods for processing secondary waste originally intended for the Dunnage Incinerator.

As officials of the largest city in the IRZ protective zone, we feel strongly that it would ensure the best possible outcome for workers, the community and the environment if the Umatilla Chemical Agent Disposal Facility would be allowed to continue processing secondary wastes as before.

The City qppreciates the diligence shown by the Oregon Department of Environmental Quality and Environmental Quality Commission in meeting the challenges of moving forward with this vitally important project while building upon Oregon's legacy of clean air, water and land.

Sincerely,

Bob Severson

Bob Severson
Mayor
Hermiston, OR

August 9, 2007

Mr. Duval,

I understand there is an issue before the Environmental Quality Commission on whether the Army can continue to use its existing methods of disposing of wastes of chemical weapons disposal.

The current methods of waste disposal have been proven over several years and the state should consider them to be the best technology available. I am sure if there were better ways to do it, they would have figured it out by now.

The community is comfortable with the progress made by the Army depot and wants the work to continue without interruption.

Thank you for the opportunity to comment and keep up the good work.

FRANK J. HARKENRIDER

935 S. First St.

Hermiston, Oregon

DUVAL Rich

From: Tim Mabry [tmabry@oregontrail.net]

Sent: Monday, August 13, 2007 10:07 AM

To: DUVAL Rich

Subject: Public Comment--Secondary Waste Disposal Best Available Technology

Dear Mr. Duval,

I am writing to express my opinion that we not delay the demilitarization process by changing the method that we are using currently.

It seems to me that the Army's experience on Johnson Island is valuable and while other methods may exist, let's go with proven methods and finish the job.

As a local resident and business owner, I support the diligence shown by the Oregon Department of Environmental Quality and Environmental Quality Commission in meeting the challenges of moving forward with this vitally important project while building upon Oregon's legacy of clean air, water and land.

We need your leadership now to keep the process moving to completion.

Delay is the greatest threat to public well being. I live here (in the red zone). I am comfortable with the current efforts and want to see the project finished ASAP.

Sincerely,

Tim Mabry
President
Credits, Inc.

TAYLOR Kelly

From: DUVAL Rich
Sent: Tuesday, August 14, 2007 4:09 PM
To: RAY Shilo; TAYLOR Kelly
Subject: FW: Umatilla Army Chemical Depot

Another one.

-----Original Message-----
From: Darryla Treat [mailto:darryla.treat@umatillaelectric.com] **On Behalf Of** Steve Eldrige
Sent: Tuesday, August 14, 2007 4:08 PM
To: DUVAL Rich
Subject: Umatilla Army Chemical Depot

Dear Administrator Duval:

Our understanding of the DEQ proposal is that the Umatilla Army Chemical Agent Disposal Facility's current procedures and equipment utilize the best technology available and, therefore, should continue to be used.

Further, until recently, secondary waste has been incinerated using the same incinerator as used to dispose of the chemical weapons. We understand that all standards have been met continuously during both chemical weapons and secondary waste incineration and disposal. It is our belief that since all disposal standards and criteria are currently being met, these processes and procedures should continue for both chemical weapons and secondary waste disposal.

We urge you to immediately resume the disposal of secondary waste as the chemical weapons are processed. The Army has steadfastly committed to leaving no waste behind. This commitment must be honored by the Army.

Thank you.
Steve

M. Steven Eldrige
General Manager and CEO
Umatilla Electric Cooperative
PO Box 1148
Hermiston, OR 97838
(541)567-6414

COPY

From: Stephen A. McFadden, M.S.
5521 Greenville Ave #104-608, Dallas, TX 75206

To: Rich Duval, Chem Demil Pgrm Admin, 256 E. Hurlburt, Hermiston, OR 97838
541.567.8297 x22; 541.567.4741 fax; duval.rich@deq.state.or.us

Re: Proposed Changes at the Umatilla Chemical Weapons Incinerator:
UMCDF "Secondary Waste Best Available Technology Determination" 8/14/2007
UMCDF-07-033-MPF(2) [Class 2/VX Trial Burn Plans] 8/29/2007
UMCDF-07-032-HVC(TA) [reduced carbon filter change during agent changeover]
and every other public comment period which is currently open.

I. Identity of Commenter:

My name is Stephen A. McFadden. I am a native of the Tri-Cities, graduated from Kennewick High School, and won the Washington State Science Talent Search held at Battelle. I have a B.S. Degree in Physics, a M.S. Degree in Computer Science, and interned as a student at three U.S. Department of Energy nuclear laboratories. I was a graduate student at the U.S. DOE's Lawrence Livermore National Laboratory, founded by Dr. Edward Teller, during the height of the Reagan Administration's "Star Wars" program.

I commented extensively on the Umatilla Chemical Weapons Incinerator draft Environmental Impact Statement (EIS) during 1991-2. At that time, I suggested that the toxicology of the organophosphates was fundamentally flawed. That assessment—made before the Tokyo Sarin incident, and a half a decade before the Gulf War health effects became a major national issue and the Khamisiyah Incident was revealed in mid-1996--was correct, as was recently demonstrated in the 2004 James Binns Report by the Department of Veteran's Affairs Research Advisory Committee on Gulf War Illness.

II. Mishap Creep: Impending Danger at Umatilla:

The Umatilla Chemical Weapons Incinerator was designed according to a specification proposed to the public. But now the U.S. Army wants to take "short cuts". These include: 1) shipping secondary waste off-site for disposal; 2) "recycling" agent contaminated steel back into the economy; 3) shipping brine waste across the state; and 4) not changing all the filter media during changeover operations. These "short cuts" are misguided because they trim critical margins of safety in the face of unknown risks.

Let me direct your attention to the phenomena of "mishap creep", a concept well understood by the U.S. Air Force as a result of its year-round world-wide all-weather aircraft operations. When everything goes well in a technological system, people tend to expand product use, and begin to take procedural and safety short-cuts. Then there is an accident or a series of accidents, a quick review, increased regulation, and practices become more stringent. What thus happens is that the use of technological systems to oscillate around a political endpoint of a

socially-determined level of "acceptable losses". Sheldon Samuels of the AFL-CIO has called this "cannibalistic titration", because the process titrates to a socially-determined endpoint of "acceptable" human losses.

The problem with using the titration approach on the Umatilla Chemical Weapons Incinerator is that this is NERVE GAS at issue, which has NEVER BEEN TESTED to an appreciable extent in humans; it is a SENSITIZER, a NEUROTOXIN, there are SUSCEPTIBLE HUMAN SUBPOPULATIONS, and there is an UNKNOWN MARGIN OF SAFETY.

On rare occasion, one may see an old "nerve-gasser" with a facial tic, an eye flutter, and a fidget, try to tell you that "nerve gas" is safe. Having seen this neurotoxic behavior before, some of us can recognize "nerve gasser's tic" on sight. Presumably it occurs as a result of have been "bit" one too many times by anticholinesterase agents, and is due to a periodic momentary seizures which resulting from chemical kindling of the nervous system by acute overexposures to anticholinesterase agents, as demonstrated by the landmark epilepsy experiments by Graham Goddard of McGill University in 1967, as extended to anticholinesterase agents by Burchfiel and Duffy in the late 1970s. These "nerve-gassers" have been exposed to a bit too much of their "own medicine", and thus you should consider their statements accordingly. Don't believe them. The U.S. Army doctrine is false, and the public has not contracted for exposure to such exotic hazards.

I note that the U.S. Army failed to build the dunnage incinerator, apparently believing that they could change the plant design parameters by fiat. This appears to me to be an attempt by the U.S. army to force agent-contaminated material to be shipped cross-country without prior public consent. The unilateral attempt to change this design parameter should be disapproved.

I recommend that all the proposals to reduce destruction operations at the Umatilla Chemical Weapons Incinerator by shipping agent contaminated materials, including dunnage, brine, and scrap steel, off-site for further processing before disposal, and all attempts at "recycling" such materials, be categorically denied. In late 2001, I suggested in a public comment on the incinerator that the scrap steel be buried in a nuclear waste site rather than being released back into the domestic economy for unknown distribution and reuse. The toxicity of the nerve agents has too many unknowns, and there are too many hazards, to risk public safety by transporting these materials around the country or releasing them into the public economy.

III. U.S. DoD is Paid – and REQUIRED - to Lie to the U.S. Public:

Periodically, there are intelligence scandals involving U.S. Government agencies. But the fact is that the U.S. hires "spooks" to try to keep the country out of trouble, and the U.S. public requires those "spooks" to lie to them. This is also true with strategic weapons technologies, including those associated with nuclear, chemical, and biological weapons. The U.S. public thus requires its government to lie to them.

This political fact has consequences on the public policymaking process for such strategic weapons technologies, and on the ability of nongovernmental organizations to operate effectively

in this political environment. The operation of nongovernmental organizations is impaired because they are denied essential factual data necessary for them to understand and critically review proposed government policies and operations.

Let me direct your attention to an article in the Tri-City Herald on March 21, 2002 titled "VX agent's true toxicity revealed in study at depot":

> The thousands of containers of VX agent stored at Umatilla Chemical Depot are 10 times more deadly than regulators expected. "It takes only one-tenth as much agent to do what we thought. It's a lot more bad than we thought," Thomas Johnson, administrator for Oregon's Office of Public Health, said Wednesday. A new toxicity study of the chemical stockpile at the Umatilla Chemical Depot revealed the surprise. It wasn't immediately clear whether the federal study raises new health concerns or how it will affect emergency preparedness plans.

The article thus admits that the toxicity of VX was understated by a factor of 10. We suspect that this was publicly admitted only because this fact had already been leaked in certain forums within the U.S., so that further cover-up was no longer productive.

Those who have followed the history of the U.S. Army chemical weapons program know that no U.S. chemical agent stockpiles have been moved within the Continental U.S. since 1969, as a result of a landmark executive order written by U.S. President Richard M. Nixon in the wake of the "Skull Valley sheep kill" and the Guam Drift Incident, who made an executive decision to de-emphasize the U.S. reliance on chemical weapons and increase U.S. the reliance on strategic nuclear weapons, which could be handled and protected with much better precision and accuracy. As a result, this lie about the toxicity of VX was made less relevant, and was thus effected upon the U.S. public for over 32 years! Fortunately, despite the fact that the U.S. army lied for 32 years, the CDC, in writing the Programmatic Environmental Impact Statements for the Chemical Stockpile Disposal Program, threw in an extra factor of ten for safety, so it all supposedly evened out, except for flaws built into shelter-in-place community emergency response plans.

Let me further direct your attention to another newspaper article, in the Anniston Star on March 4, 2004, titled "Outdoor air monitor gives unexplained VX reading". It was reported that there was a positive VX detection at the fence line "four miles from storage to the monitor on the edge of Pelham Range". Now, I will not try to explain to the public how VX, which has the weight of about 30-weight motor oil, sprouted wings and flew the four miles to the fence line. I personally have no problem imagining such a feat, in light of the "Skull Valley sheep kill" where a few gallons floated maybe 15 miles downwind and killed several thousand sheep, and the Guam Drift Incident, also that year, where more than 20 persons were sickened but the source of agent was never found.

Further evidence of a drift problem with nerve agents at Anniston may be found in a news article in the Anniston Star, December 15, 2002, titled "Medical mystery":

> Right now, in western Anniston, a woman's face is twisting. Her mouth is pulling, and

her lips are getting closer to her ear. Her left eyelid is fluttering, and to compensate, she opens her right eye wide - her dark pupil focused on a spot on the ceiling. Soon, her face will lock, like a tightly drawn knot, and tears will escape from eyes clamped shut.

And right now, in a yellow house with a tidy lawn, the same woman's hands are working. They turn page after page of medical studies, highlighting and underlining with the steadiness of a surgeon, then slipping the clues into a notebook. Soon, her evidence will be thicker than the family Bible. ...

It was strong seven years ago, in the days after a force as shapeless as the wind struck at her health. Doctors have been unable to determine the cause of her sickness, but she believes the symptoms point to Anniston's stockpile of chemical weapons. Her search for the truth has been fruitless. Soon, hope may flicker out. ...

It was already 84 degrees at 7:45 a.m. on Aug. 3, 1995 - the heat well on its way to eclipsing a 90-plus-degree reading for the 46th straight day. The wind from Hurricane Erin had reached Anniston ahead of the rain, whipping up gusts of 19 mph.

Porter, an early riser, had eaten breakfast and decided to carry her recycling bin to the street. A strong, healthy woman at the time, she was walking in her driveway, under a tall oak tree, when she says she stepped into a shear wind, the downward kind that knocks airplanes from the sky. She says it pushed on the bin, making it heavy and awkward to hold. She didn't think to drop it, instead stumbling around with the weight of it "like I was drunk." The force lasted a few moments. She looked around, a bit embarrassed. Nobody on her street was outside.

Fifteen minutes later, Porter heard an "exploding noise in her ears." Her body began to tingle. Her eyes felt strange. The muscles in her face began to tighten, and she could not extend her tongue from her mouth. Breathing became an effort, so she lay down on her bed. Her 76-year-old mother found her a few minutes later and called an ambulance. At Regional Medical Center, she began to vomit. Her face began to twitch, and her nose began to drain. "I thought I was dying, the way I felt," she said.

Emergency room doctors diagnosed her with a stroke and prescribed therapy. But therapists soon agreed her continued symptoms, particularly her twitching face, were not consistent with a stroke, which can cause a face to droop but cannot induce sustained spasms. Other doctors suspected Bell's palsy, but ruled that out as well.

During this time, Porter began to study Anniston Star reports on a Sarin nerve agent leak at the depot that occurred Aug. 1, 1995, and that was not contained until the morning of Aug. 3, the morning Porter fell ill. ...

... A couple of years ago, a young woman approached Porter at the grocery store. "You look just like my momma," she told her. Porter went to see the woman, whose face also twists and twitches on her left side. The woman, who is employed by the Army in the Midwest and who does not want her name printed, told Porter that her spasms started in

August of 1995. She was living in Anniston then, and her husband was about to retire from the depot.

Unlike Porter, she had no immediate health crisis. She did consult physicians, and has continued to seek help for seven years, but her sickness has continued to progress.

This, of course describes two cases of classic "nerve-gasser's tic". Let me demonstrate the relevance of the drift problems at Anniston to Umatilla. I direct your attention to a newspaper article in the Tri-City Herald, dated October 31, 2003, titled "Witness testifies cows died near depot":

> Mann, who testified via telephone from Hermiston, said he worked for the late Mervin "Red" Leonard as a ranch hand for more than 20 years, and also had been a union laborer. Leonard's property, the LM Ranch, bordered the chemical depot on the east side, just 100 yards from the depot's rifle range, Mann said. He testified that during the early spring of 1974 or 1975, Leonard sent him to a pasture bordering the depot, where he found seven dead Herefords in a bunch. "They were bleeding from the nose and mouth, and had been dead for a day before I got there," he said. Mann said the cows' eyes were bulging and there was dried foam at their mouths, indicating they had slobbered heavily.
>
> Nearly 15 years later, in 1989, Mann said, he went to check cows in the same pasture and found them in similar shape, although they hadn't been dead as long. "They were still warm, and bleeding at the eyes and mouth, and foaming at the mouth," he said. Mann said none of the animals was ever tested to determine why they died. They were simply buried and Leonard shrugged off the deaths as cases of bloat. But Mann said he was positive that wasn't the case. The cattle's symptoms, he said, were not consistent with bloating death. Although their eyes were "popping" their bodies weren't swelled, he said. "I was there a week before and a week later, and we had cows in that area that did not die," he said. Mann said the incident in 1989 was particularly curious to him "because it looked so similar" to what had happened in the '70s.

The moral of these stories is that, when it comes to strategic weapons technologies, the U.S. Army is willing, and is in fact required, to lie to the U.S. public. The U.S. Army lied about the true toxicity of VX for more than 32 years—from before 1969 until 2002, and has similarly had a number of unexplained nerve agent drift problems over the years.

THE ARMY IS REQUIRED TO LIE, THEREFORE, DON'T BELIVE THEM!!!

IV. Flying Blind: Nobody Remembers Where the U.S. Chemical Corps Skeletons are Buried:

Let me direct your attention to another newspaper story. This one was published in a local newspaper in Newport, Indiana. It seems as though a few years ago the Base Realignment Advisory Commission was trying to dispose of old military bases, and they were trying to figure out how to get rid of the old VX plant at the Newport Army Ammunition Depot. Those who have followed the U.S. chemical weapons program know that Newport had been an old heavy

water plant during WWII, when it was locally called "the cup factory". A major feature of the heavy water facility had been a ten thousand foot well. In about 1960, the nation's only VX plant site was built on the site.

Now, it seems as though the Base Realignment Advisory Commission decided one day that they were going to turn part of the Newport site over to Vermillion county in order to turn it into an industrial park. As the local newspaper reported on December 5, 2005, titled "Newport Facility Investigation":

> "And Tom Burch knows if the federal government hands over the land to Vermillion County, dangers could be lurking underground.
>
> Saying when employees neutralized VX in the 60's the remains were buried. "It was neutralized then pumped 6,000 some feet into the ground. After I left it became so loaded they couldn't pressure pump it down so they filled it up with cement."

It thus came to pass, when this misguided proposal was floated, that a former lead lab technician at Newport let loose a few choice comments in the local newspaper about them having crammed neutralized VX waste down a well until it plugged up solid, then capping it off and burying the wellhead in concrete.

The point is that all the old "nerve-gassers" have retired or died off, and, because the young-ins learned what they know from official propaganda, they never learned where the real skeletons were buried—literally buried, in the case of Newport, in the many thousands of gallons of neutralized VX waste that were crammed down a well at the Newport VX plant site.

Hopefully the U.S. Army will turn the last of the Newport base into a "national sacrifice zone", rather than trying to make it into a park, because that well is probably far too deep to ever clean up.

V. If There Is An Accident at Umatilla Depot, No One Will Be Compensated!!!

You might review the series of newspaper articles in the Tri-City Herald about the Sept. 15, 1999 incident at the Umatilla Chemical Weapons Incinerator, and the trial that followed. The articles which covered the trial include:

Newspaper	Date	Title
TCH	April 22, 2000:	Report on illnesses at depot gives criticisms
TCH	July 30, 2000:	Depot workers sue Army, Raytheon
TCH	Aug. 1, 2000:	Workers at depot say fumes 'like fire'
TCH	Sept. 7, 2000:	Raytheon workers got decent care, judge says
TCH	Dec. 19, 2000:	Lawyer claims Army hid illness's cause
TCH	Jan. 18, 2001:	Depot suit to be refiled by lawyers

TCH March 18, 2001: Depot incident still lingers
TCH April 24, 2001: Toxic sealant not linked to illness
TCH April 21, 2001: Army still checking out sealer found at depot
TCH April 20, 2001: Toxic sealant found at depot may be tied to illnesses
Augusta, Georgia Chronicle
Jun. 24, 2001: Chemical depot mystery investigated
TCH Sept. 30, 2002: 1999 depot incident haunts family
TCH Oct. 29, 2002: Depot trial questions Army's integrity
TCH Oct. 25, 2002: Medical records sought in depot trial
TCH Oct. 24, 2002: Trial begins that could stop depot burning
TCH Oct. 21, 2003: Depot trial starts
TCH Oct. 24, 2003: Ex-civilian manager testifies in depot trial
TCH Oct. 28, 2003: Army doctor testifies at depot trial
TCH Oct. 29, 2003: Firms dispute blame in trial
TCH Oct. 30, 2003: Raytheon's emergency manager testifies
TCH Oct. 31, 2003: Witness testifies cows died near depot
TCH Nov. 1, 2003: Army ignored potential leak, lawyer says
TCH Jan. 23, 2004: Attorneys ask judge to consider depot leaks in ruling
TCH Feb. 7, 2004: Judge rules for Umatilla depot workers
TCH May 14, 2004: Mediation attempt unsuccessful in sarin vapor exposure lawsuit
TCH June 13, 2004: Family of sickened chemical depot worker mourns, 'It's like he died that day'
TCH Jun. 13, 2004: Depot workers take case back to court
TCH Jun. 15, 2004: "Attorney for workers claims evidence of chemical leak"
TCH June 16, 2004: Doctor testifies in depot lawsuit
TCH Jun 17, 2004: "Former depot worker testifies"
TCH Jun. 18, 2004: "Psychologist testifies at depot trial"
TCH June 19, 2004: "Paramedics ruled out nerve agents in incident"
TCH June 22, 2004: Chemicals overlooked in depot event, doctor says
TCH June 23, 2004: Army expert testifies at trial
TCH Jun. 24, 2004: Exposure claims called 'hysteria' at depot trial
TCH Jun. 25, 2004: "Judge seeks further answers"
TCH June 29, 2004: Depot site was cleaned, Army expert witness says
TCH Jun. 30, 2004: "Attorneys give closing arguments in depot trial"
TCH Oct. 15, 2004: "Judge clears Army in workers' illness"
Augusta, Georgia Chronicle
Oct. 16, 2004: "Army not held responsible for chemical workers' claim"

The general position of the U.S. Army on the September 15, 1999 Umatilla Depot Drift Incident is that "no agent was released", "it was not our job" to manage an evacuation, "it was mass-hysteria", "these workers are nuts", and "it's all in their heads".

Let me direct your attention to the testimony of the plaintiff's medical expert, described in an article in the Tri-City Herald on June 18, 2004 titled "Psychologist testifies at depot trial":

Construction workers injured at the Umatilla Chemical Depot almost five years ago

suffer from long-term injuries and emotional problems similar to those experienced by the victims of the Tokyo sarin attacks, a psychologist testified Wednesday. Dr. Rosemarie Bowler, a neuropsychologist from San Francisco State University, told U.S. District Court Judge Dennis Hubel she interviewed 17 of the 49 construction workers who are suing the Army. The workers believe the injuries they received during a mysterious accident at the Umatilla Chemical Depot on Sept. 15, 1999, were caused by a chemical weapons leak.

Bowler said most of the workers she examined in 2003 had long-term cognitive disorders, impaired vision, depression and post-traumatic stress disorder. The workers were building an incinerator plant just a few hundred yards from K block, where the Army stores 3,717 tons of sarin and mustard gas, when more than four dozen of them simultaneously became violently ill. Bowler said the workers reported symptoms similar to what was seen in Tokyo -- blurred vision, difficulty breathing, headaches and burning lungs. Later, she said, they reported experiencing problems with sleep, memory, sexual dysfunction and depression.

"(The symptoms) are consistent with the findings in Tokyo?" asked James McCandlish, a Portland-based attorney representing the workers. "Yes," replied Bowler, a chemical exposure specialist who interviewed victims of the March 20, 1995, attack in Tokyo in which terrorists leaked sarin nerve gas into the city's subway system, killing 11 people and injuring more than 5,500. "In meetings with health professionals in Japan, they are still treating many of the symptoms," she said.

Compare this to the U.S. Army's position, as recounted by the *Tri-City Herald* on June 24, 2004, titled "Exposure claims called 'hysteria' at depot trial"

It's all in their heads. That's the conclusion Dr. Laurence Binder came to after examining 18 construction workers who claim they were exposed to sarin five years ago while working at the Umatilla Chemical Depot. "I'd classify it as mass hysteria," the Beaverton-based neuropsychologist testified Wednesday in Portland during the federal trial in which 49 workers are suing the Army for negligence. ...

Binder said one worker, Matt Greenup, who now lives in Portland, had symptoms of depression, paranoia and anxiety disorders. Although another doctor diagnosed Greenup with post-traumatic stress disorder, Binder disagreed, saying the onset of the disorder can only follow a "real" event. "Is your opinion there was no PTSD based on your belief there was no exposure?" Hubel asked Binder. "It's based on my belief they were exposed to an irritant instead of (chemical agents)," Binder replied. "If there was a sarin exposure, then would your opinion of Greenup's PTSD change?" Hubel asked. "Yes," Binder said.

Notably, Dr. Laurence Binder, Ph.D. is an Epilepsy Center Neuropsychologist at Oregon Health Sciences University (OHSU). Dr. Binder has been a co-author with Dr. Peter Simner Spencer, founder of OHSU's Center for Research on Occupational and Environmental Toxicology (CROET). Dr. Spencer led the Gulf War Health Effects study at OHSU CROET. He has also been an advisor to the Governor of Oregon on the Umatilla Chemical Weapons

Incinerator. More importantly, Dr. Spencer led the National Research Council's 1981-2 study of the Edgewood Arsenal chemical weapons test subject, a study which was, in the wake of the Gulf War health effects debate, admitted by him in his CROET newsletter to be inconclusive due to "funding constraints", a study which was criticized by reporter Linda Hunt in her book "Secret Agenda"--the definitive expose' of "Project Paperclip". Hunt states that Dr. Spencer has a former association with Edgewood Arsenal, and she has reason to know, having FOIA-ed several thousand documents out of Edgewood. Given Dr. Spencer's long history of international consulting on behalf of the U.S. Government, I personally consider Dr. Spencer to be a politician first and a scientist second. As such, I do not consider Dr. Spencer's opinion on the matter of nerve agent toxicity to be independent. I further do not consider the opinion of anyone associated with either Dr. Spencer or the CROET toxicology program that he founded at OHSU to be independent on the subject of nerve agent toxicity.

The army's position in this matter is simply not credible. The neurological effects of nerve gas are well known, having been studied since the first German study, published in 1963 by Ulrich Spigelberg of Stutgart. Hundreds of thousands of veterans of the 1990-1 Persian Gulf War have reported neurological effects of anticholinesterase agents and their synergists, as have hundreds of victims of the Tokyo Sarin Incident.

The point is that if anyone gets hurt from nerve agents associated with operations at the Umatilla Chemical Weapons Incinerator, they will not be compensated, because the exposures, neurological effects, and causal connection will be unable to be sufficiently proven to meet the Daubert v. Merrell Dow standard required to be admitted as scientific evidence within the U.S. court system.

Therefore, justice demands that Oregon Department of Environmental Quality regulations ensure that no nerve agent accident ever be allowed to occur at the Umatilla Chemical Weapons Incinerator.

VI. Why Are No Umatilla Chemical Weapons Incinerator Documents Available in Washington State?

After I commented on the Umatilla Chemical Weapons Incinerator in 1991-2, program documents were made available at the Kennewick Public Library. These documents are no longer available there. This reduction in access to Washington State residents has occurred even while it was been admitted by the U.S. Army in 2002 that the toxicity of VX is actually ten times higher than was admitted when the program was first approved in the early 1990s.

Folks in Washington State do not really want to drive down to Hermiston to read program documents (e.g. past the plant), or all the way to Portland to read them.

It would be useful to gave a copy of program documents in the Tri-Cities area, perhaps at WSU-Tri-Cities or the Hanford Library in Richland, even if that opportunity is not often utilized.

VII. Conclusion:

Having been required to lie to the public, hiding secrets over the course of half a century, so long in fact that they are flying blind because no one remembers where the skeletons are buried, the Umatilla Chemical Weapons Incinerator is now trying to trim the design margins of safety in the face of unknown hazards.

This is misguided. All such requests should be denied. All agent contaminated materials should be processed on site, and all resulting products should be buried in a nuclear waste site.

Anything less is a potential threat to public health, and an unfair risk to sensitive human subpopulations.

Sincerely Yours,

Stephen A. McFadden, M.S.

VX agent's true toxicity revealed in study at depot
http://www.umatilladepotnews.com/2002/0321.html
This story was published Thu, Mar 21, 2002
By Karen Zacharias
Herald Oregon bureau

HERMISTON -- The thousands of containers of VX agent stored at Umatilla Chemical Depot are 10 times more deadly than regulators expected.

"It takes only one-tenth as much agent to do what we thought. It's a lot more bad than we thought," Thomas Johnson, administrator for Oregon's Office of Public Health, said Wednesday.

A new toxicity study of the chemical stockpile at the Umatilla Chemical Depot revealed the surprise. It wasn't immediately clear whether the federal study raises new health concerns or how it will affect emergency preparedness plans.

But Johnson didn't expect any delays in the schedule for incinerating the nerve agents. Trial burns are to begin in May and burns of the chemical agents in February 2003.

"It won't stop or delay the process. (Incineration) is not going to be held up in light of these new toxicity levels," Johnson said.

He was briefing members of the Governor's Board for the Chemical Stockpile Preparedness Program in Hermiston. Of 3,717 tons of agent at the depot, 11.6 percent is VX agent contained in 220,599 items, including rockets, bombs, projectiles, land mines and spray tanks.

"We have to change our (emergency) plans. There's no question about that," Johnson said.

And Benton County across the border in Washington probably will need to beef up its emergency plans as well. A report released Wednesday on a mock accident drill staged at the depot in January showed the plume drifted north and northeast, straight for the Tri-Cities. That test was the first to use real weather conditions.

"Benton County responders didn't participate in this exercise, but this plume was realistic. The wind just happened to be blowing their way. They may need to relook at their emergency response plan," said Chris Brown, manager of Oregon's Chemical Stockpile Emergency Preparedness Program.

A scenario in which Tri-City residents would be harmed is unlikely. It would take a huge explosion, with wind and fire, for the agent to travel very far from the depot, Johnson said.

The agent is heavy, like motor oil. A cup of it sitting on a table is unlikely to harm anyone unless it's spilled or sprayed like hairspray.

Then a small drop could kill. "Less than a drop from an eyedropper," Johnson said.

VX affects the central nervous system. Pupils dilate and eyes water. A cough follows, then dizziness and confusion. Soon, Johnson explained, a person slips into a coma.

If an explosion involving fire occurred, a plume of the agent could be devastating. Such a scenario means emergency planners have to redraw the zones of critical response, said Bob Flournoy, chairman of the Oregon Chemical Demilitarization Citizens Advisory Commission.

"The fact that this stuff is 10 times more toxic than we thought is extremely significant," he said.

It also means officials will have to rethink the tactic of sheltering in place, as envisioned in current plans, Johnson said.

"If you're sheltering in place and the agent is more toxic, how long can you stay in there before the room becomes more contaminated than the outside? Those are some of the questions we are going to have to look at," he said.

And it's even more reason why people sheltering in place need to take their tone alert radios with them, said Cheryl Humphrey, public information officer for Umatilla County Chemical Stockpile Emergency Preparedness Program.

"The tone alert radios will advise them of what they should do. That's a real critical piece of public safety," Humphrey said.

G.A.S.P.
P. O. Box 1693
Hermiston, OR 97838

August 14, 2007

Rich Duval, Chemical Demilitarization Program Administrator
Eastern Oregon Chemical Demilitarization Program
256 E. Hurlburt
Hermiston, OR 97838

RE: Secondary Waste Best Available Technology Determination

Dear Mr. Duval:

The following comments are being submitted on behalf of G.A.S.P. et al. Please enter them in the administrative record.

The Oregon Department of Environmental Quality (DEQ) and Department of Army propose to replace the dunnage incinerator (DUN) at the Umatilla Chemical Agent Disposal Facility by utilizing the Metal Parts Furnace (MPF) and Deactivation Furnace System (DFS). To achieve this goal, the Environmental Quality Commission (EQC) is asked to approve the DEQ recommendation as a determination of Best Available Technology (BAT). This effort has far-reaching implications that the Commission should consider before granting.

Prior to the 1997 EQC decision, the Army had requested the EQC to issue a hazardous waste permit for the Army's baseline hazardous waste incineration technology package which in 1997 included as primary components a metal parts furnace (MPF), a deactivation furnace (DFS), two liquid incinerators (LIC 1 & 2), the dunnage incinerator (DUN), a brine reduction area (BRA) and a pollution abatement filter system using carbon filter beds. (PFS). Transcript (TR.) Vol. 10A, 6/19/06, pp. 1564 – 1565 (Henry Lorenzen, former EQC Chairman); PX. 20, TR. Vol. 6A, 10/28/02, pp. 23 - 31 (Sue Oliver, DEQ) (describing the components approved by the EQC in 1997 and the waste streams each was supposed to handle). The EQC found both that this technology package was BAT for the chemical weapons and chemical agent hazardous wastes to be treated at TOCDF and that UMCDF would use this technology package. PX. 1 at 17 - 21. Please note that the technology package approved included a dunnage incinerator.

During construction of the incinerator facility at UMCDF a DEQ inspector discovered that the Army had built a concrete wall blocking installation of the DUN furnace. Rather than issuing citations and revoking the permit for this unlawful act, DEQ management took no action. The following statements are taken from GASP III certified transcripts.

• The State "kinda" got a hint the Army was not constructing and installing the DUN when the Army put up a wall in the plant that would prohibit getting the DUN incinerator through. The State thought at that point that something was going on. It was the State's first clue (and a rather large one), and then the first written correspondence was a letter in August 1998 when the ODEQ was formally told that the DUN was on hold. Tr. Vol. 6C, October 28, 2002, Wayne Thomas, DEQ P. 67-68.

• The Army didn't disclose in the permit application that they weren't going to use the DUN. Tr. Vol. 6C, October 28, 2002, Thomas P. 75.

• Mr. Thomas admits that it was his conclusion in his memo that the Army must have known as early as its processing of the 1994 report that the DUN wouldn't process carbon. Tr. Vol. 7B, October 29, 2002, Thomas P. 33.

• Mr. Thomas admits that burning the DPE suits in the MPF is the proposal, but he has not seen dioxin emission data for burning DPE suits in the MPF. Tr. Vol. 6C, October 28, 2002, Thomas P. 49.

• Mr. Thomas admits that the State has not conducted a risk assessment based on dioxin emissions from burning plastic DPE suits in the MPF. Tr. Vol. 6C, October 28, 2002, Thomas P. 40-50.

The Data Report does not mention that Drew Lyle was aware of the Army's plan to burn dunnage in the Metal Parts Furnace in 1996 or earlier. (Testimony of Drew Lyle, v18B at 113.) Mr. Lyle never told the state of Oregon, even though he was leader of the Army's permitting team dealing with Oregon during the relevant time period.

At the time of permitting the Army reported that the DUN was a proven technology. This is particularly interesting when considering the following. "Satisfactory operation of the dunnage furnace and its related pollution abatement system was not demonstrated during the JACADS OVT." (Review of Systemization of the Tooele Chemical Agent Disposal Facility (1996); Page 13. Commission on Engineering and Technical Systems (CETS)

At the same time the Army made claims to the EQC, DEQ and public that the DUN was a proven technology because it was part of the full scale JACADS prototype in 1995-96, was also tested at JACADS but only for wood, and a very different DUN was tested at CAMDS.

In the DEQ Data Package dated August 3, 2007, the Report failed to acknowledge the profound differences between the Pollution Abatement Systems (PAS) for the DUN and for the MPF or DFS. The MPF/DFS utilizes a basic PAS configuration of quench tower, venturi scrubber, scrubber tower, demister, fan, and exhaust stack. The DUN, on the other hand, was permitted to operate with a quench tower, bag house with drum receptacle, fan, and exhaust stack. Even to a layperson, it seems safe to conclude that the bag house cyclones out larger particles into a drum whereas the PAS for the MPF/DFS is designed to precipitate smaller particulates through a "misting" process to cool the

exhaust. The EQC should carefully exam the PAS of both MPF and DFS for problems created by DUN waste feed. The evaluation should include the carbon filters.

As Larry Edelman urged the EQC on March 15, 1996 the "Commission consider the full range of technologies suggested for the destruction" to meet BAT under ORS 466.055(3). To date this has not been done by the Commission or DEQ.

The Secondary Waste BAT Data Report dated August 3, 2007 briefly compares only three options for the treatment of secondary waste. Those options are using the dunnage incinerator, the metal parts furnace and the deactivation furnace system. The following information on other available technologies for the treatment of secondary waste was ignored.

The Army carefully evaluated alternatives to incineration during the Assembled Chemical Weapons Assessment Program (ACWA), which included an evaluation of DUN alternatives. Oregon representatives, including a DEQ staff member, participated throughout the ACWA process which took several years. Commenter's include the ACWA Report to Congress December 2001 as an attachment.

Let's compare the DUN to the alternatives. The alternative technologies underwent intense testing for years through the Assembled Chemical Weapons Assessment (ACWA), a study funded by Congress that was far more intense than any testing that any component of incineration was required to undergo. Neutralization has been successfully used full scale at ABCDF and destroyed many tons of agent. See, Ex. 220, offered as evidence in Petitioners' Post Trial Brief. Alternatives, especially neutralization, are now more proven than the DUN and other incineration components ever were. Consider how incineration began in the remote areas of Johnston Atoll and the Utah desert, while the alternatives began in a densely populated area right near the Pentagon and on the same grounds as the office where Army officials decided to neutralize the Maryland stockpile. This alone speaks volumes. That the alternatives may use warm water or caustic in a true batch process as opposed to incineration's high temperature continuous flow model peaks volumes. That incineration's smokestacks will spew nearly 36 tons of hazardous waste into the atmosphere while the alternatives will release far less hazardous gas and liquid speaks volumes.

Additionally, the Interim Design Assessment for the Blue Grass Chemical Agent Destruction Pilot Plant (2005) Board on Army Science and Technology (BAST) National Academies of Science made the following recommendation.

General Recommendation 5. Alternative approaches for treating contaminated dunnage and wastes should be considered by the Army, with involvement by the public. One alternative to SCWO for treatment of contaminated dunnage is to treat it in the MPT to levels suitable for release to appropriate waste disposal sites.

The two tables that follow give brief descriptions of the seven technology packages that passed the DoD's initial evaluation and an evaluation of the maturity of the demo II units operations and processes that included alternative treatments for dunnage. or secondary waste and were included in the BAST Assessment.

TABLE 1–1 Description of the Seven Technology Packages That Passed DoD's Initial Evaluation Page 7

Technology Provider[a]	Access to Munitions	Treatment of Agent	Treatment of Energetics	Treatment of Metal Parts	Treatment of Dunnage
AEA	Modified reverse assembly (high-pressure wash, new rocket shearing).	Electrochemical oxidation using silver ions in nitric acid (SILVER II™).	Treated with SILVER II™ process.	High-pressure acid wash; thermal treatment to 5X.[b]	Shredded and treated with SILVER II™ process.
ARCTECH	Modified reverse assembly.	Hydrolysis with a-HAX (humic acid and strong base, KOH).	Hydrolysis with a-HAX.	Hydrolysis with a-HAX; shipped to Rock Island Arsenal for 5X treatment.	Hydrolysis with dilute a-HAX; shipped to landfill.
Burns and Roe	Modified reverse assembly.	Plasma arc.	Plasma arc.	Melted in plasma arc.	Shredded; processed in plasma arc.
General Atomics	Modified reverse assembly; cryofracture for projectiles.	Hydrolysis; supercritical water oxidation (SCWO).	Hydrolysis, SCWO.	Hydrolysis; thermal treatment to 5X.	Shredded; destroyed in SCWO.
Lockheed Martin (Foster/Eco Logic/Kvaerner)	Modified reverse assembly (multiple lines, compact layout, new	Hydrolysis; SCWO; Eco Logic gas-phase chemical reduction (GPCR).	Hydrolysis, SCWO, GPCR.	Hydrolysis; GPCR to 5X.	Hydrolysis; GPCR to 5X.

	drain and wash).				
Parsons	Modified reverse assembly (fluid-jet cutting and energetic washout for rockets).	Hydrolysis; biotreatment.	Hydrolysis, biotreatment.	Thermal treatment to 5X.	Thermal treatment to 5X.
Teledyne-Commodore	Fluid-jet cutting; access and drain agent; wash out energetics with ammonia.	Solvated electron process in ammonia for reduction; chemical oxidation with sodium persulfate.	Solvated electron process in ammonia for reduction; chemical oxidation with sodium persulfate.	Wash in solvated electron solution; oxidation to 3X;[c] ship to Rock Island Arsenal for 5X treatment.	Crushed or shredded; treated in solvated electron solution; shipped to landfill.

Page 38 TABLE 5–1 Summary Evaluation of the Maturity of Demo II Unit Operations and Processes

Technology Provider/Unit	Hydrolysates VX/GB	Hydrolysates HD	Energetics	Agent Munitions VX/GB	Agent Munitions HD	Energetics	Other
Operation or Process							
AEA							
SILVER II™[a]				C	C	C	
Solid/liquid waste treatment				C	C	C	
Gaseous waste treatment				D	D	D	
Foster Wheeler/Eco Logic/Kvaerner							
TW-SCWO	B	B	C				
GPCR™				B	B	B	B[b,c]
Teledyne-Commodore							
Ammonia fluid jet cutting and washout system				D	D	E	
SET™				D	D	D	C[b]
Persulfate oxidation (agent)				D	D	D	
Peroxide oxidation				D	D	D	

(energetics)	
Metals parts and	**A[b,c]**
dunnage shredding	

NOTE: Environmental and safety issues were considered in assigning maturity categorizations. Schedule and cost issues were not considered. The letter designations are defined as follows (a blank space indicates that categorization was not applicable for that material): A, demonstration provides sufficient information to justify moving forward to full-scale design with reasonable probability of success; B, demonstration provides sufficient information to justify moving forward to the pilot stage with reasonable probability of success; C, demonstration indicates that unit operation or process requires additional refinement and additional demonstration before moving forward to pilot stage; D, not demonstrated, and more R&D is required; and E, demonstrated unit operation or process is inappropriate for treatment.

Another analysis missing from the report are impacts to worker health and safety from low-level chronic exposure. The reports for public review only included episodic events with observed effects. Staff did not consider worker chronic exposure. Also, dioxin contamination led to the shut down of the dunnage incinerator in UT. Has DEQ reviewed this information? Without a broader scope to BAT that includes low level of worker exposures, the resulting decision is baseless.

The Data Report fails to consider the emissions from using the MPF and DFS for dunnage as a single source of or in combination with like emissions from other sources that pose a danger of non-cancer adverse health effects to infants. The average infant dioxin-like compound exposure from existing sources is already 50 times greater than the exposure standard set by two federal agencies, and high end infants have a dioxin-like exposure hundreds of times greater than the federal standard, particularly in light of new studies indicating adverse health effects even in adults and older children at existing exposure levels. The Report also fails to address impacts to subsensitive populations in the area or potential harm to the environment.

The comment package provided no data on the volume of waste currently stored or the expected volume of wastes. In response to our inquiry, DEQ staff offered the following that could not be found in the public review documents: There is currently approximately 180,000 pounds of secondary waste stored in J-block. About 100,000 pounds is spent carbon. The permit includes 58 J-block igloos for storage of secondary waste. How much each can hold will be variable depending on the type of waste, but a good average is 50,000 pounds per igloo (about 3,000,000 pounds total). Also, there is nothing to prevent the inclusion of additional igloos into the Permit should capacity become an issue. So theoretically, with over 900 igloos available, there is no practical limit on storage capacity

The Resource Conservation and Recovery Act (RCRA) regulations on public participation appear to have been ignored. RCRA requires notice of any proposed permit be published in a local newspaper and that the public be allowed to comment and attend a

public hearing [42 U.S.C. sec. 6974(b)]. The public notice is dated August 7, 2007, the comment period ends on August 14, 2007, and a decision by the EQC is expected on August 16, 2007.

If one believes that public participation is a cornerstone of this program, as alleged by the department and the army, then the seven day comment period is grossly inadequate and severely limits the public's ability to participate in the process. Given the magnitude of the proposal and the Judge's ruling in GASP v. EQC, we ask for a minimum thirty day public review and comment period. Supporting documents used by staff must also be made easily accessible.

In conclusion, commenter's request that the BAT determination by the EQC be denied at this time and revisited at the October 18-19 2007, meeting. This will provide staff with time needed to begin addressing issues that we have brought to their attention and others that they may become aware of or that the EQC specifically requests information on. Commenter's also request that they be allocated time to present information to the EQC on this issue during the October meeting and that their presentation be listed as an agenda item not limited to five minute or less.

Sincerely,

Karyn J Jones
On behalf of G.A.S.P. et al

State of Oregon
Department of Enviro

Confidential

DATE: January 24, 2000

TO: Langdon Marsh
Director

FROM: Wayne C. Thomas 1/24/2000
Manager, Chemical Demilitarization Program

SUBJECT: Secondary Waste and Dunnage Incinerator Issues
DEQ Item No. 00-0111 (27.01)

We have prepared the following list of issues for discussion in preparation for the meeting on January 26, 2000 with the Army on the secondary waste issues:

1. The Army wants to convince the EQC and the Department to allow operational start-up by approving a Compliance Schedule for the development, testing, and selection of secondary waste treatment technologies. The Army's number one priority is clearly the processing of chemical agent and chemical agent munitions only, and they consistently fail to understand why the regulatory community and the public are so adamant about ensuring that treatment technologies for secondary waste are in place before any more is generated through operations.

   Given their track record, we have absolutely no reason to believe that the Army would be able to meet a Compliance Schedule. The Compliance Schedule that was proposed last August includes some ambitious schedules for the development of various treatment technologies, and yet the Army has not included DEQ in the discussion of the concept they are developing. The Army continually shows a reluctance to include DEQ in the discussion of issues that are of mutual concern and need resolution. At this time we do not have any confidence in the compliance schedule approach. Even if we can establish a level of confidence we would need to include severe penalty clauses in the compliance schedule in the event the Army fails to meet the requirements.

2. Although the Hazardous Waste Permit clearly states that all wastes currently stored at the Depot will be treated at UMCDF the Army is focusing solely on demilitarization wastes. The legislative barrier to processing the Depot storage wastes was removed last fall, but the Army's chemical demilitarization group and the Army's storage group seem unwilling and/or unable to resolve how and when the storage wastes will be treated at UMCDF.

   The chemical agent-related wastes stored in J-Block at the Umatilla Chemical Depot are going to be a processing challenge for both the Army and the Department. Only recently has the Depot started to segregate the wastes they are putting in drums. There are hundreds, if not thousands, of drums in J-Block and there are only very sketchy descriptions of what is in each drum. Past practice was just to put all the agent-related

waste from a given activity into a drum (which could include paper, cloth rags, butyl rubber gloves and boots, metal parts, carbon canisters, etc.) and then fill the drum with decontamination solution and store it. Each of these drums will have to be opened in an engineering controlled environment, and the various wastes fished out of the drums and re-packed into segregated containers for processing. We also have an issue with multi-agent contaminated wastes, since the current Hazardous Waste Permit forbids the processing of wastes that have been contaminated with more than one agent.

The Army does not want to acknowledge what it's going to take to process the J-Block waste. The waste preparation time will be significant, and the different branches of the Army are apparently struggling to come to an agreement over how the processing will be done, and of course, who is going to pay for it. The Program Manager for Chemical Demilitarization and the Soldiers Biological and Chemical Command (the storage Depot side of the Army) must come to an agreement not only on the processing issues, but they also must insure consistency in waste management and analytical procedures (they think we are being unreasonable when we expect the two different organizations to manage identical wastes in the same way).

3. **Treatment technologies for numerous and inherently problematic secondary wastes (such as carbon and protective suits) are in the early to middle stages of development. The Army does not work with the regulatory agencies (such as the National Chemical Demilitarization Workgroup) prior to developing test plans. The consequence is that sometimes they do a lot of work that doesn't result in answers that address the concerns of the regulatory communities.**

The Army is apparently well into the development of a Carbon Micronization System to pulverize waste carbon so that it can be fed into the Deactivation Furnace. The Army has also conducted numerous tests of the "Thermal Decontamination System" for the protective suits (although some of the tests are of dubious value due to poor test plans and/or failure to execute the test as planned). The reality: the Army's preferred solution to the treatment of secondary waste is off-site shipment to another facility. Off-site shipment of liquid wastes such as brine (to commercial treatment facilities) has been approved by both the Utah and Alabama environmental agencies. The Army expects Oregon to do the same—eventually.

4. **The Army cannot understand, let alone accept, the state's prohibition on off-site shipment of liquid wastes, and the requirement for certifying that any wastes going off-site must be agent-free. I believe that their failure to put resources into development of better sampling protocols and analytical methods for liquid and solid waste matrixes is a direct consequence of their firm belief that we will change our position on off-site shipments.**

The development and issuance of the permit during 1996 and 1997 was based on the Army's application and commitment to the EQC that all agent contaminated secondary wastes and liquid wastes would be treated on-site. The Army made these commitments to secure issuance of the permit and they are now trying to back away from the commitments.

5. The Army has apparently made virtually no progress on the Dunnage furnace (DUN) in the last two years. They have not put in the work needed to modify the design to make it perform.

The Army's original plan for treatment of secondary wastes was simple: Carbon and virtually everything else was to be treated in the Dunnage Furnace, with the exception of Demilitarization Protective Ensembles (the worker's protective suits), which were never included in the original Waste Analysis Plan (an omission we should have caught, but didn't). We now know that the Army knew as early as the late 1980's that the Dunnage Furnace would definitely not be able to process carbon, and would only be able to process other wastes (primarily wood) with major design modifications to the DUN furnace and its pollution abatement system. The Application we received in 1995 includes the following statement (Volume II, Section D-8b(2)(e)):

> "The goal of the trial burn will be to demonstrate that the Dunnage Incinerator meets the performance standards presented in Section D-8b. The Dunnage Incinerator is designed to meet these standards. additionally, a Dunnage Incinerator of similar design will be tested at the Johnston Atoll Chemical Agent Disposal System (JACADS) to demonstrate successful performance. *On the basis of the incinerator design and the JACADS data, it is anticipated that the Dunnage Incinerator will meet the applicable incinerator performance standards.*" *(emphasis added)*

Our recent review of the Dunnage Incinerator history has seriously jeopardized and undermined our confidence in the information being provided to us by the Army. The Army has presented information to DEQ that clearly shows they knew in 1994 that the DUN would not meet the required performance standards. We have tasked our contractor (Ecology & Environment) to review the 1994 and 1999 Dunnage Incinerator reports to determine if the permitted design is capable of treating secondary wastes. This issue is so significant that the very question of whether the DUN should have been permitted is now something that we need to consider.

Proposed Outcome of Meeting

We believe that the outcome of the meeting must be that the Army has a *full understanding* of the state's position on the management and treatment of all secondary wastes stored at the UMCD. We should make a commitment to work proactively with the Army and Raytheon on the critical issues related to secondary wastes. A senior management monthly meeting to update the secondary waste issues should be proposed. This will keep the Army moving forward on these issues; however, we must not prematurely approve a technology or approach without following the required public process. The following issues are critical to the successful outcome of the entire project and are considered non-negotiable.

Start of Hazardous Waste Operations (Surrogate Agent Trial Burns) – HW operations cannot occur until a viable option for the treatment of all secondary wastes is approved. We have always operated under the assumption and permit requirement that agent contaminated

wastes and liquid wastes must be treated on-site. The status of the DUN is questionable and alternative technologies are untested.

Off-site Shipment of Agent-Contaminated Wastes and Liquid Wastes - This is one of our basic principles and cannot be compromised. If we allow the Army to send agent-contaminated wastes and liquid wastes offsite which can be treated at Umatilla it would be transferring our problems to another location, likely another state, for future cleanup.

The receiving state may not have the same regulatory standards as Oregon and the wastes would not be managed appropriately. The treatment technology exists at Umatilla to effectively treat agent-contaminated and liquid wastes. Chemical agents are not listed hazardous wastes in many states and not even by the USEPA. The EQC and Department have maintained and have repeatedly informed the Army that all secondary wastes which contain chemical agent must be treated on site. We believe our stance on this fundamental issue is consistent with Oregon's environmental ethic and the original permit decision issued by the EQC and the Department for the UMCDF.

ASSEMBLED CHEMICAL WEAPONS ASSESSMENT

Assembled Chemical Weapons Assessment Program

Report to Congress

December 2001

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Message from Mr. Michael A. Parker, Program Manager

During the past year's activities within the Assembled Chemical Weapons Assessment (ACWA) Program, tremendous progress has been made regarding possible alternative technology pilot facility implementation. Engineering Design Studies are ongoing and Engineering Design Packages are being developed. The information gathered from all the studies and packages is being used to determine if an alternative technology can be implemented as stipulated in Section 142 of Public Law 105-261. Based on all information produced to date, meeting the requirements of safety, cost, and schedule criteria required by Public Law 105-261 looks to be possible.

Soon the Under Secretary of Defense (Acquisition, Technology & Logistics) as Defense Acquisition Executive (DAE) will determine what technologies will be implemented in Colorado and Kentucky, respectively. As previously stated, information to help the DAE make this determination has and will continue to be submitted for consideration. The DAE will determine if an alternative technology facility can be measured equally with an incineration facility, with regard to safety, cost, and schedule. Additionally, the DAE will determine what management structure will oversee the future facilities to be constructed in both Colorado and Kentucky.

Maintaining public trust is always a high priority for the ACWA program. Stakeholder endorsement of program efforts continues, due to the transparent nature of day-to-day operations. The work effort put forth by all involved – affected stockpile community members, government personnel, and private industry representatives – has been outstanding. It is my commitment to maintain public involvement measures through pilot activities if an alternative technology decision is forthcoming.

Given the tragic events of September 11, 2001, all involved must continue to work diligently toward the swift yet safe destruction of our nation's chemical weapons stockpile. To help expedite this mission, the ACWA program will continue to work cooperatively with the Program Manager for Chemical Demilitarization, Department of the Army, and the Office of the Secretary of Defense to ensure the best information is presented in making future decisions for our country.

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The views, opinions, and recommendations expressed in this message from the Dialogue on Assembled Chemical Weapons Assessment do not represent official government positions.

Message from the Dialogue on Assembled Chemical Weapons Assessment

The Assembled Chemical Weapons Assessment (ACWA) Dialogue was established in May 1997 to ensure the upfront integration of concerns and ideas of the diversity of individuals likely to be impacted by or having an impact on chemical weapons demilitarization. The Dialogue, as noted by the signatories of this Message, includes individuals supporting and opposing incineration from the eight states with stockpiles of chemical weapons; federal, state, and tribal regulators and representatives; Department of Defense (DOD) staff from affected sites and headquarters; and representatives from national citizen groups such as the Chemical Weapons Working Group (CWWG), Global Green USA, and the Sierra Club, who regularly work on chemical weapons demilitarization issues.

The ACWA Program was established in 1996 under Public Law 104-208 to facilitate and accelerate the ongoing destruction of chemical weapons stockpiles in the United States by demonstrating non-incineration, alternative technologies. The Dialogue has met twelve times since its inception and once during calendar year 2001 to review and discuss criteria for evaluating these technologies and provide overall advice to the ACWA Program Manager. In addition, a four-person subgroup, the Citizens Advisory Technical Team (CATT), and an independent technical advisor have been actively involved in week-to-week activities. Through the Dialogue, members have developed a greater appreciation for the complex challenges inherent to the chemical weapons demilitarization program and have focused on shared problem solving. With the military, regulators, and community members all pulling in a common direction, Dialogue members truly believe that this will help ensure a more effective and successful demilitarization effort.

The tragic deaths of our fellow citizens in September brings home to all of us how unimportant our many policy differences really are, but they also emphasize to us that we must finish our task—safely and soundly abolishing all of the U.S. chemical weapons stockpile so that these deadly agents never again endanger, either through accidental release or terrorist attack, our local communities and innocent civilians.

Based on our in-depth monitoring of the ACWA Program over the past four and a half years, the Dialogue puts forth the following consensus recommendations and summary opinions.[1]

Dialogue Views and Recommendations

The ACWA program has met the mandate of the law to demonstrate not less than two alternatives to baseline incineration for the destruction of assembled chemical weapons. The ACWA program to date has identified six technologies, all of which have now been demonstrated, and four of which have passed on to engineering design studies this year. These four groups are: 1) neutralization and biotreatment; 2) neutralization and supercritical

[1]The reader may refer to past ACWA Reports to Congress for greater detail on the history of the ACWA Program and Dialogue or to review prior recommendations from the ACWA Dialogue. These documents may be obtained by calling the ACWA information line at (888) 482-4312, or logging onto the ACWA website at http://www.pmacwa.org.

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water oxidation (SCWO); 3) neutralization, SCWO, and gas phase chemical reduction; and 4) electrochemical oxidation. A full technical report on this year's engineering scale-ups will be forthcoming in early 2002. We believe that some, perhaps all, of these could be effectively utilized at several stockpile sites in coming years.

Public health and environmental protection must remain our top priorities, as mandated by the law for chemical weapons demilitarization. The stated mission of the Program Manager for Chemical Demilitarization (PMCD) is "to destroy the U.S. stockpile of unitary chemical weapons while ensuring maximum protection to the environment, general public, and personnel involved in the destruction effort." We fully support this. The September 11th attacks, and the perceived vulnerability of parts of the chemical weapons stockpiles, however, have led some observers to argue for expediting the destruction process. While we support any necessary security enhancements for the eight remaining U.S. stockpiles and agree that expeditious destruction is important, we do not support any "hurried" approach that could place local populations and the environment at greater risk. We are also concerned that moving to incentivized contracts for contractors, i.e. monetary incentives for speed, could encourage cutting corners at the expense of safety. Although many of these concerns may be manageable, DOD and others have noted that such incentives may raise public concerns that speed is valued over safety.

If the ACWA-demonstrated technologies are certified by the Defense Acquisition Executive (DAE) to be as safe, cost-effective, and timely as incineration, these technologies should be seriously considered for implementation at both Pueblo, Colorado and Blue Grass, Kentucky.[2] DOD is now evaluating both incineration and non-incineration technologies for these two remaining chemical weapons stockpile sites, the last of nine site-specific technology decisions. We believe that the four demonstrated ACWA technologies noted above are applicable to these two sites. Furthermore, there is evidence that these alternative technologies could be more acceptable to the public as evidenced by ongoing implementation activities of alternative technologies in Indiana and Maryland.

The ACWA-demonstrated technologies may have application at some or all of the other chemical weapons sites. Of the seven other sites, Johnston Atoll completed incinerator operations of live agent this past year. One other site—Tooele, Utah—has incinerated more than one-third of its original tonnage of agent during the past five years. Two other sites—Anniston, Alabama and Umatilla, Oregon—have just completed incinerator construction and are scheduled to begin operations in 2002 and 2003, respectively, based on PMCD's current projections. A fifth site—Pine Bluff, Arkansas—is currently scheduled to complete incinerator construction and testing in 2003. The two remaining sites—Aberdeen, Maryland and Newport, Indiana—are currently scheduled to begin pilot operations of non-incineration technologies in 2004 and 2005, respectively. The ACWA technologies may have application at all of these sites in the destruction of agent, energetics, and treatment of metal parts, wood,

[2]Wesley Stites and Suzanne Winters remain skeptical that the alternative technologies can be implemented as quickly as baseline incineration even if certified by the DAB. These two Dialogue members believe that the ACWA technologies are immature and thus face greater engineering uncertainties.

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plastic suits, and other contaminated materials. This application may be as a complement or alternative to the baseline incinerator technology, or in support of existing alternative technology development programs in Indiana and Maryland.

The ACWA-demonstrated technologies may have broader application in toxic waste management. While the ACWA program has been designed to apply to chemical weapons, the technologies demonstrated have been able to demilitarize all components of an assembled weapon, which can include agent, propellant, energetics, plastics, metal, fiberglass, polychlorinated biphenyls (PCBs), and other contaminants. We are optimistic that the potential spin-offs from this program into the fields of pollution cleanup and site remediation will be great.

The future management of the chemical weapons demilitarization program should be consolidated and made more rational. All Dialogue participants strongly agree on the need to restructure the management of the chemical weapons demilitarization program in order to reduce bureaucratic inefficiencies and unnecessary delays. The future program should adopt an open and transparent management style. All Dialogue members agree that Michael Parker, Program Manager for ACWA, Bill Pehlivanian, Deputy Program Manager, and the ACWA staff have demonstrated this forthrightness since the Program's inception.

The ACWA Dialogue is a successful model for consensus building in contentious public policymaking. The enormous chemical weapons demilitarization program, as well as the Cold War legacy of chemical weapons, has come under widespread scrutiny and policy debate at every site and community. The Dialogue provides a method for ensuring a marriage of the best science available while incorporating the concerns of the communities and the political realities of this hotly debated topic. The Dialogue process has helped to address a variety of issues in a cooperative and productive way. This process deserves to be emulated elsewhere.

Transparency and public involvement remains key to a successful chemical weapons demilitarization program. A National Dialogue on Chemical Weapons Demilitarization should be established. The ACWA Dialogue and other consensus-building processes have illustrated the importance of transparency in information and process, and of timely stakeholder involvement in decision-making. The national chemical weapons demilitarization program has not always been effective in either of these areas. Timely, accurate, and full responses to public inquiries and timely release of all key data are very important. The Dialogue strongly recommends that public involvement be emphasized in any future decision-making that involves the destruction of chemical weapons in our communities. We believe that the Program Manager of any organization charged with this responsibility would be well served by and should seriously consider the use of groups similar to the ACWA Dialogue as a method of ensuring adequate public involvement throughout the life of the program.

The views, opinions, and recommendations expressed in this message from the Dialogue on Assembled Chemical Weapons Assessment do not represent official government positions.

As noted in last year's Dialogue message, we continue to support the establishment of a formal mechanism for ensuring broad stakeholder involvement in decision-making for chemical weapons demilitarization. While some issues obviously must remain in the domain of local advisory committees and officials, a national Dialogue can serve to help resolve many regional and national issues, share lessons learned, and encourage joint problem solving. This new Dialogue should address all topics related to the destruction of chemical weapons and not just be limited to assembled chemical weapons. This new effort should have a clear mission and a method for closure once the goals have been met.

As long as the ACWA Program continues as a separate entity, we recommend that it continue to solicit public involvement through the ACWA Dialogue mechanism. We recognize and support that such a mechanism should be consistent with any new statutory goals for ACWA and thus, could require changes in the Dialogue mission and membership. Any new mission statement should also have clear goals for the group and a method for concluding the effort once the goals have been met.

In addition, the Dialogue recommends that the DOD make significant efforts in upcoming months to increase transparency and public involvement in its decision-making process. The public is much more likely to understand and support the difficult decisions that face the DAB over the next eight months, if they have access and are allowed input into the process in a meaningful way.

Conclusion. The Dialogue believes that the continued safe and environmentally sound destruction of all chemical weapons stockpiles—American, Russian, and others—is of utmost importance to both environmental and national security. The recent terrorist attacks in the U.S. and elsewhere have illustrated this point more clearly and we welcome more public and official attention to and support of this top national priority.

At the same time, we point out that ridding ourselves of dangerous arsenals of weapons of mass destruction is a very technically and politically challenging task, laden with high levels of emotion. It is important now, more than ever, that we dedicate ourselves to working cooperatively and effectively together as citizens, as a nation, and as an international community, in order to meet this challenge and abolish chemical weapons worldwide forever.

The views, opinions, and recommendations expressed in this message from the Dialogue on Assembled Chemical Weapons Assessment do not represent official government positions.

Dialogue on Assembled Chemical Weapons Assessment
List of Participants

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* Citizens' Advisory Technical Team Member

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Executive Summary

This report responds to the requirements contained in Title VIII, section 8065 of the Omnibus Consolidated Appropriations Act, 1997 (Public Law 104-208), and describes the activities accomplished for the Assembled Chemical Weapons Assessment (ACWA) Program during fiscal year 2001. Significant activities included:

- **Participation in Defense Acquisition Board (DAB) Review activities.**

  In July 2000, the Under Secretary of Defense for Acquisition, Technology and Logistics, in his role as the Department of Defense Acquisition Executive (DAE), requested a Defense Acquisition Board (DAB) review of all aspects of the Chemical Demilitarization Program including the ACWA program. During a DAB Review on September 6, 2001, Program Manager for ACWA (PMACWA) presented an update on the program and the status of the certification process. PMACWA will continue to participate in the DAB process to support the certification of ACWA technologies and the technology decisions for Pueblo and Blue Grass. The technology decision for Pueblo is tentatively scheduled for February 2002; the technology decision for Blue Grass is tentatively scheduled for June 2002.

- **Conducting Engineering Design Studies (EDS) for the four alternative technologies that were validated during demonstration testing to be effective in the destruction of chemical weapons.**

  The four technologies are: neutralization followed by biotreatment, which was validated for processing mustard-containing munitions only; neutralization followed by supercritical water oxidation, which was validated for processing all chemical weapons; electrochemical oxidation, which was validated for processing all chemical weapons; and neutralization followed by transpiring wall supercritical water oxidation and gas phase chemical reduction, which was validated for processing all chemical weapons. EDS will result in a preliminary full-scale design for the construction of a demilitarization facility with the associated cost, schedule, and preliminary hazard analysis. This information will be the basis for certification under the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (Public Law 105-261).

- **Participation in acquisition activities regarding construction of chemical demilitarization facilities at Pueblo Chemical Depot, Colorado and Blue Grass Army Depot, Kentucky.**

  ACWA is participating in ongoing acquisition activities in Colorado and Kentucky. These activities include: developing a life cycle cost and schedule to support the technology decisions at both locations, participating in Environmental Working Integrated Product Teams in Colorado and Kentucky to address issues related to environmental permits, and preparing a request for proposal for a pilot plant in Colorado.

- **Conducting National Environmental Policy Act (NEPA) and Resource Conservation and Recovery Act (RCRA) activities.**

  PMACWA published the Draft Program Environmental Impact Statement (EIS) on May 11, 2001. The Draft EIS examines the potential impacts of the design, construction, and operation of one or more pilot test facilities for assembled chemical weapons destruction technologies at one or more chemical weapons stockpile sites. Public meetings were held in Pueblo, Colorado; Pine Bluff, Arkansas; Anniston, Alabama; and Blue Grass, Kentucky to receive comments on the Draft EIS. Comments are now being reviewed and will be addressed in the Final EIS, which ACWA expects to complete in early 2002. A Record of Decision (ROD) will follow shortly thereafter.

  The PMACWA will be required to obtain Resource Conservation and Recovery Act (RCRA) permits for technologies proposed for the destruction of the chemical weapons stockpiles at Pueblo Chemical Depot in Colorado and Blue Grass Army Depot in Kentucky. PMACWA has prepared draft RCRA permit applications for the two ACWA technologies being considered for the Pueblo Chemical Depot. Development of the Blue Grass Army Depot draft RCRA permit application will not begin until after a technology decision has been made for that location.

I. INTRODUCTION/BACKGROUND

This annual report is submitted to the United States (U.S.) Congress in compliance with the requirements contained in Title VIII, section 8065 of the Omnibus Consolidated Appropriations Act, 1997 (Public Law 104-208). This report presents the activities associated with the Department of Defense (DOD) Assembled Chemical Weapons Assessment (ACWA) Program accomplished during Fiscal Year (FY) 2001.

In accordance with Public Law 104-208, the Under Secretary of Defense for Acquisition, Technology and Logistics selected Mr. Michael A. Parker as the Program Manager for ACWA with the mission to "demonstrate not less than two alternatives to the baseline incineration process for the demilitarization of assembled chemical munitions." Assembled chemical munitions for this purpose represent the chemical weapons stockpile configured with fuzes, explosives, propellant, chemical agents, shipping and firing tubes, and packaging materials. The submission of the June 2001 Supplemental Report to Congress satisfied the requirements of Public Law 104-208.

The Program Manager for Assembled Chemical Weapons Assessment (PMACWA) is currently conducting Engineering Design Studies (EDS) of four successfully demonstrated technologies to develop the information necessary to satisfy the requirements in the Strom Thurmond National Defense Authorization Act for FY 1999 (Public Law 105-261). The four technologies include: neutralization followed by biotreatment; neutralization followed by supercritical water oxidation; electrochemical oxidation; and neutralization followed by transpiring wall supercritical water oxidation and gas phase chemical reduction.

II. DEFENSE ACQUISITION BOARD (DAB)

In July 2000, the Under Secretary of Defense for Acquisition, Technology and Logistics, in his role as the Department of Defense Acquisition Executive (DAE), requested a review of all aspects of the Chemical Demilitarization Program including the ACWA program. Issues to be covered by this Defense Acquisition Board (DAB) review include: compliance with the Chemical Weapons Convention Treaty, update of the life cycle cost estimate, update of program plans for closure of Chemical Stockpile Disposal facilities, and the path forward to implement a destruction method for the chemical stockpile sites at Pueblo and Blue Grass. The DAB review will also include the certification process for the ACWA technologies as required by Public Law 105-261.

To address the review topics included above, three Working Integrated Product Teams (WIPTs) were formed – Cost/Schedule, Programmatic/Acquisition, and Safety/Environment. Output from these WIPTs will be provided to an Integrating Integrated Product Team (IIPT). The IIPT will provide a report and certification recommendation to an Overarching Integrated Product Team (OIPT). The OIPT will report to the DAE the status of the Chemical Demilitarization Program and whether or not the ACWA technologies can meet the certification requirements. The DAE will consider all the information presented and document the results of the DAB Review in an Acquisition Decision Memorandum.

In May 2001, the DAB Review was split into three phases due to the extended public comment period for the Environmental Impact Statements. The first phase of the review

addresses the cost, schedule, and Chemical Weapons Convention (CWC) compliance status of each Chemical Demilitarization program element. The second and third phases address the technology selections for Pueblo and Blue Grass, respectively.

The first phase of the DAB Review was held on September 6, 2001. The cost, schedule, and CWC compliance status of each Chemical Demilitarization program element, excluding Pueblo and Blue Grass, was presented by the Army to the Defense Acquisition Executive. At this DAB, PMACWA presented only an update on the program and the status of the certification process.

The second and third phases of the DAB Review will occur in 2002. PMACWA will participate in the integrated product team structure to support the certification process for ACWA technologies and the technology decisions for Pueblo and Blue Grass. The second phase of the DAB review, providing the technology decision for Pueblo, is tentatively scheduled for February 2002. The third phase of the DAB review, providing the technology decision for Blue Grass, is tentatively scheduled for June 2002.

III. ENGINEERING DESIGN STUDIES (EDS)

Public Law 105-261 directed the continuation of the ACWA Program and stated that if an alternative technology is chosen to be piloted, the Under Secretary of Defense for Acquisition, Technology and Logistics must certify in writing to Congress that any ACWA technology to be implemented is successful and as safe and cost effective for disposing of assembled chemical munitions as incineration; and, is capable of completing the destruction on or before the date by which the destruction of the munitions would be completed if incineration were used.

A. Engineering Design Studies I (EDS I)

The EDS I continued for the two alternative technologies that were validated during the Demonstration I program as having the potential to be effective in the destruction of chemical weapons. These two technologies use neutralization as the main destruction mechanism for the agent and energetics contained in the chemical weapons. The technology proposed by Parsons/Honeywell is neutralization followed by biotreatment, which was validated for processing of mustard-containing munitions only. The technology proposed by General Atomics is neutralization followed by supercritical water oxidation and was validated for processing of all chemical weapons.

The EDS I has resulted in a preliminary full-scale design for the construction of a Pueblo Chemical Depot demilitarization facility with the associated cost, schedule, and preliminary hazards analysis (PHA) for each of the two technologies validated during Demonstration I. This information is the basis for certification under Public Law 105-261. The design package will be made available as part of the request for proposals that will be developed for implementation of a technology.

1. Neutralization Followed by Supercritical Water Oxidation

The approach proposed by General Atomics for a total solution for the destruction of all assembled chemical weapons and associated propellant and packaging materials uses baseline shearing for rockets and modified reverse assembly plus cryofracture for projectiles. Cryofracture is a process developed by General Atomics for the U.S. Army in which munitions are embrittled by cooling in liquid nitrogen and then fractured to access the agent after the energetics have been removed. General Atomics proposes to neutralize (hydrolyze with water and caustic) the agents and energetics separately. Agent hydrolysate and energetics hydrolysate combined with shredded dunnage will be destroyed using separate supercritical water oxidation (SCWO) units. SCWO mineralizes the hydrolysates at temperatures and pressures above the critical point of water, and produces solid and liquid effluents that can be held and tested before release. General Atomics proposes to recover process water for reuse and to dispose of dry salts and solid residues in a permitted waste landfill. Recovered metal parts will be thermally treated using resistance heating and released as scrap.

As stated in the December 2000 report, the following General Atomics unit operations have been tested as part of the EDS I program in order to provide the engineering basis for the designs being developed for the General Atomics Total Solution at Pueblo Chemical Depot: an Energetics Rotary Hydrolyzer (ERH) to neutralize the weapons energetics, a SCWO unit to separately treat the neutralized agent and energetics, and a Dunnage Shredding and Hydrolysis System (DSHS) to size reduce and pretreat miscellaneous dunnage for subsequent treatment in SCWO. Additionally, General Atomics is participating in EDS II studies for the engineering design basis for the Blue Grass Army Depot.

a. Energetics Rotary Hydrolyzer (ERH)

The ERH testing conducted as part of EDS I has been completed with all of the objectives met. The ERH testing was conducted with sections of rocket motors representing pieces that would result from the current rocket segmenting process.

b. Dunnage Shredding/Hydrolysis System (DSHS)

The DSHS testing conducted as part of EDS I has been completed with all of the objectives met. The DSHS testing was conducted with demilitarization protective ensemble (DPE) material, wood, and carbon to address size reduction and material transport issues resulting from testing conducted during Demonstration I.

c. Supercritical Water Oxidation System (SCWO)

The originally scheduled testing conducted as part of EDS I has been completed with all of the objectives met. The SCWO testing was conducted with: 1) HD hydrolysate and simulant; 2) tetrytol energetics hydrolysate and dunnage; and 3) GB hydrolysate and GB hydrolysate simulant; and 4) Composition B energetics hydrolysate, M28 propellant hydrolysate, and dunnage. Testing was expanded to include VX hydrolysate simulant in

order to gain additional knowledge not available through the Engineering Scale Test that was conducted in support of the Newport Chemical Demilitarization Facility. The testing being conducted during EDS II on this feed will support both the PMACWA and Program Manager Alternative Technologies and Approaches (PMATA) programs.

d. Schedule

All testing has been completed including the EDS II VX hydrolysate simulant portion of the SCWO. This was an addition to the original test plan because sufficient information was not available from the Engineering Scale Testing of the SCWO unit that was tested by PMATA as part of the Newport demilitarization effort. This testing was completed in November 2001.

2. Neutralization Followed by Biotreatment

The approach proposed by Parsons/Honeywell for a total solution for the destruction of mustard chemical weapons uses modified reverse assembly for chemical agent access. Modifications to reverse assembly include a gravity drain with water bath and rinse for agent removal and high-pressure wash to remove the energetics. Parsons/Honeywell proposes to neutralize (hydrolyze with water and caustic) the agent and energetics and then destroy the hydrolysates using a biological treatment process operated at ambient temperature and pressure. Organic vapors and odors will be passed through a catalytic purifier (similar to an automotive catalytic converter) developed by Honeywell. Parsons/Honeywell proposes to recover process water for reuse and to dispose of dry salts and solid residues in a permitted waste landfill. Recovered metal parts will be thermally treated, in the presence of steam, and released as scrap.

The following Parsons/Honeywell unit operations were tested as part of the EDS I program in order to provide the engineering basis for the designs being developed for the Water Hydrolysis of Explosives and Agent Technology. Four primary process systems were tested separately and concurrently by the Parsons/Honeywell team at locations including: Edgewood Chemical and Biological Center (ECBC) at Aberdeen Proving Ground (APG), Maryland; Illinois Institute of Technology Research Institute (IITRI) in Chicago; and Chemical Agent Munitions Disposal System (CAMDS) in Tooele, Utah. These systems included: an Immobilized Cell Bioreactor (ICB^{TM}) to treat neutralized mustard and energetics, Continuous Steam Treater (CST) to treat metal parts and miscellaneous dunnage, a Catalytic Oxidation Unit (CatOx) to treat organics in the gaseous phase prior to carbon filtration, and a water washout system to treat mustard munitions that may contain heels.

a. Immobilized Cell Bioreactor^{TM} (ICB^{TM})

The ICB^{TM} testing conducted as part of EDS I has been completed with all the objectives met. The ICB^{TM} testing was conducted with feeds consisting of combined process liquids of agent hydrolysate, energetic hydrolysate and condensate from the CST.

b. Continuous Steam Treater (CST)

The CST testing conducted as part of EDS I has been completed with all the objectives met. The CST testing was conducted with feeds consisting of process wastes to include carbon, wood pallets, and DPE.

c. Catalytic Oxidation (CatOx)

The CatOx testing conducted as part of EDS I has been completed with all the objectives met. The CatOx testing was conducted using HD agent as a straight challenge to the system as a worst case scenario to determine catalyst effectiveness and duration.

d. Projectile Washout System

The Projectile Washout System has been successfully tested using actual HD-filled 4.2-inch mortars. The testing will continue with HT-filled 4.2-inch mortars. In addition, 155mm H-filled projectiles are being considered for testing.

e. Schedule

All testing has been completed except for the Projectile Washout System test using HT-filled 4.2-inch mortars, which is scheduled for early 2002.

3. Engineering Design Package

The testing outlined above supported the preparation of an Engineering Design Package that is the basis for the cost, schedule, and safety criteria development. The Engineering Design Package includes drawings and documentation sufficient to generate capital and operational and maintenance costs to within +/– 20 percent. The design package also includes a cost estimate that was evaluated and used to develop a program life cycle cost estimate. A program schedule was included in the package along with a Preliminary Hazards Analysis that was used as a tool in the safety certification process. Since Pueblo Chemical Demilitarization Facility (PUCDF) will have a stockpile of mustard-only weapons and Blue Grass Chemical Demilitarization Facility (BGCDF) will have both mustard and nerve agent weapons, Parsons/Honeywell has generated an Engineering Design Package for the PUCDF only, while General Atomics has developed a package for PUCDF and BGCDF. These packages will be used for the certification process, the request for proposals for the two demilitarization sites, and for the Environmental Impact Statement (EIS) process and Resource Conservation and Recovery Act (RCRA) permit applications.

Draft Engineering Design Packages for Pueblo were submitted to the Government on October 27, 2000. Design reviews were conducted at the end of November 2000 and changes were made to these packages as a result. The final Engineering Design Packages were submitted to the Government on January 5, 2001. A review of these packages took place to include a technical assessment and a life cycle cost and schedule were developed based on this evaluation.

B. Engineering Design Studies II (EDS II)

The EDS II were initiated for the two alternative technologies that were validated during the Demonstration II program as having the potential to be effective in the destruction of chemical weapons. One technology, proposed by AEA Technology/CH2MHill, uses electrochemical oxidation as the main destruction mechanism for the agent and energetics contained in the chemical weapons. The other technology, proposed by EcoLogic/Foster Wheeler/Kvaerner, uses neutralization as the main destruction mechanism for the agent and energetics contained in the chemical weapons. Neutralization is then followed by transpiring wall supercritical water oxidation and gas phase chemical reduction.

EDS II will result in a preliminary full-scale design for the construction of a Blue Grass Army Depot demilitarization facility with the associated cost, schedule, and preliminary hazards analysis for the AEA Technology/CH2MHill and EcoLogic/Foster Wheeler/Kvaerner technologies. This information will be the basis for certification under Public Law 105-261. The design package will be made available as part of the request for proposals that will be developed for implementation of a technology at Blue Grass Army Depot.

1. Electrochemical Oxidation

The approach proposed by AEA Technology and CH2MHill for a total solution for the destruction of all assembled chemical weapons uses modified baseline reverse assembly for chemical access, AEA Technology's patented SILVER II™ process for destroying chemical agent and energetics, a Metal Parts Treater for the treatment of metal parts, and a Dunnage Treater for the treatment of dunnage.

Modifications to reverse assembly for accessing rockets include tube cutting, burster washout, propellant push-out and milling. Rockets are punched and drained to remove the chemical agent. The agent is treated in the SILVER II™ process. Rockets are cut in a Rocket Disassembly Machine. The first cut removes the fuzes, which are then deactivated in the Metal Parts Treater. The burster is then washed out and the second cut removes the warhead section and exposes the motor. Once the propellant is exposed, it is pushed out and milled. The washed out burster energetics and milled propellant are treated in a separate SILVER II™ process. Any metal fragments are processed in the Metal Parts Treater. Shredded dunnage is treated in a Dunnage Treater.

The SILVER II™ process uses an electrochemical cell containing nitric acid and silver nitrate to generate silver (II) ions. Energetics and agents are oxidized either directly by the silver (II) ions or by other oxidizing compounds produced from reactions involving silver (II) ions. The process operates at 190°F and near atmospheric pressure (14.7 psia). All effluents from the SILVER II™ process will be contained and tested to be agent-free before release, recycling or disposal.

The following unit operations are being tested as part of the EDS program in order to provide the engineering basis for the preliminary designs being developed for the AEA Technology/CH2M Hill total solution: energetics feed system, 12-kW SILVER II™, cell

membrane life, fluoride removal system, hydrocyclone, high shear mixer, organic transfer, silver recovery, and evaporator.

a. Energetics Feed System

The purpose of this test is to demonstrate a continuous, safe system in which to control and release measured quantities of a water-based energetic slurry to the anolyte vessel in the SILVER II™ process. This testing was conducted at APG, Maryland. The specific objectives of this testing include the following:

- Design, build, and test an energetics feed system that allows consistent operation of the SILVER II™ plant. For example:
  - Dispensing known volumes of energetics slurry with up to 20 percent (by weight) solids to the SILVER II™ anolyte vessel.
  - Effectively monitoring the level of the energetics slurry within the feed vessel.
  - Operating the energetics feed system for long periods with limited maintenance.
  - Verifying that the slurry is homogeneous and that stratification does not occur.

The energetic feed system performed as it was intended.

b. 12-kW SILVER II™ Plant

(1) Energetics/Propellant

The purpose of this test is to validate the ability of the SILVER II™ process to achieve and maintain a steady-state electrochemical efficiency and achieve destruction and removal efficiency (DRE) of 99.999% for Composition B and M28 propellant. This testing was conducted at APG, Maryland. The specific objectives of this testing include the following:

- Verify long-term, continuous operability, reliability, and maintainability (i.e., operation of the full length of the test without unintended shutdown) of the SILVER II™ system as proposed for full-scale. For example:
  - Demonstrate that organic, silver, acid, and water in the catholyte circuit can be effectively managed over prolonged operational periods.
  - Demonstrate that process impurities that build-up in the anolyte circuit can be effectively managed over prolonged operational periods.
  - Determine the cell current efficiency to be used in the full-scale design.
- Verify that system modifications (i.e., high shear mixers and hydrocyclones) allow for effective treatment of organic material.
- Demonstrate the applicability of the 12-kW impurities removal system (IRS) design to the full-scale design, and develop data necessary for the design of the full-scale IRS.
- Confirm and supplement Demonstration II process effluent characterization.
- Determine impact of operations on materials of construction to be used in a full-scale system such as polymer-lined pipework.
- Validate the ability of the SILVER II™ unit operation to achieve a DRE of 99.999% for Composition B (RDX and TNT).

- Demonstrate the operation and performance of the following key process components for future scale-up:
  - Instrumentation, valves, pumps, etc.
  - Electrochemical cell (electrodes and membranes).
  - Full height NO_x reformer.
  - Off-gas scrubber operating in conjunction with NO_x reformer.
- Demonstrate the ability/inability to recycle, reuse or dispose of nitric acid.
- Characterize gas, liquid and solid process streams of the SILVER II™ process for selected chemical constituents and physical parameters and for the presence/absence of hazardous and toxic compounds.

Initial testing of energetics in the 12-kW system was successfully completed in October 2001. Successful destruction of dinitrotoluene (DNT), an energetic simulant; Composition B; and the mixture of Composition B and M28 propellant have been conducted.

(2) Agent Simulant

The purpose of this test is to validate the ability of the SILVER II™ process to achieve and maintain a steady-state electrochemical efficiency and verify long term continuous operability, reliability, and maintainability of the process with the organic feed, dimethyl methylphosphonate (DMMP). This testing is being conducted at APG, Maryland. The specific objectives of this testing include the following:

- Verify long-term, continuous operability, reliability, and maintainability (i.e., operation of the full length of the test without unintended shutdown) of the SILVER II™ system as proposed for full-scale. For example:
  - Demonstrate that organic, silver, acid, and water in the catholyte circuit can be effectively managed over prolonged operational periods.
  - Demonstrate that process impurities that build-up in the anolyte circuit can be effectively managed over prolonged operational periods.
  - Determine the cell current efficiency to be used in the full-scale design.
- Verify that system modifications (i.e., high shear mixers and hydrocyclones) allow for effective treatment of organic material.
- Demonstrate the applicability of the 12-kW IRS design to the full-scale design and develop data necessary for the design of the full-scale IRS.
- Confirm and supplement Demonstration II process effluent characterization.
- Determine impact of operations on materials of construction to be used in a full-scale system such as polymer-lined pipework.

Agent simulant testing of the 12-kW plant began in October 2001 with DMMP.

c. Cell Membrane Life

The purpose of this test is to provide information relating to any changes in cell membrane characteristics over an extended operating period. This test also provided data on the long-term chemical stability of several gasket materials. The results will provide an estimate of the lifetime of these components in the presence of the silver (II) ion. This testing was conducted in Oxfordshire, United Kingdom. The specific objectives of the testing include the following:

- Confirm the selection of the membrane and gasket material for full-scale.
- Determine (estimate) the expected membrane and gasket life.

The cell membrane life test was completed in October 2001.

d. Fluoride Removal System

The purpose of this testing is to provide information relating to the movement of fluorine through the plant and investigate the potential to remove it. This testing was conducted in Oxfordshire, United Kingdom. The specific objectives of the testing include the following:

- Confirm how fluorine moves through the plant, especially across the cell membrane and in the gas phase.
- Investigate the possibility of containing or removing the fluorine from the system to allow more economical materials of construction to be used.

The fluoride system testing consists of two experiments on two separate test rigs. They are the fluoride transport test and the fluoride removal test. The fluoride transport tests were completed in October 2001. The fluoride removal tests were completed in November 2001.

e. Hydrocyclone Testing

The purpose of this testing is to provide information on the hydrocyclones ability to remove large particles of solid organic from the recirculating anolyte and catholyte circuits and return them to their respective feed vessels, thereby preventing them from entering the cell. This testing will allow the anolyte system to operate with higher organic levels, which will increase the destruction performance of energetics while maintaining protection for the cell. This testing was conducted in Risley, United Kingdom. The specific objectives of this testing include the following:

- Determine appropriate design parameters for the hydrocyclone to be used in the 12-kW plant.

The hydrocyclone testing was successfully completed in June 2001.

f. High Shear Mixer Testing

The purpose of this test is to provide information relating to the operation of high shear mixers to size reduce and homogenize the solid particulate found in both the anolyte and catholyte vessels.

Previous testing during Demonstration II showed that breakdown products from energetics formed solids, which caused handling issues within the plant. The use of high shear mixers will significantly reduce the average particle size of the breakdown products allowing handling and increasing surface area exposure to the silver (II) ion process. This testing was conducted in Derbyshire, United Kingdom and at APG, Maryland. The specific objectives of this testing include the following:

- Determine performance (maximizing surface area of organics) of high shear mixers.

The high shear mixer tests were completed in September 2001.

g. Organic Transfer Testing

The purpose of this test is to provide information relating to the mechanism, which describes how organics and their intermediate products transfer across the cell's membrane. This testing was conducted at APG, Maryland. The specific objectives of this testing include the following:

- Quantitatively assess the rate and mechanism (diffusion vs. electrochemical) of transfer of organics and their breakdown products across the membrane.

The organic transfer tests were completed in September 2001. The process efficiencies for Composition B and the Composition B/M28 mixture were significantly better when compared to process efficiency for tetrytol in the 12-kW during Demonstration II testing.

h. Silver Recovery Testing

The purpose of the test is to provide information relating to the recovery and recycle of silver from metallic contaminated silver chloride in a process, which does not utilize sodium borohydride as a reducing agent. The tests quantified the form and yield of recovered silver in order to demonstrate a simpler and less expensive process that can be incorporated during plant operations without the need for off-site processing. This testing was conducted in Oxfordshire, United Kingdom. The specific objectives of this testing include the following:

- Demonstrate silver recovery from silver chloride spiked with potential impurities.
- Determine the levels of impurities in the recovered silver. Characterize the slag for purposes of reuse or disposal.
- Determine the feasibility of reusing reclaimed silver in the process.
- Determine the most economical scenario for full-scale silver recovery (i.e., on-site vs. off-site operation).

- Determine the utility and chemical requirements for a full-scale silver recovery facility.
- Obtain design information (AEA Technology to specify) to develop equipment specifications and estimate equipment cost.

The silver recovery tests were successfully completed in August 2001.

i. Evaporator Testing

The purpose of this test is to provide information relating to the recovery and recycle of water and nitric acid from a waste discharge stream coming from the impurities removal system. The impurities removal system is fed from a continuous bleed stream containing impurities from the anolyte tank. The purpose is to generate data and understand the recovery of water and nitric acid through a simple evaporation system. This testing was performed in Manchester, United Kingdom. The specific objectives of this testing include the following:

- Demonstrate the ease of evaporation and recovery of water and nitric acid from simulated feed solutions.
- Characterize the evaporator blowdown (for precipitated solids, residual acid, and general composition) and recovered acid (for impurities, especially fluoride).
- Verify that aluminum added to the evaporator can suppress fluoride volatility to reduce the fluoride content and corrosivity of recovered acid.
- Establish the maximum evaporation ratio (i.e., quantity evaporated/quantity fed) without:
  - Compromising the pumpability or viscosity of bottoms discharge stream.
  - Excessively decomposing the bottoms stream.
  - Volatilizing any bottoms components (such as HF or HCl) or decomposing the overheads components.
- Determine the appropriate materials of construction for the evaporator.
- Determine the utility and chemical requirements for a full-scale evaporator system.
- Obtain design information (AEA Technology to specify) to develop equipment specifications and estimate equipment cost.

Evaporator testing was successfully completed in October 2001.

j. Schedule

All laboratory scale testing was completed in November 2001. The 12-kW Composition B/M28 run is complete. The 12-kW DMMP run was initiated in October 2001 and is scheduled for completion in December 2001.

2. Neutralization Followed by Transpiring Wall Supercritical Water Oxidation and Gas Phase Chemical Reduction

The approach proposed by EcoLogic/Foster Wheeler/Kvaerner for a total solution for the destruction of all assembled chemical weapons uses: modified reverse assembly for chemical access to separate agent, energetics, and metal parts; chemical neutralization

followed by supercritical water oxidation for treatment of the liquid; and gas phase chemical reduction for treatment of the gas effluent from agent/energetics neutralization and for the treatment of the metal parts and dunnage.

Modifications to reverse assembly include: extracting and grinding the propellant from rockets, using a high pressure wash to remove agent heels from projectiles, and using a Continuously Indexing Neutralization System (COINS™) to remove the energetics. The chemical agents and energetics are neutralized (hydrolyzed with water and caustic). The resulting product, known as hydrolysate, is processed in a transpiring wall supercritical water oxidation system (TW-SCWO). The TW-SCWO oxidizes the Schedule 2 compounds and other organic compounds in the hydrolysate at conditions above the critical point of water. A continuous supply of clean water is introduced at the inside liner surface of the reactor to create a continuous film on the liner protecting it from corrosion and salt deposition. Liquid effluent from the TW-SCWO is processed in an evaporator. The resulting salts are sent to a landfill. The washed out metal parts, dunnage, solid process wastes, and gaseous emissions from the neutralization process are processed in the Thermal Reduction Batch Processor (TRBP)/Gas Phase Chemical Reduction™ (GPCR)™ system. By heating in a hydrogen-rich atmosphere, metal parts and dunnage are decontaminated to a 5X level and volatile organic vapors are chemically reduced. The decontaminated solids can then be disposed. The gaseous effluent is scrubbed and potentially used as a fuel to generate steam in the boiler.

The following EcoLogic and Foster Wheeler unit operations are being tested as part of the EDS program in order to provide the engineering basis for the preliminary designs being developed for the EcoLogic/Foster Wheeler/Kvaerner Total Solution: M28 propellant grinding; transpiring wall supercritical water oxidation; evaporator/crystallizer; and gas phase chemical reduction.

a. M28 Propellant Grinding

The Propellant Grinding system is used to size reduce the M28 propellant from the rockets so that the size-reduced propellant can be neutralized in the full-scale neutralization reactors. The Propellant Grinding system was tested at the vendor's facility and at the Holston Army Ammunition Plant (HSAAP), Tennessee. The specific objectives of the testing included the following:

- Validate the ability of the grinding equipment to safely reduce M28 propellant grains to ¼" pieces.
- Determine the output particle size distribution for grinder screen sizes of ¼".
- Determine the throughput of propellant for grinder screen sizes of ¼".
- Demonstrate the ability of grinding equipment to safely process foreign objects such as detached anti-resonance rods and ignitor cables.
- Determine optimum operating parameters (i.e., water flow) and equipment sizes (i.e., pump and motor sizes).

All propellant sections were successfully size reduced. The propellant grinding tests occurred in September 2001.

b. Transpiring Wall Supercritical Water Oxidation (TW-SCWO)

The TW-SCWO system is used to treat the products of the agent and energetic neutralization process. This unit is being tested at Dugway Proving Ground (DPG), Utah. The testing is comprised of two phases: Optimization Testing and Long Term Operability Testing. The specific objectives of the testing include the following:

(1) Optimization Testing

- Establish hydrolysate throughput design basis for application to both the EDS reactor and the full-scale reactor.

(2) Long Term Operability Testing

- Verify long-term, continuous operability (i.e., operation for the full length of the test without unintended shutdown) of the SCWO system as proposed for full-scale with no plugging. Long-term, continuous operability includes, but is not limited to the following:
  - Operation with materials of construction proposed for the full-scale system.
  - Operation with all expected full-scale operating procedures (i.e., any SCWO system flushing sequences at expected intervals).
  - Operation with downstream solids separation units, new reactor, and oxygen.
  - Operation without plugging/fouling upstream and downstream of the reactor.
  - Operation without liner cracking/deformation.
  - Operation without feed port plugging.
  - Operation with minimal or no corrosion of the SCWO reactor.
  - Operation without plugging of the SCWO reactor.
  - Operation without erosion of the pressure control valve.
  - Destruction of Schedule 2 compounds.
- Characterize all operability issues to determine their causes and impact on the full-scale design.
- Confirm and supplement Demonstration II process effluent characterization.
- Improve the monitoring of effluent quality and develop an effective control strategy with respect to Schedule 2 compounds and organic carbon destruction.

The TW-SCWO testing is being conducted with feeds consisting of agent hydrolysates (or simulated agent hydrolysates) and energetics hydrolysates. The Optimization Testing occurred from early March 2001 to early April 2001 on the TW-SCWO equipment that was used in Demonstration II. Modifications were then made to the existing system to better represent the full-scale design for Blue Grass. The Long Term Operability testing was initiated, using the modified TW-SCWO system in October 2001. This testing will be completed by February 2002.

c. Evaporator/Crystallizer

The Evaporator/Crystallizer is used to concentrate the SCWO effluent, by evaporation, in the full-scale system. The Evaporator/Crystallizer testing will occur at the vendor's facility and

with a pilot-scale unit that will be located along with the TW-SCWO in DPG, Utah. The specific objectives of the testing include the following:

- Determine critical design parameters for the full-scale evaporator/crystallizer, including:
  - Maximum salt concentration in evaporator/crystallizer effluent.
  - Filterability of salt crystals and solids in the evaporator/crystallizer effluent.
  - Operating parameters for the filter press.
- Demonstrate the ability of the evaporator/crystallizer to operate as proposed for full-scale.

Lab testing will be conducted on actual TW-SCWO effluent to determine the critical design parameters. In addition, an Evaporator/Crystallizer pilot-scale unit will be tested with actual effluent from the TW-SCWO at DPG, Utah. This testing will occur concurrently with the TW-SCWO, which will be completed by February 2002.

d. Gas Phase Chemical Reduction™ (GPCR™)

Metal parts, dunnage, solid process wastes, and gaseous emissions from the neutralization process are processed in the TRBP/GPCR™. Four tests were required as part of the Engineering Design Studies for these unit operations. These tests included analytical methods development, explosivity tests, metallurgy tests, and elastomer tests.

(1) GPCR™ Analytical Methods Development

The GPCR™ Analytical Methods Development focused on validating agent sampling and process monitoring techniques from the GPCR™ product gas that can be used in full-scale operations. This work also validated a method for the sampling and analysis of GPCR™ for selected Schedule 2 compounds and specific process-related breakdown products. This testing was conducted at Southwest Research Institute in San Antonio, Texas. The specific objectives of the testing included the following:

- Develop and validate methods for sampling and analysis of agent (GB, VX, and HD) in GPCR™ product gas.
- Validate the safe and effective use of the MINICAMS® for continuous monitoring of agent (GB, VX, and HD) in GPCR™ product gas.
- Develop and validate methods for sampling and analysis of Schedule 2 Compounds (resulting from GB, VX, and HD) in GPCR™ product gas.
- Develop the information necessary to support acceptance/approval of the validated methods.

The testing was conducted with GB, VX, HD and non-agent compounds. The GPCR™ Analytical Methods Development was initiated in late June 2001 and was completed in October 2001.

(2) GPCR™ Explosivity Testing

The GPCR™ explosivity testing was conducted to obtain test data to design the full-scale TRBP so that it could handle residual energetics. These tests were conducted at the Holston Army Ammunition Plant, Tennessee. The specific test objective was to:

- Develop the data necessary to design the TRBP to process residual energetics from the munitions disassembly process.

The testing was conducted with seven different types of energetics and propellant found in the Blue Grass stockpile. Temperature and pressure profiles were generated for each energetic and heating rate in the hydrogen environment. The GPCR™ Explosivity Testing was completed in early August 2001.

(3) GPCR™ Metallurgy Testing

The GPCR™ Metallurgy Testing was conducted to expose selected metal alloys to the conditions expected in the TRBP and GPCR™ reactor. These tests were necessary to determine the appropriate materials of construction for the full-scale TRBP and GPCR™ reactor. The metallurgy testing was conducted at the University of Toronto in Canada. The specific test objectives were as follows:

- Determine the appropriate materials of construction for the full-scale TRBP and reactor.
- Determine (estimate) the expected TRBP and reactor required maintenance (type and frequency).

The GPCR™ Metallurgy Testing was completed in mid-September 2001.

(4) GPCR™ Elastomer Testing

The GPCR™ Elastomer Testing was conducted to expose different elastomers to aqueous and gaseous environments to determine the effects on the elastomers. These tests were conducted at the Southwest Research Institute, San Antonio, Texas. The specific test objectives were as follows:

- Determine the appropriate elastomers for the full-scale system.
- Determine (estimate) the expected elastomer life.

The testing was conducted with test coupons made of three types of elastomers selected for their chemical resistance. The test coupons were exposed to the GPCR™ process water and the GPCR™ process gas. Each exposure test lasted 500 hours. The GPCR™ Elastomer Testing was initiated in July 2001 and was completed in early September 2001.

e. Schedule

Initial test plans for the EcoLogic/Foster Wheeler/Kvaerner EDS testing were submitted in January 2001, and were finalized in June. Test preparations were made by coordinating efforts with the test sites, the state environmental offices in which the tests were conducted, the Treaty Compliance Office, and sampling and analysis contractors in order to maximize the success of the program. Testing was initiated in March 2001 and is ongoing. All tests have been completed with the exception of the TW-SCWO and the Evaporator/Crystallizer, which will be completed by February 2002. Where testing has been completed, test reports have been provided by the Technology Providers.

3. Engineering Design Package

AEA Technology/CH2MHill and EcoLogic/Foster Wheeler/Kvaerner are generating an Engineering Design Package for the Blue Grass Chemical Demilitarization Facility (BGCDF) only. The Initial Engineering Design Packages were submitted to PMACWA on June 29, 2001. The Draft Engineering Design Packages were submitted to PMACWA on September 28, 2001. Design presentations to the independent evaluators, including the National Research Council, Mitretek, Army Materiel Systems Analysis Activity (AMSAA), and the Cost Analysis Improvement Group (CAIG) were conducted after the receipt of each submittal. Design reviews with PMACWA were also conducted after each submittal and changes are being made to these packages as a result. The Final Engineering Design Packages will be submitted to PMACWA in December 2001. PMACWA will use the final design packages to conduct design and PHA assessments to develop cost and schedule estimates. The life cycle cost and schedule estimates will be available in April 2002.

IV. ACQUISITION ACTIVITIES

A. Colorado

Current acquisition activities for Colorado include preparation of a request for proposal (RFP) for a pilot plant and development of a life cycle cost and schedule to support the technology decision.

The current acquisition strategy for the Pueblo Chemical Depot involves releasing a request for proposal after a technology decision has been made. This will allow the statement of work to reflect the actual technology chosen to be built and operated at the site. PMACWA has continued to make use of the documentation and strategies established under the Joint Program Manager for Chemical Demilitarization (PMCD)/ACWA Acquisition Working Group when the strategy was to build one RFP that could satisfy any technology decision.

PMACWA has also developed life cycle costs and schedules for the two alternative technologies (neutralization followed by supercritical water oxidation and neutralization followed by biotreatment) being considered for piloting at Pueblo. These life cycle costs and schedules are currently going through an independent review and will be submitted for consideration to the Defense Acquisition Board (DAB) to support the technology decision.

B. Kentucky

With the completion of Demonstration II Testing, design and planning of a pilot destruction facility at Blue Grass Army Depot has begun. The four alternative technologies, that successfully completed demonstration have been included in the ACWA EIS for piloting an alternative technology at four potential sites, which include Blue Grass, Kentucky[3]. Engineering Design Studies of the alternative technologies have started for the preparation of Blue Grass Engineering Design Packages, which will support the Defense Acquisition Board technology selection and any required environmental permit applications.

ACWA continues its communications and participation with the Kentucky Citizens' Advisory Commission (CAC) on a routine basis. ACWA has presented briefings at many of the CAC meetings to keep the CAC informed on the status of the program and the specifics of the alternative technologies. The CAC holds regularly scheduled meetings, which are open to the public, to address the many issues and concerns of the community relative to the alternative technologies.

All of these efforts within ACWA and at Kentucky are being focused to provide the Defense Acquisition Board with the necessary information to make a technology selection for Blue Grass in the summer of 2002.

V. ENVIRONMENTAL ACTIVITIES

A. National Environmental Policy Act (NEPA)

The NEPA sets forth policy, responsibilities and procedures for integrating environmental considerations into federal actions. In accordance with NEPA, the ACWA program published a Program Draft Environmental Impact Statement (EIS) on May 11, 2001. The purpose of the ACWA Program EIS is to assess the potential impacts of the design, construction and operation of one or more pilot test facilities for assembled chemical weapon destruction technologies at one or more chemical weapons stockpile sites, potentially simultaneously with any existing demilitarization programs and schedules at these sites. Publication of the Draft EIS started a 45-day comment period.

PMACWA held a series of public meetings to receive comments on the draft document. The Public meetings were held at: Anniston Army Depot in Alabama, Pine Bluff Arsenal in Arkansas, Pueblo Chemical Depot in Colorado, and Blue Grass Army Depot in Kentucky. At the request of citizens, special interest groups, and the EPA, the Deputy Assistant Secretary of the Army extended the public comment period for 45 additional days.

PMACWA received approximately 974 comments on the Draft EIS. These comments are now being reviewed and will be addressed in the Final EIS; which will be published in early 2002.

[3]Only three technologies, neutralization followed by supercritical water oxidation, electrochemical oxidation, and neutralization followed by transpiring wall supercritical water oxidation and GPCR™ are being considered for Blue Grass, Kentucky.

B. Resource Conservation and Recovery Act (RCRA)

The RCRA regulates the handling, storage, treatment, and disposal of hazardous waste. A RCRA permit is required for the treatment, long-term storage, and disposal of hazardous waste.

PMACWA will be required to obtain RCRA permits prior to facility construction for the technologies proposed for the destruction of the chemical weapons stockpiles at Pueblo Chemical Depot in Colorado and Blue Grass Army Depot in Kentucky.

Public Law 106-398 limits the technologies to be considered for Pueblo Chemical Depot to those demonstrated before May 1, 2000; therefore, only two of the ACWA technologies are in consideration for Pueblo Chemical Depot:

- Neutralization followed by biotreatment.
- Neutralization followed by supercritical water oxidation.

Three of the ACWA technologies are in consideration for the Blue Grass Army Depot.

- Neutralization followed by supercritical water oxidation.
- Electrochemical oxidation.
- Neutralization followed by transpiring wall supercritical water oxidation and gas phase chemical reduction.

Draft RCRA permit applications have been prepared for the two ACWA technologies being considered for the Pueblo Chemical Depot. Both RCRA applications support the current level of design for the Pueblo site. As the technology engineering designs approach a complete effort, the RCRA applications will be updated to reflect the full design.

Although the RCRA permit applications for the three technologies being considered at Blue Grass Army Depot have not been prepared, reviews of the designs have been ongoing. Preparation of the Blue Grass Army Depot RCRA permit will not begin until after the technology selection process has been completed, which is expected to be in the summer of 2002.

C. Environmental Working Integrated Product Teams

PMACWA is tri-chairing a Colorado Environmental WIPT with the Program Manager for Chemical Demilitarization (PMCD) and the Colorado Department of Public Health and Environment (CDPHE). Other members include representatives from the Pueblo Chemical Depot (PCD), Environmental Protection Agency (EPA) Region 8, and the Army Corps of Engineers. The mission of this WIPT is to expedite the planning, development, and implementation of the environmental permitting process for a destruction facility at Pueblo, Colorado. The WIPT meets approximately every six weeks with meetings rotated between Pueblo, Colorado; CDPHE headquarters in Denver, Colorado; and Edgewood, Maryland.

A key area of discussion has been the initiation of infrastructure projects at PCD that would be required regardless of the ultimate technology decision. To that end, CDPHE and EPA Region 8 have granted tentative approval to begin certain non-technology-specific infrastructure projects prior to a technology decision. Contracts for some of this work are already underway. The WIPT is also pursuing the possibility of additional construction projects that could be started once a technology decision is made, but prior to the approval of the RCRA permit.

To make the process as transparent as possible to the public, sharing of information outside of the WIPT with members of the public is a key goal. To that end, the WIPT has developed a Community Involvement Plan that lays out numerous ways information is exchanged with the public. These include mailings, updates in PCD newsletters and providing information on the CDPHE web site. To go one step beyond simply providing information to the public, all WIPT meetings are announced in the Pueblo Chieftain, the local newspaper, and are open to the public. Opening the WIPT meetings to the public has facilitated the exchange of information between the organizations involved in preparation of the permit application and the public.

A similar WIPT has been formed in Kentucky to address environmental permitting issues for a destruction facility at Blue Grass, Kentucky. This team is tri-chaired by PMACWA, PMCD, and the Kentucky Department for Environmental Protection. Other organizations supporting the Kentucky WIPT include representatives from EPA Region 4, Blue Grass Army Depot, Blue Grass Chemical Activity, and Madison County. The Kentucky WIPT also developed a community involvement plan, similar to the plan developed by the Colorado WIPT, to encourage public participation at its meetings, held approximately every two to three months. As part of that plan, the WIPT meetings are open to the public. They are announced in the Richmond Register and other regional newspapers.

VI. NATIONAL RESEARCH COUNCIL (NRC)

The NRC Committee on Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons: Phase 2 (ACW II Committee) continues to support the Assembled Chemical Weapons Assessment Program as required by Public Law 105-261 (1999). This support entails comprehensive, independent, scientific, and technical evaluations of processes other than incineration that may be used to destroy assembled chemical weapons at U.S. storage sites. The evaluations are divided into three tasks. For the first task, the NRC is to review and evaluate demonstration test results for three technologies that have previously passed the PMACWA threshold (Go-No Go) criteria and that have been selected for demonstration testing (Demonstration II). Based on its findings, the NRC is to determine whether each of the technologies is ready to proceed to the next stages of engineering development. Tasks 2 and 3 involve assessments of Engineering Design Packages for previously demonstrated technologies that could be suitable for implementation at weapons storage sites in Pueblo, Colorado or Blue Grass, Kentucky. The results of each task will be presented in an individual NRC report. The reports concerning the site-specific engineering design packages are expected to play a critical role in the DOD

Records of Decision for the selection of a technology for chemical agent destruction at Pueblo and Blue Grass.

The NRC ACW II Committee consists of 14 scientists and engineers that are recognized for their distinguished work in chemical process engineering, safety and risk analysis, environmental waste management, biochemical engineering, hazardous waste treatment, energetics, and public involvement. The committee chair is Dr. Robert Beaudet who chaired the former ACW I Committee. Approximately two thirds of the members of the initial ACW Committee were nominated and approved by the NRC to serve on the ACW II Committee. The ACW I Committee provided the first NRC reports on alternative technologies for destroying assembled chemical weapons.

The ACW II Committee has met five times during the current year for the purposes of technical discussions, report development, and updates from the PMACWA technical team and its consultants. In addition to committee meetings, members have made visits to testing sites to observe operational units, and participated in engineering reviews conducted by ACWA for each of the technology providers. The committee's findings are based on intensive studies of the test results, operational logs, and engineering diagrams supplied by the technology providers and on the technical discussions taking place at the reviews or during a site visit. Committee representatives attend and make a presentation of the NRC activities at all of the ACWA Dialogue meetings.

The Committee's first report, *Analysis of Engineering Design Studies for Demilitarization of Assembled Chemical Weapons at Pueblo Chemical Depot*, was presented to PMACWA on August 23, 2001 and released to the public on August 28, 2001. The second report, *Evaluation of Demonstration Test Results of Alternative Technologies for Demilitarization of Assembled Chemical Weapons: A Supplemental Review for Demonstration II* was presented to PMACWA on October 4, 2001 and released to the public in November 2001. The executive summaries for both reports, as written and published by the NRC, can be found in Appendices B and C of this report. Electronic versions of both full reports are available on the National Academies website at http://www.national-academies.org.

The report containing the technology evaluations for Blue Grass, Kentucky is expected to be completed in May 2002, approximately one month prior to the expected Record of Decision.

Appendix A

Dialogue on Assembled Chemical Weapons Assessment
List of Participants

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Appendix A

Dialogue on Assembled Chemical Weapons Assessment
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Appendix B

Executive Summary of the National Research Council Report

Analysis of Engineering Design Studies for Demilitarization of Assembled Chemical Weapons at Pueblo Chemical Depot

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Appendix B

Analysis of Engineering Design Studies for Demilitarization of Assembled Chemical Weapons at Pueblo Chemical Depot

Executive Summary

The Program Manager for Assembled Chemical Weapons Assessment (PMACWA) of the Department of Defense (DOD) requested the National Research Council (NRC) to assess the engineering design studies (EDS) developed by Parsons/Honeywell and General Atomics for a chemical demilitarization facility to completely dispose of the assembled chemical weapons at the Pueblo Chemical Depot in Pueblo, Colorado. To accomplish the task, the NRC formed the Committee on Review and Evaluation of Alternative Technologies for the Demilitarization of Assembled Chemical Weapons: Phase 2 (ACW II Committee). This report presents the results of the committee's scientific and technical assessment, which will assist the Office of the Secretary of Defense in selecting the technology package for destroying the chemical munitions at Pueblo. The record of decision (ROD) for selecting the technology package is expected in the second half of 2001.

The committee evaluated the engineering design packages proposed by the technology providers and the associated experimental studies that were performed to validate unproven unit operations. A significant part of the testing program involved expanding the technology base for the hydrolysis of energetic materials associated with assembled weapons. This process was a concern expressed by the ACW I Committee in its original report in 1999. The present study took place as the experimental studies were in progress. In some cases, tests for some of the supporting unit operations were not completed in time for the committee to incorporate results into its evaluation. In those cases, the committee identified and discussed potential problem areas in these operations. Based on its expertise and it aggressive data-gathering activities, the committee was able to conduct a comprehensive review of the test data that had been completed for the overall system design.

This executive summary is divided into four sections. The first section provides historical background for the DOD's program for chemical demilitarization and NRC's involvement. The next section shows the statement of task for the ACW II Committee's studies. The third section briefly describes the technologies and test programs assessed in this report, and the final section presents the committee's general findings. Detailed findings and recommendations found in the chapters relating to the individual technologies are not repeated here, but they may be found at the end of each chapter.

Historical Background

The U.S. Army is in the process of destroying the United States' stockpile of aging chemical weapons, which is stored at eight locations in the continental United States and on Johnston Atoll in the Pacific Ocean. The deadline for completing the destruction of these weapons, as specified by the Chemical Weapons Convention (CWC) international treaty, is April 29,

2007. Originally, the Army selected incineration as the preferred baseline destruction technology, and it currently operates two incineration facilities—one on Johnston Atoll and one at the Deseret Chemical Depot near Tooele, Utah. The Johnston Atoll Chemical Agent Disposal System completed destruction of the stockpile on Johnston Island in late 2000, and plans for closure of the facility are under way[4]. Similar baseline incineration system facilities were planned for all of the remaining storage sites. However, incineration has met with public and political opposition. In response to this opposition, neutralization processes (based on the hydrolysis of chemical agent using either water or sodium hydroxide solution) have been developed to destroy the chemical agents stored in bulk containers at Aberdeen, Maryland, and Newport, Indiana. For the remaining sites, where munitions containing both chemical agent and energetic materials (i.e., assembled chemical weapons) are stored, incineration is still the planned approach for destruction. In late 1996, however, Congress enacted Public Law 104-201, which instructed DOD to "conduct an assessment of the chemical demilitarization program for destruction of assembled chemical munitions and of the alternative demilitarization technologies and processes (other than incineration) that could be used for the destruction of the lethal chemical agents that are associated with these munitions."

Another law, Public Law 104-208, required a new program manager (the Program Manager for Assembled Chemical Weapons Assessment) to "identify and demonstrate not less than two alternatives to the baseline incineration process for the demilitarization of assembled chemical munitions." In addition, the law prohibited any obligation of funds for the construction of incineration facilities at two storage sites—Lexington/Blue Grass, Kentucky, and Pueblo, Colorado—until the demonstrations were completed and an assessment of the results had been submitted to Congress by DOD.

As a result of Public Laws 104-201 and 104-208, DOD created the Assembled Chemical Weapons Assessment (ACWA) program. To ensure public involvement in the program, the program manager for ACWA (PMACWA) enlisted the Keystone Center—a nonprofit, neutral facilitation organization—to convene a diverse group of interested stakeholders, called the Dialogue on ACWA (or, simply, the Dialogue), who would be intimately involved in all phases of the program. The 35 members of the Dialogue include representatives of the affected communities, national citizen groups such as the Sierra Club, state regulatory agencies, affected Native American tribes, the Environmental Protection Agency, and DOD.

The PMACWA established an elaborate program for evaluating and selecting technologies that would be appropriate for destroying the stockpile at Pueblo Chemical Depot and Blue Grass Chemical Depot. The selection process is described in detail in the 1999 NRC report *Review and Evaluation of Alternative Technologies for the Demilitarization of Assembled Chemical Weapons*. Six technology packages were originally considered for the demonstration tests. Three of these technologies underwent demonstration testing in the first round (Demonstration I) and two technology packages survived as candidates for the destruction of chemical weapons at the Pueblo Chemical Depot: those of General Atomics and Parsons/Honeywell. In Public Law 105-261 (1999), Congress mandated as follows:

[4]The stockpile on Johnston Island comprised 2,031 tons, or 6.4 percent, of the original 31,496 tons of chemical nerve and blister (mustard) agents in the U.S. stockpile.

"The program manager for the Assembled Chemical Weapons Assessment shall continue to manage the development and testing (including demonstration and pilot-scale testing) of technologies for the destruction of lethal chemical munitions that are potential or demonstrated alternatives to the baseline incineration program." It also directed that the Army continue its coordination with the NRC. The PMACWA subsequently initiated engineering design studies (EDSs) for the two technologies that successfully completed demonstration testing. The purpose of this EDS phase is to (1) support the development of a Request for Proposal (RFP) for a pilot facility; (2) support the certification decision of the Under Secretary of Defense for Acquisition and Technology, as directed by Public Law 105-261; and (3) support documentation required for the National Environmental Policy Act (NEPA) and the data required for a permit under the Resource Conservation Act (RCRA). Each EDS comprises two parts: an engineering design package (EDP) and the results of experimental studies conducted to generate required data that were not obtained during the demonstration test phase.

In response to Public Law 104-201, which required that DOD coordinate its efforts with the NRC in assessing alternatives to incineration, PMACWA asked the NRC to evaluate each of the seven technologies that had passed DOD's initial screening. The Committee on Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons (ACW I) Committee published its report in August 1999. That report found that the primary treatment processes could decompose the chemical agents with destruction efficiencies of 99.9999. However, major concerns for each technology package remained, including the adequacy of secondary treatment of agent hydrolysates and the primary and secondary treatment of energetic materials contained in the chemical weapons. A supplemental report, requested by PMACWA to evaluate the actual demonstration tests for the three technologies that were considered to warrant further investigation, was published in February 2000. Two of the technologies, those of General Atomics and Parsons/Honeywell, were considered ready to proceed to an engineering design phase. Upon completion of the supplemental report, the ACW I Committee was dissolved. Subsequently, under the continuing mandate from Congress, the PMACWA requested that the NRC form a second committee (the ACW II Committee) to evaluate the engineering design packages (EDPs) and related tests for the engineering design studies for the Pueblo and Blue Grass Depots and to examine and evaluate the Demonstration II tests of three additional technologies.

STATEMENT OF TASK

The statement of task for the NRC ACW II Committee is shown below. The present report is the committee's response to Task 2, and will be produced in time to contribute to the Record of Decision (ROD) by the Office of the Secretary of Defense on a technology selection for the Pueblo site. The latter will occur following satisfaction of NEPA requirements.

> At the request of the DoD's Program Manager for Assembled Chemical Weapons Assessment (PMACWA), the NRC Committee on Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons will provide independent scientific and technical assessment of the Assembled Chemical Weapons Assessment (ACWA)

program. This effort will be divided into three tasks. In each case, the NRC was asked to perform a technical assessment that did not include programmatic (cost and schedule) considerations.

Task 1

To accomplish the first task, the NRC will review and evaluate the results of demonstrations for three alternative technologies for destruction of assembled chemical weapons located at U.S. chemical weapons storage sites. The alternative technologies to undergo demonstration testing are: the AEA Technologies electrochemical oxidation technology, the Teledyne Commodore solvated electron technology, and the Foster Wheeler and EcoLogic transpiring wall supercritical water oxidation and gas phase chemical reduction technology. The demonstrations will be performed in the June through September 2000 timeframe. Based on receipt of the appropriate information, including: (a) the PMACWA-approved Demonstration Study Plans, (b) the demonstration test reports produced by the ACWA technology providers and the associated required responses of the providers to questions from the PMACWA, and (c) the PMACWA's demonstration testing results database, the committee will:

- perform an in-depth review of the data, analyses, and results of the unit operation demonstration tests contained in the above and update as necessary the 1999 NRC report, *Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons* (the ACW report)

- determine if any of the AEA Technologies, Teledyne Commodore, and Foster Wheeler/EcoLogic technologies have reached a technology readiness level sufficient to proceed with implementation of a pilot-scale program

- produce a report for delivery to the PMACWA by July 2001 provided the demonstration test reports are made available by November 2000. (An NRC report delivered in March 2000 covered the initial three technologies selected for demonstration phase testing.)

Task 2

For the second task, the NRC will assess the ACWA Engineering Design Study (EDS) phase in which General Atomics and Parsons/Honeywell (formerly Parsons/Allied Signal) will conduct test programs to gather the information required for a final engineering design package representing a chemical demilitarization facility at the Pueblo, Colorado stockpile site. The testing will be completed by September 1, 2000. Based on receipt of the appropriate information, including: (a) the PMACWA-approved EDS Plans, (b) the EDS test reports produced by General Atomics and

Parsons/Honeywell, (c) PMACWA's EDS testing database, and (d) the vendor-supplied engineering design packages, the committee will:

- perform an in-depth review of the data, analyses, and results of the EDS tests
- assess process component designs, integration issues, and overarching technical issues pertaining to the General Atomics and the Parsons/Honeywell engineering design packages for a chemical demilitarization facility design for disposing of mustard-only munitions
- produce a report for delivery to the PMACWA by March 2001 provided the engineering design packages are received by October 2000

Task 3

For the third task, the NRC will assess the ACWA EDS phase in which General Atomics will conduct test programs to gather the information required for a final engineering design package representing a chemical demilitarization facility at the Lexington/Blue Grass, Kentucky stockpile site. The testing will be completed by December 31, 2000. Based on receipt of the appropriate information, including: (a) the PMACWA-approved EDS Plans, (b) the EDS test reports produced by General Atomics, (c) PMACWA's EDS testing database, and (d) the vendor-supplied engineering design package, the committee will:

- perform an in-depth review of the data, analyses, and results of the EDS tests
- assess process component designs, integration issues, and overarching technical issues pertaining to the General Atomics engineering design package for a chemical demilitarization facility design for disposing of both nerve and mustard munitions
- produce a report for delivery to the PMACWA by September 2001 provided the engineering design package is received by January 2001.

Description of the Technology Packages

The assembled chemical weapons at Pueblo contain only mustard agent and energetic materials. The operations required for their destruction include (1) unpacking and disassembling the weapons, (2) separation of agents, energetics, and metal parts, (3) destruction of agent and energetic hydrolysates, (4) decontamination of the metal parts, (5) destruction of the dunnage, and (6) treatment and disposal of all associated solid, liquid, and gaseous by-products.

For both the General Atomics and the Parsons/Honeywell design packages, the primary treatment to destroy the agent and the energetic materials is hydrolysis with caustic. However, the hydrolysis products (hydrolysates) must be further treated before the final

products can be properly disposed of. For this secondary step, General Atomics proposes to use supercritical water oxidation (SCWO) and Parsons/Honeywell proposes to use biotreatment via immobilized cell bioreactors (ICBs).

Both technology packages consist of multiple unit operations that work in sequence or concurrently to carry out all aspects of chemical weapons destruction. Both processes are designed to treat agent, energetic materials, metal parts (including munitions bodies), dunnage (e.g., wooden pallets and packing boxes used to store munitions), and nonprocess waste (e.g., plastic demilitarization protective ensemble (DPE) suits; the carbon from DPE suit filters and plant heating, ventilating, and air conditioning (HVAC) filters; and miscellaneous plant wastes). Each engineering design package (EDP) includes engineering drawings and documentation, a preliminary hazards analysis, and life-cycle costs and schedule for the technology to be implemented at the Pueblo Chemical Depot. Short descriptions are given below. More detailed descriptions of the unit operations for each technology are given in Chapters 3 and 4.

General Atomics uses the acronym GATS (General Atomics total solution) to denote its technology process for the demilitarization of assembled chemical weapons. The following major operations are included:

- A modified baseline disassembly process is used; however, cryofracture is used to open the projectile bodies to access the agent. The bodies are cooled to liquid nitrogen temperature and fractured. Then the metal parts are separated from the agent.
- Agents and energetics are hydrolyzed in a bath reactor with caustic to form a hydrolysate.
- Fuzes are digested in an energetics rotary hydrolyzer with caustic.
- Munition bodies are decontaminated to a 5X condition by using an electrically heated discharge conveyor.
- The dunnage is shredded and slurried.
- All the resulting hydrolysates and the slurried dunnage are further treated with supercritical water oxidation (SCWO) to produce environmentally benign products.
- System off-gases are processed through carbon filters.

The unit operations tested during the EDS phase are the dunnage shredder hydrolysis system (DSHS), the energetic rotary hydrolyzer (ERH), and the supercritical water oxidation (SCWO) reactor. The testing of the SCWO reactor had not been completed when this report was prepared.

The Parsons/Honeywell technology team uses the acronym WHEAT (water hydrolysis of explosives and agent technology) to denote its technology package for the demilitarization of assembled chemical weapons. It consists of the following main operations:

- The Army's baseline disassembly process, with modifications, is used to separate agent, energetics, and metal parts.

- The solid heel or sludge that remains inside the munitions casing is washed out in the projectile rotary washout machine (RWM) using recirculated wash water through high-pressure water jets.
- Bursters from the mortars and projectiles are fed into the burster washout machine (BWM) by a pick-and-place machine and processed in the BWMs to wash out all explosives.
- The energetics rotary deactivator (ERD) receives fuzes, booster cups, and miscellaneous parts, and it heats them until they are deflagrated.
- Agents and energetics are hydrolyzed in a bath reactor with caustic to form a hydrolysate.
- Agent and energetics hydrolysates are diluted with water, mixed with inorganic nutrients, and fed to the ICBs, which contain aerobic microorganisms that will consume most of the organic content of the hydrolysates.
- Biological processing, followed by evaporation/crystallization, converts the hydrolysis products to liquids or solids acceptable for discharge to the environment or liquids acceptable for recycling. Biological treatment is done in the ICBs.
- Metal parts are all treated either in the batch metal parts treater (batch MPT) or the rotary metal parts treater (rotary MPT) to decontaminate metal parts to 5X.
- Dunnage is heat treated in the continuous steam treater (CST) to decontaminate it to 5X.
- Gas discharges from the plant are passed through catalytic oxidizer (CATOX) units. Some of the gas streams are also passed through activated carbon filters.

The ICB, the CST, the CATOX unit, and the projectile washout system were tested during EDS. However, the CST and the projectile washout operations were not finished at the time this report was prepared.

The committee formed two working groups to perform in-depth evaluations of each EDP. As part of their efforts, the groups visited the EDS test sites at Aberdeen Proving Ground, Maryland; Dugway Proving Ground, Utah; and Deseret Chemical Depot, Utah. Committee members also attended PMACWA status-review meetings, which were held periodically, and a review meeting at Parsons/Honeywell in Pasadena, California, where both Parsons/Honeywell and General Atomics personnel described their EDPs and the results of ongoing tests. The technology providers and PMACWA staff kindly provided draft copies of reports as they were generated. The final EDPs were released in October 2000.

In evaluating the general efficacy of the design plans for a chemical demilitarization facility suited to the Pueblo Chemical Depot and the readiness of each technology to go forward to the next level of pilot plant testing, the committee relied upon its knowledge of the proposed systems, available test results, aggressive data collection activities, and thorough review of the engineering design plans.

General Findings

General findings on the EDS phase of the ACWA program for the two technology packages evaluated in this report appear below. The general findings must be considered with

acknowledgment of the fact that some ACWA EDS testing was not completed in time for the committee to obtain final test results and that some process steps remain to be demonstrated on a pilot scale. Specific findings and recommendations for each technology package, as well as the PMACWA-sponsored investigations on hydrolysis of energetic materials, appear in the body of the report. The energetics hydrolysis test program is progressing at a pace satisfactory to meet the engineering requirements for construction of a disposal facility at Pueblo Chemical Depot. Issues surrounding the hydrolysis of neat tetryl, optimum granulation sizes, more complete characterization of hydrolysis products from aromatic nitro compounds, and optimum process control strategies for full-scale operations are yet to be investigated.

General Finding (Pueblo) 1. Based on the results of the demonstration tests, the engineering design package, and available data, the committee believes that the Parsons/Honeywell WHEAT technology package can provide an effective and safe means of destruction for the assembled chemical weapons stored at the Pueblo Chemical Depot. However, some of the process steps remain to be demonstrated.

The Parsons/Honeywell technology process provides effective means to:

- disassemble munitions by a modified baseline disassembly process that removes the agent from the projectile bodies by washout
- destroy chemical agent HD to a 99.9999 percent DRE by caustic hydrolysis
- destroy fuzes with the energetics rotary hydrolyzer
- destroy energetic materials to a 99.999 percent DRE by hydrolysis in 15 weight percent hot caustic solution, provided that the following safeguards are observed:
  - —different energetic materials are not processed together
  - —precautions are taken to ensure that all emulsified TNT is completely destroyed
- control the very large volumes of off-gases emitted from the biotreatment plant through a CATOX unit

However, the committee notes that the effectiveness of some process steps, including removal of energetics from munitions, has not been tested during the EDS. Treatment of metal parts, dunnage, and DPE suit material remain to be demonstrated. No tests are currently planned to demonstrate the efficacy of the burster washout and energetic materials size reduction steps. The projectile washout system is currently being tested. Other remaining munition disassembly operations are very similar to those used in the baseline system and have therefore been proven. The energetics rotary deactivator concept appears workable but has not been demonstrated at the pilot scale. Energetics hydrolysis is relatively immature, but current testing at Holston AAP has the capability to resolve many, but not all, of these issues (see Chapter 2).

The testing of the continuous steam treater for dunnage and the projectile washout system will not be complete until October 2001. Dioxins and furans are present in the off-gas from the CATOX units on the bioreactors but are below levels of regulatory concern. The batch metal parts treater for small metal parts is being tested, and preliminary data are encouraging.

The carousel fixture for the rotary metal parts treater for large metal parts has not been demonstrated. The use of catalytic oxidizers for various streams is currently being tested, but sufficient test data have not been provided to the committee. Because the honeycomb structure of the CATOX unit is susceptible to plugging, proper design must be employed to prevent particulates from entering the catalyst structure.

General Finding (Pueblo) 2. Based on the results of the demonstration tests, the engineering design package, and available data, the committee believes that many aspects of the General Atomics technology package can be effective and safe for the destruction of assembled chemical weapons at the Pueblo Chemical Depot. However, to achieve prolonged operability of the supercritical water oxidation (SCWO) system as designed will require extensive maintenance. In addition, the SCWO processing of dunnage slurried in energetics hydrolysate, which constitutes the vast majority of the feedstock to be processed, remains unproven. The viability of the General Atomics technology package will depend on acceptable operability of the SCWO systems.

The General Atomics technology process provides effective means to:

- disassemble munitions by using a modified baseline disassembly process for munitions and removal of the agent from the projectile bodies by cryofracture.
- destroy chemical agent HD to a 99.9999 percent DRE by caustic hydrolysis
- destroy fuzes with the energetics rotary hydrolyzer
- destroy energetic materials to a 99.999 percent DRE by hydrolysis in 15 wt percent hot caustic solution, provided that the following safeguards are observed:
  - —different energetic materials are not processed together
  - —precautions are taken to ensure that all emulsified TNT is completely destroyed
- provide effective 5X-level decontamination for munition bodies through the use of an electrically heated discharge conveyor
- readily control the very low volumes of off-gases produced through activated carbon adsorption systems

For dunnage, the materials are shredded and reduced in size to 1.0 mm. The slurry is then fed into the SCWO reactors to destroy all the dunnage.

However, the committee has serious concerns about the SCWO system that is used to process the hydrolysates and the slurried dunnage. At the time this report was prepared, not all of the long-term processing tests had been completed. On the basis of results to date, the committee has concerns about the ability of the SCWO reactor to operate continuously for adequate lengths of time. An additional concern is the ability of the size reduction system to remove 100 percent of the tramp metal that comes with the dunnage. If the tramp metal is not removed from the dunnage, the committee believes it will clog the injectors of the SCWO system and further reduce the system's online availability.

The SCWO tests that have been performed to date, especially those involving chlorinated organic compounds such as HD hydrolysate, have consistently encountered severe corrosion

of the reactor material or plugging of the reactor with salts. General Atomics proposes to solve the problem of plugging by periodically (every 22 hours of operation) reducing the pressure of the reactor to slightly below the critical point of water and flushing with clean water for two hours to remove the accumulated salts. The technology provider proposes to deal with the corrosion problem by inserting into the SCWO reactor a sacrificial titanium liner and shutting down at approximately every 140 hours of operation to open the reactor and replace or reverse the liner.[5] In the committee's opinion, the flushing step does not pose an unreasonable operating requirement; however, it considers the need for a liner replacement at six-day intervals to be excessively disruptive and not in keeping with sound principles of effective operation. In the full-scale system, liner replacement will require the following steps:

1. Cooling down and depressurizing the reactor,
2. Unbolting and removing an approximately 16-inch diameter, several-inch-thick pressure head from the top of the reactor,
3. Withdrawing the 12.5-inch diameter, 19-foot long titanium liner from the tubular SCWO reactor,
4. Reinserting the same liner reversed end to end or a new liner,
5. Setting the pressure gasket back into place and reattaching the gasket coolant lines,
6. Resetting and bolting the pressure head onto the reactor,
7. Pressure testing the SCWO reactor to assure proper head seating and sealing, and
8. Restarting the heat-up of the system and restarting the waste feed.

This appears to the committee to be a very time-consuming procedure. The experience of a number of committee members has been that large pieces of high-pressure equipment are very difficult and time consuming to seal. Tests have only been conducted with reactors 2 inches to 4 inches in diameter. The time required for this procedure at the far larger size of the full-scale SCWO unit is highly uncertain.

General Atomics proposes to build duplicate SCWO reactors so that one is operating while the second is being serviced; however, the committee has reservations about whether this level of redundancy is adequate to maintain the proposed operating schedule.

General Finding (Pueblo) 3. As the ACW I Committee observed, the unit operations in both the General Atomics GATS and the Parsons/Honeywell WHEAT technology packages have never been operated as total integrated processes. As a consequence, a prolonged period of systemization will be necessary for both to resolve integration issues as they arise, even for apparently straightforward unit operations.

This finding continues to be valid following development of and testing for the EDS design packages for the General Atomics and Parsons/Honeywell technologies. Also, in both cases, some of the routine unit operations have not yet been designed or tested. Thus, although they

[5]The corrosion is restricted to the top part of the liner so each liner can be used twice by opening the reactor and reinstalling it in the reactor with the uncorroded lower part up.

appear straightforward, these unit operations could require some redesign during systemization.

General Finding (Pueblo) 4. Several of the unit operations in both the General Atomics and Parsons/Honeywell processes are intended to treat process streams that are not unique to the chemical weapons stockpile and that could potentially be treated at existing off-site facilities. These streams include agent-free energetics, dunnage, brines from water recovery, and hydrolysates. Off-site treatment would simplify the overall processes and facilitate process integration by eliminating the need for further development of these unit operations. It might also simplify design requirements to meet safety concerns.

All of the process streams that could potentially be treated off-site have compositions similar to waste streams routinely treated by commercial industrial waste treatment facilities and do not exhibit any unique toxicity. Thus, they could be transported by standard commercial conveyance to commercial facilities that are appropriately permitted to receive the waste.

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Appendix C

Executive Summary of the National Research Council Report

Evaluation of Demonstration Test Results of Alternative Technologies for Demilitarization of Assembled Chemical Weapons: A Supplemental Review for Demonstration II

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Appendix C

Evaluation of Demonstration Test Results of Alternative Technologies for Demilitarization of Assembled Chemical Weapons: A Supplemental Review for Demonstration II

Executive Summary

By direction of Congress, the U.S. Department of Defense's (DoD's) program manager for the Assembled Chemical Weapons Assessment (PMACWA) asked the National Research Council (NRC) Committee on Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons: Phase II (the ACW II committee) to conduct an independent scientific and technical assessment of three alternative technologies (referred to as Demo II) under consideration for the destruction of assembled chemical weapons at U.S. chemical weapons storage sites. The three technologies are AEA Technologies' electrochemical oxidation process; the transpiring-wall supercritical water oxidation and gas-phase chemical reduction processes of Foster Wheeler/Eco Logic/Kvaerner (FW/EL/K); and Teledyne-Commodore's solvated electron process. Each of these technologies represents an alternative to incineration for the complete destruction of chemical agents and associated energetic materials. The demonstration tests were approved by the PMACWA after an initial assessment of each technology. The results of that initial assessment were reviewed by an earlier NRC committee, the Committee for Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons (the ACW I committee) (NRC, 1999).

For the present review, the committee conducted an in-depth examination of each technology provider's data, analyses, and demonstration test results for the critical components tested. This review report supplements the ACW I report and considers the demonstration performance of the Demo II candidate technologies and their readiness for advancement to pilot-scale implementation. Because testing in these areas is ongoing, the committee decided to cut short its fact-finding efforts for input to this report as of March 30, 2001. This cut-off was necessary in order to provide the sponsor with the needed information in a timely fashion.

In 1996 the U.S. Congress enacted two laws, Public Law 104-201 (authorization legislation) and Public Law 104-208 (appropriation legislation), mandating that the DoD assess alternative technologies to the baseline incineration process for the demilitarization of assembled chemical munitions. In December 1996 the deputy to the commander of the Soldier Biological Chemical Command was appointed as the PMACWA. Subsequently seven technologies designed for the complete destruction of assembled chemical weapons were evaluated (ACW I report), and on July 29, 1998, three of them were selected for the Demonstration I (Demo I) phase of the ACWA program.

The PMACWA requested that the NRC perform an independent evaluation of the seven technology packages that had been selected originally during earlier phases of the Assembled Chemical Weapons Assessment (ACWA) program and deliver a report by September 1, 1999. However, to meet that deadline, the NRC ACW I committee had to terminate its data-gathering activities on March 15, 1999, before the demonstration tests had been completed (NRC, 1999).

In September 1999, the PMACWA asked the ACW I committee to examine the results of tests demonstrating the operations of three of the original seven alternative technologies and to determine if they had changed the committee's original findings, recommendations, and comments. Accordingly, the NRC published a supplemental report in March 2000 (NRC, 2000), at which time the ACW I committee was disbanded.

> In 1999, Congress passed Public Law 105-261 mandating as follows:
>
> > The program manager for the Assembled Chemical Weapons Assessment shall continue to manage the development and testing (including demonstration and pilot-scale testing) of technologies for the destruction of lethal chemical munitions that are potential or demonstrated alternatives to the baseline incineration program. In performing such management, the program manager shall act independently of the program manager for Chemical Demilitarization and shall report to the Under Secretary of Defense for Acquisition and Technology.

The Army was also directed to continue its coordination with the NRC.

Congress extended the PMACWA's task through Public Law 106-79 by mandating that he "conduct evaluations of [the] three additional alternative technologies under the ACWA program, ". . . proceed under the same guidelines as contained in Public Law 104-208 and continue to use the Dialogue process and Citizens' Advisory Technical Team and their consultants." In response, the PMACWA initiated a new test program, commonly referred to as Demo II, to investigate whether three of the alternative technologies remaining from the original testing were ready to proceed to an engineering design phase.[6] The remaining technologies were from AEA, FW/EL/K, and Teledyne-Commodore. The seventh of the original technologies had been judged to be too immature for further testing during the original multitiered selection process.

In response to Congress, a second NRC committee, the Committee on Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons: Phase II (ACW II committee) was formed and tasked to produce three reports: (1) an evaluation of the Demo II tests (Task 1), (2) an evaluation of two engineering design

[6]The AEA, Eco Logic, and General Atomics technology packages were chosen by the PMACWA to undergo engineering design studies for the destruction of the assembled chemical weapons at the Blue Grass Army Depot. This decision was made by the PMACWA prior to the issuance of this NRC report.

studies (EDSs) and tests for use at the Pueblo, Colorado, storage site (Task 2), and (3) an evaluation of EDS packages and tests for the Blue Grass, Kentucky site (Task 3).

The statement of task for Task 1 is as follows:

At the request of the DoD's Program Manager for Assembled Chemical Weapons Assessment (PMACWA), the NRC Committee on Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons will provide independent scientific and technical assessment of the Assembled Chemical Weapons Assessment (ACWA) program. This effort will be divided into three tasks. In each case, the NRC was asked to perform a technical assessment that did not include programmatic (cost and schedule) considerations.

Task 1

To accomplish the first task, the NRC will review and evaluate the results of demonstrations for three alternative technologies for destruction of assembled chemical weapons located at U.S. chemical weapons storage sites. The alternative technologies to undergo demonstration testing are: the AEA Technologies electrochemical oxidation technology, the Teledyne Commodore solvated electron technology, and the Foster Wheeler and Eco Logic transpiring wall supercritical water oxidation and gas phase chemical reduction technology. The demonstrations will be performed in the June through September 2000 timeframe. Based on receipt of the appropriate information, including: (a) the PMACWA-approved Demonstration Study Plans, (b) the demonstration test reports produced by the ACWA technology providers and the associated required responses of the providers to questions from the PMACWA, and (c) the PMACWA's demonstration testing results database, the committee will:

perform an in-depth review of the data, analyses, and results of the unit operation demonstration tests contained in the above and update as necessary the 1999 NRC report, Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons (the ACW report)

determine if any of the AEA Technologies, Teledyne Commodore, and Foster Wheeler/Eco Logic technologies have reached a technology readiness level sufficient to proceed with implementation of a pilot-scale program

produce a report for delivery to the PMACWA by July 2001 provided the demonstration test reports are made available by November 2000. (An NRC report delivered in March 2000 covered the initial three technologies selected for demonstration phase testing.)

In this current supplemental review, which responds to Task 1, the ACW II committee provides an extensive review of the data, analyses, and demonstration test results for critical components of the demilitarization processes of AEA, FW/EL/K, and Teledyne-Commodore. Like the first supplemental review (NRC, 2000), this review evaluates the effects of the new test results on the findings and recommendations in the original ACW I committee report (NRC, 1999) and assesses the level of maturity attained by each technology for proceeding to the engineering design phase of development. A separate chapter is devoted to each technology, and the chapters are organized as follows: descriptions of the demonstrated unit operations; descriptions of the tests used in the study, including committee commentary; a discussion of the effects of the demonstration results on previous findings; and, finally, new findings derived from this supplemental review. Chapter 5 considers the earlier general findings and recommendations and presents new ones in light of the demonstration test results.

In general, very few of the original findings and recommendations were changed as a result of the new tests. In some cases, the original findings and recommendations were confirmed. The new findings and recommendations are presented below by technology. The level of development of unit operation processes from the candidate technologies is summarized in Table ES-1. General findings and recommendations are also presented below.

Supplemental Findings and Recommendations

AEA Demonstration Tests

Finding DII AEA-1. The overall process flow has been further complicated by major design changes in response to the Demo II testing. These changes include the addition of the IRS, CATOX units, and a flow return circuit from the catholyte to the anolyte circuit. All three changes require small-scale and pilot-scale testing. Such modifications further complicate the interfaces between process units, which increases the time required for development, start-up, and commissioning of the full-scale system. Integration of the operating units will make achievement of a viable total solution very difficult.

Finding DII AEA-2. The discovery of organic material migration across the electrochemical cell membrane will require major modifications in design and operation, such as recycling of the catholyte material to the anolyte circuit and the addition of hydrocyclones in the catholyte circuit.

Finding DII AEA-3. The formation of intermediate oxidation by-products raises operational issues, including slower processing rates and reduced electrochemical efficiency. During the testing with tetrytol in the 12 kW unit, the problems were severe enough to cause the runs to be extended well beyond the planned processing times.

Finding DII AEA-4. The generation of new energetic compounds (TNBA, PA, TNB) in the course of processing increases the complexity and hazards of the SILVER II™ process. Although the explosion hazard is reduced as the energetic feed is consumed, it is not completely eliminated until all energetic intermediates are destroyed.

Finding DII AEA-5. During the treatment of M28 in the Demo II test, lead oxide and other materials accumulated on cell anodes. The committee believes that a maintenance procedure for routine cleaning of the anodes will be required.

Finding DII AEA-6. Low steady-state electrochemical efficiencies (20 to 30 percent) were observed during treatment of tetrytol. These low efficiencies will decrease the throughput per cell and increase processing time and energy consumption.

Finding DII AEA-7. VOCs were detected in the off-gas of the AEA process technology. AEA has now included a CATOX unit in the preliminary design. The committee believes that the introduction of this additional unit operation will further complicate the scale-up and integration.

Finding DII AEA-8. The IRS for removing salts (sulfates, phosphates, silver fluoride), excess water, and any metals that may be present requires extensive development and integration. The IRS has not yet been described in sufficient detail to allow for a meaningful assessment.

Recommendation DII AEA-1. The possible formation of lead picrate when mixed energetic feeds are treated must be investigated before any processing of lead-containing propellant, TNT-based energetics, or tetryl is undertaken.

Recommendation DII AEA-2. The IRS, the CATOX units, the return flow, and all other major modifications to the system must be tested and proven during the EDS design phase.

Recommendation DII AEA-3. AEA must validate complete destruction of all energetic intermediates during the EDS design phase.

Recommendation DII AEA-4. AEA must conduct additional tests to identify suitable materials of construction to overcome corrosion problems encountered owing to the formation of HF in the treatment of GB.

Foster Wheeler/Eco Logic/Kvaerner Demonstration Tests

Finding DII FEK-1. The proposed full-scale TW-SCWO system has design and operating conditions significantly different from those tested in Demo II. These include the temperature of the transpiration water at the inlet; pH of the feed; turbulence in the reactor; and use of pure oxygen, not air, as the oxidant.

Finding DII FEK-2. The proposed full-scale design for the TW-SCWO system involves a factor of 2.25 scale-up in reactor cross-sectional area from the Demo II test unit and an increase in reactor throughput by a factor of 35. Performance under these full-scale design conditions has not been demonstrated.

Finding DII FEK-3. Aluminum present in the hydrolysates, which could lead to the formation of slurries and plugging, could be a problem. The proposed changes for mitigating this problem (e.g., changing operating conditions and/or removing aluminum during weapon disassembly) must be tested.

Finding DII FEK-4. Demo II tests confirmed that firing tubes and other solids could be treated to a 5X condition by the GPCR™ process.

Finding DII FEK-5. All waste streams have been or can be characterized sufficiently for engineering design to proceed.

Finding DII FEK-6. The current sampling and monitoring systems for agent in gaseous streams have not been certified or validated for use with the GPCR™ process off-gas.

Finding DII FEK-7. The product gas from the GPCR™ process does not meet the EPA syngas requirements because of high benzene and polyaromatic hydrocarbon content.

Finding DII FEK-8. While no agent was detected in the scrubbing solutions and scrubber filters, the ability of the GPCR™ process to destroy HD in mortars and neat GB could not be confirmed because sampling and analysis problems hampered the gathering of gas-phase data.

Finding DII FEK-9. Little evidence of soot formation was indicated when the GPCR™ unit was tested separately with PCP-spiked wood, HD mortars, M55 rocket firing tubes, and neat GB.

Finding DII FEK 10. The full-scale SCWO reactor design has not been tested and is different in size and in the flow rates of the feed streams from those used in the Demo II tests. The full-scale design treats hydrolysate at a rate per unit volume of reactor that is almost 10 times higher than that used during the Demo II tests. In addition, the ratio of the flow rates of all other streams to the flow rate of hydrolysate in the full-scale unit has decreased by approximately a factor of ten from those used during the Demo II tests. These changes in hydrolysate processing per unit of reactor volume and the reduction of other feed streams relative to the hydrolysate may reduce the efficacy of the SCWO reactor, and may be expected to exacerbate problems of corrosion and plugging.

Finding DII FEK-11. The experience of multiple shutdowns during Demo II testing of the TW-SCWO and the resulting thermal stresses and crack generation in the liner indicate a potential reliability issue, which must be significantly reduced or eliminated.

Recommendation DII FEK-1. Since the hydrolysate/total feed ratio and flow velocity used in Demo II testing are so different from those of the proposed design, the TW-SCWO reactor must be tested at a hydrolysate/total feed ratio and flow velocities close to the proposed design conditions.

Recommendation DII FEK-2. Long-term testing of appropriately designed SCWO reactor liners under the new operating conditions for the proposed full-scale operation will be necessary to prove the reliability and effectiveness of the TW-SCWO unit.

Recommendation DII FEK-3. Long-term testing of the TW-SCWO should include feeds containing chlorine, phosphorus, and sulfur and be at residence times and flow velocities close to the proposed design conditions.

Recommendation DII FEK-4. The Army or the technology provider must develop analytical methods to determine the quantities of agent in the gas streams containing hydrogen.

Teledyne-Commodore Demonstration Tests

Finding DII TC 1. Demo II tests were delayed and could not be completed for the Teledyne-Commodore process because of incidents in which the immaturity of the process became apparent. For example, an exothermic reaction between ammonia vapor and M28 propellant led to an ignition incident. At another time, Comp B dissolved in liquid ammonia leaked through flanges into valves and piping that were intended to transfer the material from the ammonia fluid jet-cutting vessel to the SET™ reactor. These incidents revealed serious safety problems associated with the Teledyne-Commodore process.

Supplemental General Findings

General Finding DII 1. The demonstration tests were not operated long enough to show reliability in long-term operation. The PMACWA's Demo II tests were required to be of the same duration as the Demo I tests. The technology providers had neither the time nor the resources for extensive systemization (preoperational testing) in Demo II. Consequently, these tests were simply proof-of-concept demonstrations that indicate whether or not a particular unit operation (with more development) might be applicable to the disposal of assembled chemical munitions.

General Finding DII 2. The AEA technology package is a very complex, immature chemical processing system. Several new unit operations required to address problems revealed in the Demo II tests will significantly increase the complexity of an integrated processing system and extend the time required for its development.

General Finding DII 3. The demonstrated components of the FW/EL/K technology package are ready to progress to the EDS phase. However, certain key units were not tested (or the results were inconclusive). Additional testing will be needed to verify the ability of the transpiring-wall technology to minimize corrosion; the testing should be carried out in parallel with development of an engineering design.

General Finding DII 4. Because of fire and safety problems, the basic process for the Teledyne-Commodore technology was not tested in Demo II. The Army decided against going forward because the Demo II goals could not be met in time. As a result, the committee had no technical basis on which to evaluate the process any further.

General Finding DII 5. As was true for Demo I, none of the unit operations tested in Demo II has been integrated into a complete system. The lack of integration is a major concern and a significant obstacle to full-scale implementation.

Supplemental General Recommendations

General Recommendation DII 1. Further development of the Teledyne-Commodore technology package for the destruction of assembled chemical weapons should not be pursued under the ACWA program.

General Recommendation DII 2. Before the AEA technology proceeds to the EDS phase, extensive testing should be performed on the SILVER II™ process, including all the new unit operations that are being proposed to address the shortcomings identified in Demo II results.

General Recommendation DII 3. For the FW/EL/K technology package, additional testing should be performed in the EDS phase to complete GPCR™ off-gas characterization and demonstrate long-term operation of the modified TW-SWCO unit.

TABLE ES-1
Summary Evaluation of the Maturity of Demo II Unit Operations and Processes

Technology Provider/Unit Operation or Process	Hydrolysates			Agent Munitions			
	VX/GB	HD	Energetics	VX/GB	HD	Energetics	Other
AEA							
- SILVER II™[a]				C	C	C	
- Solid/liquid waste treatment				C	C	C	
- Gaseous waste treatment				D	D	D	
Foster Wheeler/Eco Logic/Kvaerner							
- TW-SCWO	B	B	C				
- GPCR™				B	B	B	B[b,c]
Teledyne-Commodore							
- Ammonia fluid jet cutting and wash out system				D	D	E	
- SET™				D	D	D	C[b]
- Persulfate oxidation (agent)				D	D	D	
- Peroxide oxidation (energetics)				D	D	D	
- Metals parts and dunnage shredding							A[b,c]

Note: Environmental and safety issues were considered in assigning maturity categorizations. Schedule and cost issues were not considered. The letter designations are defined as follows (a blank space indicates that categorization was not applicable for that material).

A. Demonstration provides sufficient information to justify moving forward to full-scale design with reasonable probability of success.
B. Demonstration provides sufficient information to justify moving forward to the pilot stage with reasonable probability of success.
C. Demonstration indicates that unit operation or process requires additional refinement and additional demonstration before moving forward to pilot stage.
D. Not demonstrated and more R&D is required.
E. Demonstrated unit operation or process is inappropriate for treatment.

[a]Includes integrated gas polishing system to support demonstration.
[b]Dunnage.
[c]Metal parts.

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Appendix D

Acronyms/Abbreviations

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Appendix D

Acronyms/Abbreviations

ACW	Assembled Chemical Weapons
ACWA	Assembled Chemical Weapons Assessment
AMSAA	Army Materiel Systems Analysis Activity
APG	Aberdeen Proving Ground (Maryland)
BAA	Broad Agency Announcement
BGAD	Blue Grass Army Depot
BGCDF	Blue Grass Chemical Demilitarization Facility
CAMDS	Chemical Agent Munitions Disposal System (Utah)
CatOx	Catalytic Oxidation
CAC	Citizens' Advisory Commission
CAIG	Cost Analysis Improvement Group
CATT	Citizens Advisory Technical Team
CDPHE	Colorado Department of Public Health and Environment
CO_2	Carbon Dioxide
COINS™	Continuously Indexing Neutralization System™
CST	Continuous Steam Treater
CWC	Chemical Weapons Convention
DAB	Defense Acquisition Board
DAE	Defense Acquisition Executive
DCD	Deseret Chemical Depot (Utah)
DMMP	Dimethyl Methylphosphonate
DNT	Dinitrotoluene
DOD	Department of Defense
DPE	Demilitarization Protective Ensemble
DPG	Dugway Proving Ground (Utah)
DRE	Destruction and Removal Efficiency
DSHS	Dunnage Shredding and Hydrolysis System
ECBC	Edgewood Chemical and Biological Center (Maryland)
EDS	Engineering Design Studies
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ERH	Energetics Rotary Hydrolyzer
FY	Fiscal Year
GB	Designation for Nerve Agent Sarin
GPCR™	Gas Phase Chemical Reduction™
H_2O	Water
HCI	Hydrochloric Acid
HD	Designation for Distilled Sulfur Mustard H
HSAAP	Holston Army Ammunition Plant (Tennessee)
HT	Designation for Blistering Agent Mustard (H) with T
ICB™	Immobilized Cell Bioreactor™
IIPT	Integrating Integrated Product Team

IITRI	Illinois Institute of Technology Research Institute
IRS	Impurities Removal System
kW	Kilowatt
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NRC	National Research Council
OIPT	Overarching Integrated Product Team
PCD	Pueblo Chemical Depot
PET	Program Evaluation Team
PHA	Preliminary Hazard Analysis
PMACWA	Program Manager Assembled Chemical Weapons Assessment
PMATA	Program Manager Alternative Technologies and Approaches
PMCD	Program Manager Chemical Demilitarization
POTW	Publicly Owned Treatment Works
PUCDF	Pueblo Chemical Agent Disposal Facility
PWS	Projectile Washout System
RCRA	Resource Conservation and Recovery Act
RDX	Cyclotrimethylenetrinitramine Explosive
RFP	Request for Proposal
ROD	Record of Decision
SCWO	Supercritical Water Oxidation
T	Designation for Bis-Chloroethyl Thioethylether
TNT	Trinitrotoluene
TRBP	Thermal Reduction Batch Processor
TSD	Treatment, Storage and Disposal
TW	Transpiring Wall
U.S.	United States
VX	Designation for Nerve Agent Methylphosphonothioic Acid
WIPT	Working Integrated Product Team

State of Oregon
Department of Environmental Quality Memorandum

To: File Category 700

From: Wayne C. Thomas (WCT) 1/24/2000
Manager, Chemical Demilitarization Program

Subject: Dunnage Incinerator (DUN) Meeting Notes from the January 13, 2000 Meeting with the Army & Raytheon
DEQ Item No. 00-0109

Date: January 24, 2000

Attendees:

Wayne Thomas, DEQ
Trisha Kirk, DEQ
Raj Malhotra, PMCSD
Megan Proctor, SAIC -PMCSD
Clara Moraga, PMCSD
Tom Artioli, IOC -PMCSD
Bob Nelson, UMCD
Mark Wiggins, Maumee-RDC
Loren Sharp, RDC
Joe Gonzales, RDC
Allan Bean, RDC
Gus Aljure, RDC
Dave Nylander, RDC
Glen LeVan, RDC
Buddy Webster, Maumeee-RDC

The purpose of the meeting was to discuss the Dunnage Incinerator (DUN) modifications being addressed by Engineering Change Proposal (ECP) 639 and the Dunnage Incinerator System Feasibility Study (DUN FS), September 1999. Mr. Raj Malhotra stated that Field Configuration Control Board (FCCB) approval of the ECP had occurred and hopes to have Configuration Control Board (CCB) approval by the end of the week. Mr. Buddy Webster presented the modifications in the FCCB approved ECP 639 that were derived from the DUN FS. He followed with discussion on why certain items recommended in the DUN FS were not planned for inclusion in ECP 639 such as nitrogen purge, primary chamber dome purging, and shredder installation.

At the completion of this presentation, Mr. Wayne Thomas discussed the DEQ's view of the DUN FS and the Dunnage Furnace Retrofit Design Report, December 1994. The following summarizes many of Mr. Thomas' comments:

The Army does not have adequate experience with an operating DUN to take the position that the DUN is capable of processing carbon or wood. The operating history is "marginal at best". It is important to state where Oregon is on this issue. Candidly, looking at the 1994 Report and the DUN FS, they both say the DUN doesn't work. The Army knew in '94 the DUN wouldn't process carbon. The Army submitted an Application saying the DUN would work when they knew it wouldn't. This is serious and needs to be discussed. The Army recommendation (DUN FS) is one that says lets pick the simplest one that will meet schedule and cost that the State will agree on but not the rotary kiln because it would be a Class 3. We are considering the DUN to be untested, unproven technology. We can't talk about technical modifications to the DUN because you have no information to show it will work. The '94 Report and the DUN FS both say a bricklined rotary kiln was the best method, why isn't it being proposed.

Our confidence in the technical capability of the DUN mods are of little use when the '94 and DUN FS Reports both say the DUN won't work. The whole credibility issue is on the table. The Army knew in December '94 the Dun wouldn't work and the rotary kiln was the best option and six years later the Army is at the same place and nothing is done.

Mr. Thomas then read the last paragraph on page 1-3 of the DUN FS and made the following comments:

Your intent was not to come up with a solution but slide a permit mod through the State with something less that wouldn't work. What have you gained? No progress for six years. We don't care about your schedule -we care about protecting human health and the environment. Why should the State of Oregon run to you with an answer when you have wasted six years on the DUN when you knew it wouldn't work.

During Mr. Thomas' statements, Mr. Webster identified that use of a for rotary kiln that the information was based on 30% agent loading on carbon. Information since then indicated that agent loading is much less and does not warrant a PAS upgrade. (It is assumed this will need to be demonstrated to the DEQ eventually.)

The status of all ECPs affecting the DUN was also discussed and how they will be included in the DUN design changes and pending permit modification. Parsons has been provided a list of all past ECPs pertaining to the DUN that have been reviewed with the DEQ. These ECPs will be reflected in the permit modification design.

Mr. Malhotra requested another meeting to address the 1994 Report. Mr. Thomas agreed with Mr. Malhotra that another meeting was needed to discuss not only the 1994 report but also the Army's Application submitted in 1995 and future permitting of the DUN. Mr. Thomas said he would submit a request for references used in the reports that they have not received. A meeting has been scheduled for 9:00 a.m., 16 February 2000, in the PSB Conference Room to address these topics.

Mr. Loren Sharp recommended that Parsons be authorized to move forward on modification designs for the DUN Permit Modification upon approval of ECP 639. Mr. Thomas stated that this is an internal Army decision on how to proceed. Mr. Malhotra concurred that Parsons should continue with the design effort.

Mr. Thomas' closing comment: "I don't like what I see. I have to get up and defend to the public that what the UMCDF is doing here is going to protect human health and the environment. A DUN FS was completed six years ago and this last one is no different." He further elaborated that he will have to explain this to the Oregon Environmental Quality Commission, and they are not going to like this.

Mr. Malhotra stated to Mr. Thomas that PMCD never tried to hide anything from the DEQ and that UMCDF has always been up front with the DEQ. Mr. Thomas replied that "I hear what you are saying, but this information does not agree with what you say and your actions".

ACTION: Mr. Malhotra will coordinate getting representatives knowledgeable on the 1994 Report, DUN FS, and the Permit Application available for the February 16, 2000 meeting.

CONFEDERATED TRIBES of the
Umatilla Indian Reservation
DEPARTMENT OF SCIENCE AND ENGINEERING
P.O. Box 638
73239 Confederated Way
PENDLETON, OREGON 97801
Phone (541) 966-2400
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07-1239

9 August 2007

Mr. Rich Duval
Department of Environmental Quality
Eastern Region Hermiston Office
256 East Hurlburt, Suite 105
Hermiston, OR 97838

RE: Comments on Best Available Technology Determination (BAT) for the UMCDF

Dear Mr. Duval;

As you are aware, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) has been keenly interested in the handling and processing of secondary waste at the UMCDF[1] in Hermiston, Oregon. We have repeatedly supported the Department of Environmental Quality (DEQ) in their opposition to the off-site shipment of agent-contaminated wastes from the facility. It has been our consistent position that on-site treatment of these wastes is the only option we will accept. Under no circumstances do we support off-site shipment of agent contaminated wastes.

In light of this position, and with the understanding that the 1996 Pre-Trial Burn Risk Assessment conducted for the facility showed that on-site incineration did not pose a substantial health risk to the surrounding region, I concur with the DEQ's conclusion that on-site incineration of secondary wastes is the best available technology for the UMCDF. As such, the use of the existing metal parts incinerator (termed the MPF) for the treatment of waste streams currently designated for this fate in the RCRA[2] permit is appropriate. In addition, I concur that the use of the DFS[3] coupled with a CMS[4] is most likely the appropriate technology choice for on-site disposal of activated carbon. The DFS/CMS system has been the promised on-site incineration technology since calendar year 2000 when it was proposed to replace the dunnage incinerator (c.f. the secondary waste compliance schedule included permit modification request UMCDF-00-016-WAST(3)). In addition, the DFS/CMS technology was successfully operated at the

[1] Umatilla Chemical Agent Disposal Facility
[2] Resource Conservation and Recovery Act
[3] Deactivation Furnace System
[4] Carbon Micronization System

Army's JACDS facility. I cannot, however, make a definitive statement about the applicability of the DFS/CMS since a detailed design of a system for the UMCDF has not been completed. In addition, operation and performance data for the unit has not been compared with the emissions rates used to evaluate risk impacts at the site. This evaluation is especially important since we now know that some HD stored at the UMCDF may have higher levels of mercury than originally anticipated. This mercury will invariably be contained in activated carbon that will be processed in the DFS/CMS.

Given the nearness of the need to process carbon and the length of time needed to conduct a detailed review of the DFS/CMS, I urge the DEQ to work with the Permitee to quickly move forward to identify and permit an appropriate on-site incineration technology to destroy agent-contaminated carbon.

Thank you for considering these comments as you prepare your presentation to the Environmental Quality Commission. If you have any questions concerning this matter please contact Dr. Rodney Skeen of my staff at (541) 966-2413.

Sincerely;

Stuart Harris
Director, CTUIR-DOSE

Cc:
Rodney S. Skeen, Manager, CTUIR-EMP/DOSE
Armand Minthorn, Member CTUIR-BOT
File

State of Oregon

Department of Environmental Quality — Memorandum

To: Environmental Quality Commission **Date:** August 16, 2007

From: Stephanie Hallock, Director S. Hallock

Subject: Director's Dialogue

New Director Recruitment

A proposed process and schedule is attached, which I will walk through. In the past, the Commission has appointed a subcommittee to do much of the work on recruitment. I recommend that you do so again and suggest Commissioner Blosser, who will be the next chair, and Commissioner Williamson because of his tenure on the Commission. Logistically, the two of them will also be able to work together fairly easily. The subcommittee will work closely with the Governor's office, and Mike Carrier is here today to speak with you about that. You will be supported throughout the process by staff from the Department of Administrative Services, Twyla Lawson, and DEQ Human Resources Manager, Pattie Hollamon, as well as Helen Lottridge.

Lakeside Landfill

Lakeside Landfill has been in the news lately, most recently as the subject of an editorial in the Oregonian on August 9. Last week you should have received a copy of that editorial, as well as a copy of my letter in response which was printed on August 12, outlining the Department's legal responsibilities. Lakeside Landfill is in the permit renewal process with the Department.

Lakeside Reclamation Landfill is unlined. We know from groundwater monitoring that leachate from the landfill has entered groundwater, but we do not know if there is an adverse environmental impact from that leachate. A remedial investigation is underway to evaluate benthic organisms (the bugs in sediments) to determine if the leachate from the landfill is having an adverse impact on the Tualatin River. The evaluation will be complete by the end of this year and then we will determine whether corrective action is needed. Even if no corrective action is needed at that time, DEQ will require the facility to evaluate risks beyond their expected date of closure, and to ensure that when portions of the landfill are closed there will be no adverse environmental impacts.

Lakeside's current permit expires Jan. 30, 2008. The facility submitted a renewal permit application and closure permit application on August 3, 2007. DEQ has 45 days to determine that the application is complete or determine if additional information is needed. DEQ is requesting changes to the operations plan and major changes to financial assurance, which must be made within the next 30 days.

In particular, DEQ is requiring:

- Improved operational procedures to better monitor the types of waste entering the landfill
- An evaluation of the closed portions of the landfill to ensure that leachate is not entering waste and to identify if gas is being generated
- An updated closure plan to ensure that as future portions of the landfill are closed, it is done in such a way as to prevent future environmental problems

As part of the permit renewal, we are re-evaluating the types of wastes currently accepted at the landfill to determine if additional restrictions are needed.

After completing our review of the application and before drafting the permit, we will hold a meeting to hear comments and concerns about the facility and the permit renewal. DEQ will also hold a 35 day public comment period and a public hearing on the draft renewal permit.

The Department expects that Lakeside's neighbors, Northwest Environmental Defense Center, the city of Lakeside, Washington County, Metro, the Tualatin River Keepers, and others will be interested and actively involved in this permitting process, and that there may be challenges. Landfill neighbors consider allowing operation on agriculture land to be an error that all regulatory agencies need to fix. The neighbors also consider closing the landfill as soon as possible to be their highest priority.

We are working with Lakeside, Washington County, Metro and the neighbors to ensure that the landfill is in compliance with solid waste requirements while operational and that there will be no adverse environmental impacts after the landfill closes.

Total Dissolved Gas (TDG) Update

On June 21 you approved a request by the Army Corps of Engineers for a waiver of the Total Dissolved Gas (or TDG) standard for the Columbia River. One of the conditions of the waiver is for the Department to begin adaptive management as described in the 2002 Total Dissolved Gas Total Maximum Daily Load (TMDL) for the Columbia. The waiver includes this condition because of the controversy surrounding forebay monitoring; some argue that forebay monitors do not reflect the TDG levels experienced by fish and limit spills for fish passage, while others argue that forebay monitors are necessary to protect fish from gas bubble disease. An Adaptive Management Team will address both the accuracy and need for the 115% forebay monitoring requirement, as well as the location of tailrace TDG monitors.

The Department met with the Washington Department of Ecology on July 2 to discuss the steps for setting up the team, and we are drafting a work plan including a timeline for meetings, deciding which agencies will participate, defining the decision making process, and identifying when decisions and actions are needed for the 2008 fish passage season. We will meet with the Oregon Department of Fish and Wildlife soon to discuss the Adaptive Management Team process.

Coos Bay Meeting in October

The October EQC meeting will be held in Coos Bay. The schedule will include an evening meeting with the Port of Coos Bay, with the public invited to attend. Attached is a fact sheet giving background on the key economic and environmental issues facing the area.

The agenda will include a substantial discussion and public comment opportunity on fish consumption.

The meeting will likely begin the afternoon of Wednesday, October 17. We will spend all day on Thursday the 18th discussing strategic planning and the future implications of 2007 legislative actions. We anticipate that Gail Shibley of the Health Division will join us for the strategic planning discussion. The meeting will end in early afternoon on Friday the 19th.

DRAFT

Director of the Department of Environmental Quality Recruitment Plan

DRAFT 8/10/07

Task	Who	Completion Dates
Discuss draft plan and Identify EQC Recruitment Subcommittee	EQC, Carrier, Hallock, Lottridge	8/16/07 EQC meeting
Adopt final plan	EQC Subcommittee, Gov. ofc. with assistance from DAS and DEQ	8/31/07
Update Position Description & Organizational Chart	DAS and DEQ	9/15/07
Determine scope of recruitment	EQC Subcommittee, Gov ofc. DAS	9/15/07
Formally let stakeholders know that EQC will be taking input	DAS and DEQ	10/1/07
Solicit stakeholder input & identify screening criteria	DAS, EQC Subcommittee	Oct.-Dec. 07; take comment at Dec. EQC
DEQ manager and staff input; collect comments in one document	DEQ Executive Team	12/01/07
Create & Finalize Job Announcement	DAS	11/20/07
Open & Distribute Job Announcement; run for 30 days	DAS, DEQ	12/01/07
Develop interview questions	DAS, EQC Subcommittee, Gov. ofc.	1/1 – 1/15/08
Processing of Applications & Applicant Summary	DAS	1/1-1/15/08
Select Candidates for first interview	DAS, EQC Subcommittee, Gov. ofc.	1/1 – 1/15/08
First round of interviews (5-8 candidates)	DAS, full EQC, Gov. ofc.	Wk. of 1/21/08
Reference Checks	DAS, EQC Subcommittee	Wk. of 1/21/08
Security Checks	DAS	Wk. of 1/21/08
Ensure full EQC has received stakeholder input and input memo from DEQ staff/managers	DAS, DEQ	No later than week of 1/21/08
Develop additional questions and ideas for structure of final round of interviews	DAS, EQC Subcommittee	2/1/08 – 2/15/08
Final Interviews (2-3 candidates)	Full EQC	2/22 – 3/7/08
Interviews with Governor		Same day as EQC interviews, if possible
Consultation on final selection	Full EQC, Governor	Same day, if possible
Appointment decision & offer	EQC, support from DAS	By 4/1/08
New Director on Board		5/1/08

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
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August 9, 2007

To the Editor:

Oregon's laws and rules apply equally to all citizens. That's why I am concerned that your August 9th editorial, "Little bark, even less bite" did not consider either the Department of Environmental Quality's legal responsibilities, or the rights of businesses and business owners, as factors in a complicated equation. Oregon's laws and our regulatory processes strive to balance the concerns of numerous parties, including neighbors, environmentalists, local governments, and businesses. While shutting down a business may sound like an easy fix, it is not always the right, or the legal thing to do.

Concurrently with legal - and public - processes, DEQ is requiring that Lakeside improve operational procedures to better monitor the types of waste entering the landfill and evaluate closed portions of the landfill to ensure that leachate is not entering waste or that the landfill is generating harmful gasses. DEQ is also requiring an updated closure plan from Lakeside to ensure that future portions of the landfill are closed in the way that helps prevent environmental problems in the future.

Legal timelines in regulatory matters, including the permitting of landfills such as Lakeside Reclamation Landfill in Washington County, are not swift enough for some; we understand that. Lakeside has recently filed an application for permit renewal that will be discussed openly with the public in informational meetings and hearings. We encourage the public to remain engaged in this process.

Stephanie Hallock
Director
Department of Environmental Quality

OregonLive.com
Everything Oregon

The Oregonian

Little bark, even less bite

Out looking for -- or looking out for? -- the landfill, the DEQ seems to have lost its way

Thursday, August 09, 2007
The Oregonian

O regon's Department of Environmental Quality is a regulatory agency with a wonderfully clear mandate: "Protect the quality of Oregon's environment." In other words, it's our watchdog.

Our watchdog too often turns out to be a Chihuahua.

Little bark. Even less bite.

For the latest evidence, join us today on a summer afternoon stroll off Southwest Scholls Ferry Road. Bask in the bucolic charm of soaring pines, sylvan vineyards, a symphony of birdsong and the abiding aroma of . . .

Garbage.

Fifty years ago, Howard Grabhorn, whose family farmed these verdant vales, went to Washington County and got some sort of green light to dump waste from his demolition business in a small hollow out back of his land. That hollow has grown to more than 40 acres, and is 70 feet high.

Neighbors now have a new horizon.

And it stinks.

Most of the trucks rumbling in to Lakeside Reclamation Landfill carry debris from construction sites. More than 90,000 tons landed here last year to tower over the Tualatin River. Concerns about what's going on at Lakeside have been growing for years. Last week, finally, someone stepped up to take a stand.

It wasn't anyone from DEQ. We wish. And it wasn't anyone from Washington County. Fat chance. This white knight rode in on the least likely horse. As Metro, the regional government, launched a review of its dumping agreement with the landfill, Councilor Robert Liberty raised a question that could cut off 95 percent of its supply. Lakeside is the sole remaining unlined landfill taking waste from the Metro region, said Liberty, whose concerns were less scenic than subterranean. "It's not the top I'm worried about, it's the bottom."

No fair, cried Grabhorn's supporters, most of whom seem to be lawyers and public relations professionals on his payroll. Grabhorn must be allowed to keep his dump open, they say, so that he can afford to close it.

Who's writing this script?

Joseph Heller?

The Catch-22, landfill advocates insist, is that it takes a great deal of money to close a dump, to cap it, groom it and monitor it for a minimum of 20 years. And the fund that Grabhorn is setting aside for this

purpose, they say, isn't quite yet full.

Grabhorn, who has also filed a Measure 37 claim on the property, would like to operate through 2017. Unless, of course, Metro wants to send him more waste. Lots more. Soon.

This charade has gone on long enough. Liberty's right. It needs to stop, and it needs to stop now.

Fact Sheet

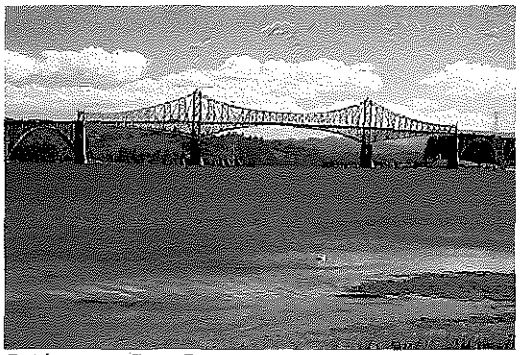
Economic Development and Environmental Issues in Coos Bay

State of Oregon
Department of Environmental Quality

Regional Environmental Solutions
Western Region
1102 Lincoln Street
Suite 210
Eugene, Oregon 97401
Phone: (541) 686-7838
(800) 844-8467
Fax: (541) 686-7551
Contact: Mary Camarata
www.deq.state.or.us

Coos Bay

Coos Bay is the largest coastal community in Oregon and is home to the deepest port on the west coast between San Francisco and Seattle. Coos Bay has been the commercial center of Oregon's southern coast since its founding in the 1850s. Transportation systems radiated from it to inland Oregon, the Pacific Ocean, and other areas of Coos County. From the 1850s to 1990s, industries in the area have included sawmills, shipyards, coal mining, dairy farming, and forest industrial production



Bridge over Coos Bay
Photo by Gary Halvorson, Oregon State Archives

With the decline of the timber industry in early 1980s, Coos Bay has struggled to develop a different industrial base. Further hardships have occurred this year with the loss O&C rural timber funds. For example, Coos County has cut approximately 100 county employees in public health and safety.

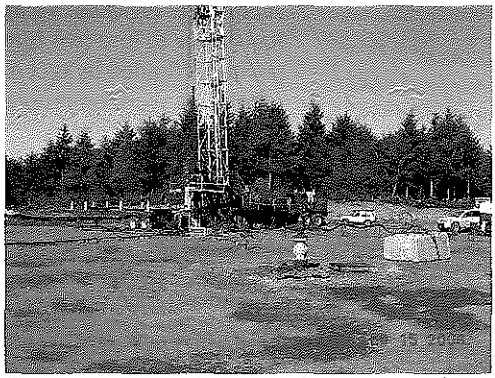
Several projects that promise potential economic benefit to the Coos Bay area are currently under way with DEQ involvement. Several of these projects have the potential to pit environmental and economic issues and at least one, the LNG facility, has created some public controversy in the area. A brief description of the projects and the environmental issues are described below.

Coal- Bed Methane Extraction

Methane Energy Corp (MEC), an Oregon-based wholly owned subsidiary of Torrent Energy, has been exploring the potential natural gas reserves contained in the coal seams of the Coos Bay Basin. MEC holds over 100,000 acres in the basin under lease, and has estimated that 1.2 trillion cubic feet of pipeline-quality methane exists in the basin. In 2005, MEC drilled five deep (2,500-3,000 feet) exploration wells. If the resource is viable, MEC will likely install up to 300 production wells, construct pipelines from the wells to markets, and extract methane for the next 10-30 years. This is the first coal-bed methane project in Oregon.

Environmental and community issues facing this project include the potential contamination of shallow drinking water wells, groundwater treatment and discharge to Davis Slough, and the impacts construction of a gas pipeline may have on the local landscape. The project is moving forward, and DEQ is currently drafting an NPDES permit for disposal of production water.

For more information about this project contact Bill Mason, (541) 687-7427; email mason.bill@deq.state.or.us



Exploration for methane is underway on Beaver Hill near Coquille.

Port of Coos Bay Projects

Once a thriving Port, the Oregon International Port of Coos Bay has seen a dramatic decrease in transportation with the timber industry decline. In order to revitalize trade, the Port is currently involved in several projects which could significantly enhance the economic potential of both the Port and the region.

Liquefied Natural Gas (LNG) Terminal

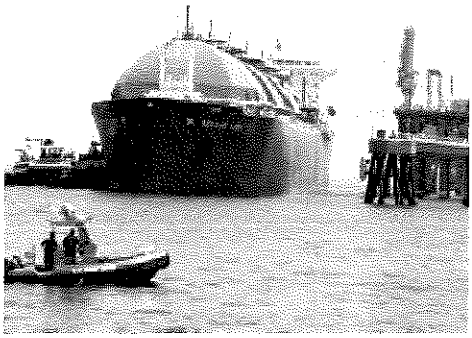
A Liquefied Natural Gas (LNG) import terminal to be managed by Jordon Cove Energy Project

Last Updated: 7/25/07
By: Mary Camarata
DEO 07-WR-010

L.P is proposed on the North Spit. A 230-mile long 36-inch diameter pipeline is also proposed to connect the terminal with existing interstate pipelines in Roseburg and Malin, and would be capable of delivering one billion cubic feet of natural gas per day to West Coast markets. Williams Pacific Connector manages the pipeline work.

There is community concern regarding the placement of the LNG facility so close to the community, and there are several environmental issues to be resolved with both the fixed facility and the pipeline construction. Jordan Cove and Williams Pacific Connector are planning to submit applications to FERC by September 2007. Once the draft EIS is issued by FERC, the 404/401 work by the Army Corps of Engineers and DEQ can proceed.

For more information about the LNG terminal proposal contact Mary Camarata (541) 687-7435; email camarata.mary@deq.state.or.us



The Coast Guard provides a security zone for a LNG shipment at another port. Photo courtesy of USCG PA3 Donnie Brzuska

Container Ship Terminal

The Port has been active at the state and national level in moving forward to secure funding for a large container ship project and is currently working with APM Terminals, a globally recognized container ship company. The Governor has committed five million dollars to this project to conduct a feasibility study. If the project becomes a federal project, there is additional 55 million dollars of state money available for the dredging operations.

Although independent of the LNG terminal activity, this project is currently proposed to be sited next to the LNG terminal. In order to accommodate the container vessels (which will carry hundreds of railcar containers), the channel will need to be deepened from minus 37 feet to minus 51 feet and widened from 300 feet to 500 feet. A turning basin will also be needed to maneuver the container vessels. APM Terminals would like to begin construction by 2010 and begin operations by 2014.

Environmental issues associated with this project include managing the large volume of sediments that will be dredged during the channel deepening/widening project, and filling of Henderson Marsh (wetlands) for the container storage and sorting facility. A project of this magnitude will require coordination with state and federal regulators on assessing environmental impacts and mitigation measures.

For more information contact Mary Camarata (541) 687-7435; email camarata.mary@deq.state.or.us

DEQ's Involvement on Port Projects

DEQ has participated in meetings for the LNG and container projects. DEQ's role in the LNG project will increase when the draft EIS is issued and a Title V Air Quality application is submitted. DEQ has received approval from the legislature to hire two Limited Duration NRS3 positions funded by receipts authority to do permitting work on proposed LNG facilities.

DEQ will have a greater role in the container project when the feasibility study is submitted. DEQ's role will be focused on the 401 certification of any dredging/filling that needs to occur.

Alternative Formats

Alternative formats of this document can be made available. Contact DEQ Public Affairs for more information (503) 229-5696.

LAURENCE A. TUTTLE 610 SW ALDER, SUITE 1021 PORTLAND, OREGON 97205 (503) 221-1683 NEVERMINED@EARTHLINK.NET

Public Comment

COMMENTS OF LAURENCE TUTTLE BEFORE THE ENVIRONMENTAL QUALITY COMMISSION IN THE MATTER OF THE ALMEDA MINE

AUGUST 16, 2007

On May 9, 2002, the Center for Environmental Equity (CEE) and Laurence Tuttle formally requested that the Oregon Department of Environmental Quality (DEQ) require permits for acid mine drainage and heavy metal discharges into the Rogue River at the abandoned Almeda Mine (Almeda). Petitioners asked DEQ to issue notices of noncompliance pursuant to the authority delegated to DEQ by the U.S. Environmental Agency (EPA) to administer and enforce the Clean Water Act (CWA).

Five year ago today, DEQ rejected the request explaining the decision in part as follows: ..."DEQ *intends to rely on state and federal cleanup laws to identify, prioritize and clean up abandoned and inactive mine sites. DEQ believes that state and federal cleanup laws provide the most appropriate and effective mechanism to address abandoned and inactive mine sites. Abandoned and inactive mine site work is a priority for DEQ's cleanup program."*

Five years later, no DEQ actions have been initiated to remediate Almeda discharges. Five years later, as we gather here today, thousands of gallons of heavy-metal laden pH 2.9 drainage flows unabated into the Rogue River. Five years later, I confirmed on Monday of this week, DEQ's Western Region Office has no active file for Almeda.

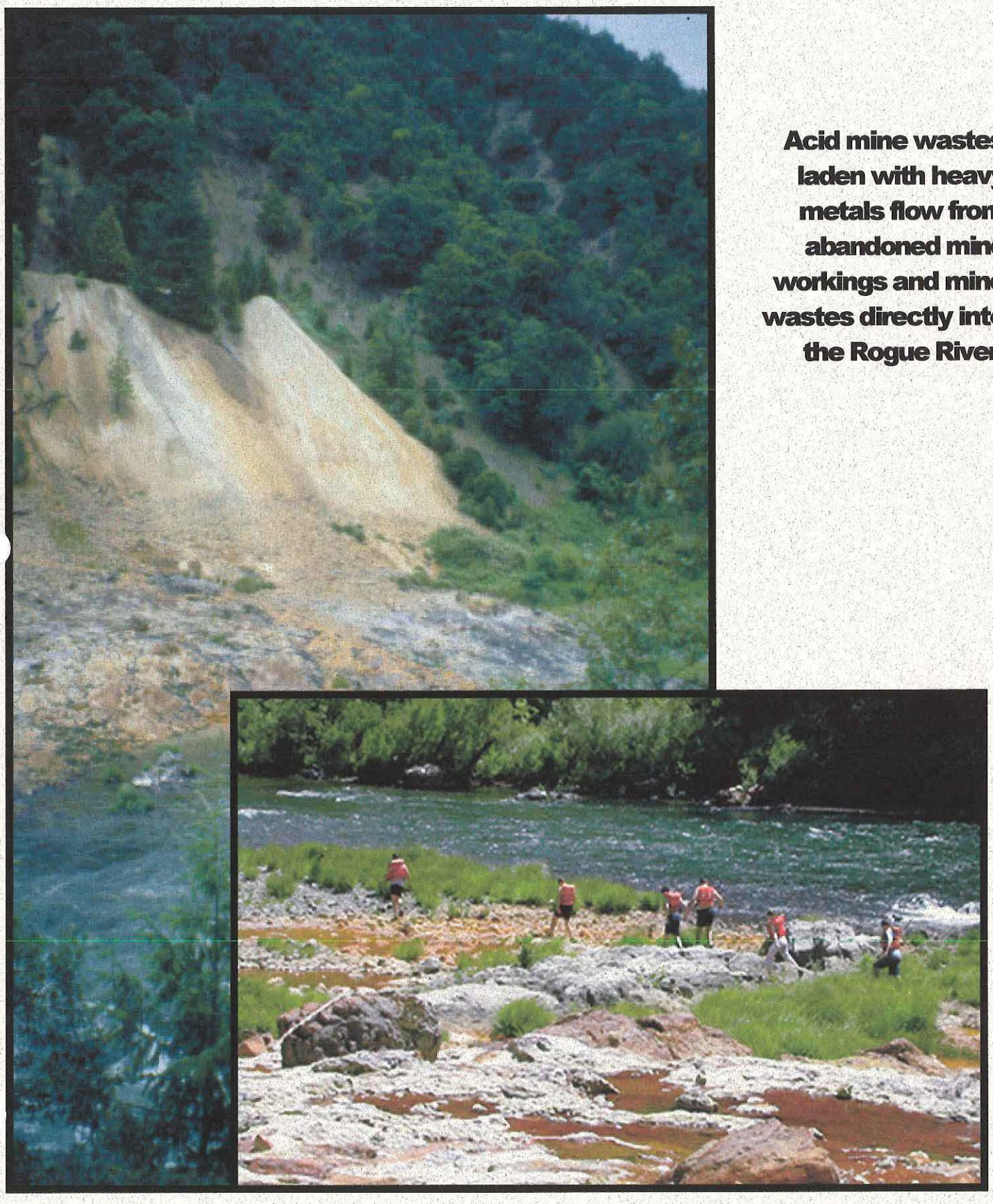
For this reason, CEE is today submitting to the Director a formal request that the Almeda 2002 decision be reconsidered. A copy of that request is attached.

Left begging an answer is this question: why am I presenting this information directly to the EQC? The answer is this: CEE's advisors have directed me to aggressively advocate returning to EPA DEQ's delegated authority to administer the CWA, and to use Almeda as one lead example.

CEE's advisors have concluded that Oregon's surface waters will be protected only by vesting Oregon's citizens with the critical element missing from DEQ's administration of the CWA: the right to directly challenge agency actions and agency failures to act.

Larry Tuttle is the Director of the Center for Environmental Equity (CEE)
CEE is an Oregon nonprofit corporation founded in 1994.

Almeda Mine



Acid mine wastes laden with heavy metals flow from abandoned mine workings and mine wastes directly into the Rogue River.

16 August, 2007

PETITION FOR RECONSIDERATION
IN THE MATTER OF THE
ALMEDA MINE
JOSEPHINE COUNTY, OREGON[1]

PETITIONERS
Laurence A. Tuttle, an individual

and the

Center for Environmental Equity

RESPONDENTS
Stephanie Hallock, Director,
Oregon Department of Environmental Quality

and the

Oregon Department of Environmental Quality

Copies to:

Theodore Kulongoski, Governor
State of Oregon

Environmental Quality Commission
Lynn Hampton, Chair
Bill Blosser, Commissioner
Donalda Dodson, Commissioner
Judy Uherbelau, Commissioner
Ken Williamson, Commissioner

[1] This Petition is not notice to sue pursuant to the Clean Water Act

610 SW Alder, #1021 - Portland, Oregon 97205 - (503) 221-1683

Background

On May 9, 2002, Petitioner's formally requested that the Oregon Department of Environmental Quality (DEQ) require permits for acid mine drainage and heavy metal discharges into the Rogue River at the abandoned Almeda Mine (Almeda). Petitioners asked DEQ to issue a notice of noncompliance to the Bureau of Land Management (BLM) for failure to apply for and to secure permits required by the CWA pursuant to the authority delegated to DEQ by the U.S. Environmental Agency (EPA) to administer and enforce the Clean Water Act (CWA).

Discharges to the Rogue River originate on the BLM-owned Almeda site and enter the Rogue River on the BLM-owned Almeda site. The direct surface discharge flows continuously from a mine tunnel, part of extensive underground Almeda mine workings.

DEQ denied Petitioner's request. See DEQ letter attached.

Continuing Environmental Degradation

Water quality tests regularly performed by Nielsen Research Corporation since 2002 confirm continuous heavy metal discharges transported by acid mine drainage (pH 2.9) flowing directly into the Rogue River. Tests also disclose highly toxic soils originating from mine wastes produced by the Almeda on-site smelter.

Despite these confirming data, neither BLM nor DEQ have acted to capture, treat, or otherwise mitigate the hazardous discharges to the Rogue River, nor to remove or treat toxic soils. Acid mine and heavy metal discharges at Almeda represent perils for human health, endangered wild fish stocks, water quality, and commercial interests.

Thousands of boaters, rafters, and anglers use the Rogue River at the Almeda site annually. The Rogue River at Almeda is a Congressionally designated wild and scenic waterway.

Potential for Catastrophic Environmental Degradation

The conditions at Almeda -- as is the case with most abandoned and inactive mines -- represent high potential for catastrophic environmental degradation. Millions of gallons of acid mine drainage and heavy metals are stored in several thousand feet of Almeda mine tunnels, stopes, and shafts above and below the surface grade of the Rogue River. Floods, unusual precipitation events, and other land disturbances are potential triggers for releasing Almeda's stored contents. An unusual precipitation pattern, for example, contributed to the massive release of mine spoils at the Formosa Silver Butte mine.

Request for Reconsideration

DEQ's decision not to require CWA permits at Almeda -- because the site had once been mined by a federal lands claim holder -- is inconsistent with DEQ's obligations to administer and enforce the CWA, and to require all private and public entities to secure appropriate pollution and facilities permits.[2]

DEQ's August 2002 letter offered the following: "....*DEQ intends to rely on state and federal cleanup laws to identify, prioritize and clean up abandoned and inactive mine sites. DEQ believes that state and federal cleanup laws provide the most appropriate and effective mechanism to address abandoned and inactive mine sites. Abandoned and inactive mine site work is a priority for DEQ's cleanup program.*"

Since August 16, 2002 -- five years ago from the date of the letter cited above -- neither DEQ nor BLM has acted to insure that Almeda's acid mine and heavy metal discharges are or will be contained, controlled, or treated. For this reason, Petitioners again formally request that, within 60 days, DEQ formally notify BLM that Almeda Mine discharges violate the CWA and that appropriate CWA permits are required.

Respectfully submitted,

Laurence A. Tuttle, an individual

Laurence A. Tuttle, Director
Center for Environmental Equity

[2] Almeda was last actively mined in 1953. All rights to mine pursuant to the 1872 General Mining Law are expired; no new mining claims have been filed in this section of the Congressionally designed Wild and Scenic Rogue River.

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696
TTY (503) 229-6993

August 16, 2002

Larry Tuttle
Center for Environmental Equity
610 SW Alder, Suite 1021
Portland, OR 97205

RE: Almeda and Champion Mines

Dear Mr. Tuttle:

Thank you for your letter of May 9, 2002, concerning Almeda and Champion mines. I apologize for the delay in responding. As you know, before responding, we wanted to discuss your complaint with appropriate DEQ staff and the Oregon Department of Justice.

In your correspondence, you requested DEQ issuance of notices of noncompliance for failure of federal land management agencies and the Phoenix Logging Company to apply for National Pollution Discharge Elimination System (NPDES) and/or Water Pollution Control Facility (WPCF) permits for discharges associated with the historic mine operations referenced above. From various sources, including the recent Oregonian news story, it is also our understanding that you are contemplating litigation to require permits for abandoned and inactive mine sites.

DEQ does not intend to issue the requested notices of noncompliance for the following reasons:

First, federal land management agencies must obtain water quality permits, either an NPDES or WPCF permit, only to the extent required by Section 313 of the Clean Water Act. That statute provides that federal agencies must comply with state and federal water quality laws to "the same extent as a nongovernmental entity." As you know, federal land management agencies generally assert that, for mines located on federal lands that were owned and operated under the 1872 mining law, the federal land management agency is not an "owner or operator" for purposes of CERCLA or the Clean Water Act. While we recognize that the law is not clear on this point, DEQ does not intend to challenge the federal agencies' position. We will, however, ask the U.S. Environmental Protection Agency for their interpretation of the Clean Water Act requirements as they might apply to abandoned and inactive mine sites located on federal lands.

Second, DEQ intends to rely upon state and federal cleanup laws to identify, prioritize and clean up abandoned and inactive mine sites. DEQ believes that state and federal cleanup laws provide the most appropriate and effective mechanism to address abandoned and inactive mine sites. Abandoned and inactive mine site work is a priority for DEQ's cleanup program.

DEQ shares your goal of getting former mine sites addressed as quickly as possible. I believe we are using the best means available to reach that goal. If we can provide any additional information about DEQ's cleanup efforts for abandoned and inactive mine sites, please do not hesitate to contact Keith Andersen, Western Region Community Solutions Section Manager at (541) 686-7838 or Jeff Christensen, DEQ Abandoned Mine Lands Coordinator at (503) 229-6391.

Thank you for your continued interest and concern regarding this important work.

Sincerely,

Stephanie Hallock

Stephanie Hallock
Director

cc: Keith Andersen:DEQ:WR:Eugene
Kerri Nelson:DEQ:WR:Eugene
Anne Price:DEQ:HQ:OCE
Mike Llewelyn:DEQ:WQ

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204-1390
503-229-5696
TTY: 503-229-6993

September 12, 2007

Mark G. Reinecke
Attorney At Law
591 SW Mill View Way
PO Box 1151
Bend, OR 97709-1151

On September 12, 2007, the Environmental Quality Commission issued the enclosed EQC Order in Case No. AQ/AB-WR-05-187. The Order found that your client, Alpine Abatement Associates, Inc. is liable for a civil penalty of $18,035, to be paid to the State of Oregon. If the civil penalty remains unpaid for more ten (10) days from the date the Order becomes final either upon appeal or by operation of law, we will file the Order with the Yamhill County Clerk, and with any County Clerk in any other county where your client may own real property. This will result in a lien being placed on any real property your client may own in that county. Your client will not be able to clear title of its property in a sale without paying its debt plus interest to this Department. We will also refer the Order to the Department of Revenue or a private collection agency for collection, pursuant to ORS 293.231. Statutory interest on judgments is nine percent per annum.

Please send a check or money order in the amount of **$18,035**, made payable to "**State Treasurer, State of Oregon**," to the **Business Office, Department of Environmental Quality, 811 S.W. Sixth Avenue, Portland, Oregon 97204**.

If you have any questions, please call Deborah Nesbit at DEQ's Office of Compliance and Enforcement in Portland, (503) 229-5340.

Sincerely,

Jenny Root

Jenny Root
Acting Administrator
Office of Compliance and Enforcement

cc: Business Office, DEQ
Helen Lottridge, OD, DEQ
AQ Division, HQ, DEQ
Dottie Boyd, Salem Office, DEQ
Alpine Abatement Associates, Inc., 65100 Gerking Market Rd, Bend OR 97701
Alpine Abatement Associates, Inc., Robert S Lovlien, Registered Agent, 40 NW Greenwood, PO Box 1151, Bend OR 97709
Office of Administrative Hearings, Transportation Hearings Division, 1905 Lana Ave NE, Salem, OR 97314

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION
OF THE STATE OF OREGON

In the Matter of	)	
Alpine Abatement Associates, Inc.	)	Order Dismissing
	)	Petition for
Respondent	)	Commission Review
	)	
	)	No. AQ/AB-WR-05-187
	)	(OAH Case No.129544)

This matter came before the Environmental Quality Commission during its regular meeting on August 16, 2007. The procedural history of this matter is set out in the Staff Report (Attachment A).

The Commission finds that Petitioner has failed to file exceptions and a brief as required by OAR 340-011-0575(5). Accordingly, the petition for Commission review is dismissed in accordance with OAR 340-011-0575(5)(f). The proposed decision of the Administrative Law Judge issued on March 23, 2007 and included as Attachment B to this Order is the final order of the Commission.

Dated this 12th day of September, 2007.

Stephanie Hallock

Stephanie Hallock, Director
Department of Environmental Quality
On behalf of the
Environmental Quality Commission

Notice of Appeal Rights

RIGHT TO JUDICIAL REVIEW: You have the right to appeal this Order to the Oregon Court of Appeals pursuant to ORS 183.482. To appeal you must file a petition for judicial review with the Court of Appeals within 60 days from the day this Order was served on you. If this Order was personally delivered to you, the date of service is the day you received the Order. If this Order was mailed to you, the date of service is the day it was *mailed*, not the day you received it. If you do not file a petition for judicial review within the 60-day time period, you will lose your right to appeal.

Attachments
GENV0523.DOC

ATTACHMENT A

State of Oregon
Department of Environmental Quality Memorandum

Date: July 30, 2007

To: Environmental Quality Commission

From: Stephanie Hallock, Director S. Hallock

Subject: Agenda Item D, Action Item: Request for Dismissal of Contested Case No. AQ/AB-WR-05-187 regarding Alpine Abatement Associates, Inc. August 16, 2007 Environmental Quality Commission (Commission) meeting

Appeal to EQC

On April 20, 2007, Alpine Abatement Associates, Inc. filed a Petition for Commission Review (Attachment B) of a Proposed and Final Order (Attachment C) assessing the company a civil penalty of $18,035 for several asbestos-related violations.

The Commission's rules require that a party appealing a proposed order must file a brief and exceptions within 30 days of filing the Petition for Review, and that if the party wishes an extension of that time, the party must file a request for extension of time before the original deadline passes. OAR 340-011-0575(5)(a) and OAR 340-011-0575(5)(e). In this case, Alpine Abatement Associates, Inc.'s brief and exceptions were due on May 21, 2007, but Alpine Abatement, Inc. did not file a request for extension until May 24, 2007.

The Commission's rules allow it to dismiss a petition for review when the exceptions and brief were not filed in a timely manner. OAR 340-011-0575(5)(f). The rules also prevent the Commission from considering any substantive arguments that were not properly raised in timely exceptions, so dismissal is ordinarily the only practical means for dealing with a petition for review that was not accompanied by the timely filing of exceptions.

A representative of the Department will be present at the August 16, 2007, Commission meeting to answer any questions you may have about this request. The Commission's legal counsel will also be available to address any question relating to the Commission's legal authority with respect to this matter.

EQC Authority

The Commission has the authority to resolve this matter under OAR 340-011-0575.

Alternatives The Commission may:

1. Dismiss the Petition for Commission Review leaving the Proposed and Final Order in place.
2. Schedule the case for review at a future Commission meeting.

Attachments

A. Proposed Order for Assessment of Civil Penalty, dated March 23, 2007.
B. Petition for Commission Review of the Proposed and Final Order, dated April 20, 2007.
C. Request for Extension, dated May 24, 2007.
D. OAR 340-011-0575

Available Upon Request OAR Chapter 340, Division 11; ORS Chapter 468

Report Prepared By:

Jane K. Hickman, Administrator
Office of Compliance and Enforcement
Phone: (503) 229-5555

ATTACHMENT B

BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF OREGON
for the
THE ENVIRONMENTAL QUALITY COMMISSION

IN THE MATTER OF:	) **PROPOSED AND FINAL ORDER**
	)
ALPINE ABATEMENT ASSOCIATES, INC., an Oregon corporation,	) OAH Case No.: 129544
	) Agency Case No.: AQ/AB-WR-05-187
	)
Respondent	) Yamhill County

HISTORY OF THE CASE

On March 23, 2006, the Department of Environmental Quality for the State of Oregon (DEQ) issued a Notice of Violation and Assessment of Civil Penalty to Alpine Abatement Associates, Inc. (Respondent). The notice alleged eight violations: (1) Respondent failed to keep friable asbestos-containing materials (ACM) adequately wet until disposed of, in violation of OAR 340-248-0270(7)(a); (2) Respondent failed to have at least one viewing window installed in its negative pressure enclosure at its facility, in violation of OAR 340-248-0270(7)(e); (3) Respondent openly accumulated asbestos-containing waste material (ACWM), in violation of OAR 340-248-0205(1); (4) Respondent failed to enclose the area where friable asbestos material removal was occurring with a negative pressure enclosure, in violation of OAR 340-248-0270(7)(d); (5) Respondent failed to comply with final air clearance sampling requirements by not performing aggressive sampling in the clearance area, in violation of OAR 340-248-0270(13)(c); (6) Respondent failed to comply with final air clearance sampling requirements by failing to timely submit air clearance sampling results, in violation of OAR 340-248-0270(13)(d); (7) Respondent failed to comply with final air clearance sampling requirements by allowing a non-certified employee to perform sampling and submit results to DEQ, in violation of OAR 340-248-0270(13)(a); and (8) Respondent removed portions of its containment around an asbestos project, in violation of OAR 340-248-0270(13).

On April 19, 2006, Respondent requested a hearing. On July 24, 2006, the DEQ referred the hearing request to the Office of Administrative Hearings (OAH). Administrative Law Judge (ALJ) Todd C. Ainsworth was assigned to preside at hearing. A telephonic prehearing conference was convened on September 18, 2006, to clarify the issues, review stipulations of the parties, discuss hearing procedures and evidentiary matters, and to schedule a hearing date. A second telephonic prehearing conference was convened on October 30, 2006, to further discuss evidentiary matters and to schedule a hearing date. The new hearing date was scheduled for December 5, 2006. On December 4, 2006, the hearing was rescheduled due to a fire at DEQ's Bend, Oregon, office on or about December 1, 2006. The hearing was rescheduled to January 16, 2007.

Prior to the hearing, the parties resolved several of the issues. With respect to Violation 2, the parties stipulated that Respondent failed to have at least one viewing window installed in its negative air enclosure. With respect to Violation 7, the parties stipulated that Respondent failed to require a properly certified independent party to perform air clearance sampling. By stipulation of the parties, DEQ withdrew Violation 8, regarding Respondent's alleged removal of its containment around an asbestos abatement project. (Ex. A1.)

A hearing was held on January 16, 2007, in Bend, Oregon. Respondent appeared by and through Attorney Mark G. Reinecke. Respondent's president, Jack R. Billings, appeared as the authorized representative of Respondent, and testified on behalf of Respondent. Also testifying on behalf of Respondent were Quinton D. Million (Respondent's Field Superintendent), M. Teresa Smith (Citizen's Bank commercial lender), and Waldo Farnham, of Farnham Electic Company. DEQ was represented by Bryan Smith, Environmental Law Specialist. Testifying on behalf of DEQ was Dottie Boyd, DEQ Air Quality Asbestos Program Compliance Inspector.

The record remained open to accommodate DEQ's submission of a DVD video clip and the U.S. Environmental Protection Agency's *Asbestos HESHAP Adequately Wet Guidance* publication, and for the parties' submission of written closing arguments. The record closed on February 7, 2007, on receipt of all those items by ALJ Ainsworth. Following the hearing, the parties stipulated that the penalty for Violation 2 shall be $825 and the penalty for Violation 7 shall be $1,910. (Written closing arguments of the parties.)

ISSUES

1. (Violation 1) On or about August 11, 2005, did Respondent fail to keep friable ACM adequately wet until those materials were disposed of in violation of OAR 340-248-0270(7)(a)? If so, did that failure cause a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o)?

2. (Violation 3) On or about August 11, 2005, did Respondent openly accumulate ACWM in violation of OAR 340-248-0205(1)? If so, did Respondent's accumulation cause a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(p)?

3. (Violation 4) On or about August 11, 2005, did Respondent fail to install a negative pressure enclosure around the area where friable asbestos materials were to be removed, in violation of OAR 340-248-0270(7)(d)? If so, was Respondent's failure a violation of a work practice requirement for asbestos abatement projects that caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o)?

4. (Violation 5) On or about August 11, 2005, did Respondent fail to comply with the final air clearance sampling requirements by not aggressively performing final air clearance sampling with an air blower or fans, in violation of OAR 340-248-0270(13)(c)?

5. (Violation 6) On or about September 11, 2005, did Respondent fail to comply with the final air clearance sampling requirements by not timely submitting the required air clearance sampling results to DEQ, in violation of OAR 340-248-0270(13)(d)?

EVIDENTIARY RULINGS

Exhibits A1 through A16, offered by DEQ, were admitted into the record. Respondent's objection to Exhibit A12 (memorandum of Dottie Boyd) on grounds the document was cumulative, was overruled. The other exhibits were admitted without objection. Exhibits R1 through R3, offered by Respondent, were admitted into the record without objection.

During the hearing, DEQ requested that it be allowed to submit two additional exhibits after the hearing and DEQ's request was allowed. DEQ thereafter submitted with its written closing argument a DVD containing several short video clips taken by DEQ Inspector Dottie Boyd and a nine-page publication prepared by the U.S. Environmental Protection Agency entitled, *Asbestos NESHAP Adequately Wet Guidance*. The EPA publication has been marked Exhibit A17 and the DVD has been marked Exhibit A18. Both exhibits are hereby admitted into the record.

FINDINGS OF FACT

1. Respondent is an experienced asbestos abatement contractor situated in Bend, Oregon. Jack R. Billings is the President and owner of Respondent. Respondent has been in business since 1988 and has completed hundreds of asbestos abatement projects inside and outside Oregon. Respondent is very familiar with DEQ's asbestos abatement requirements. Respondent successfully bid to perform an asbestos abatement project at the Safari Motel at 321 North Highway 99W in McMinnville, Oregon. The motel was dilapidated and had been in disrepair for two years. Mr. Billings did not visit the site before making the bid. The asbestos abatement project involved removal of asbestos-containing ceiling texture material and sheet vinyl inside the motel prior to demolition of the motel by another contractor. Respondent retained Quinton Million as supervisor for the project and Respondent hired employees locally from another contractor to perform the work. Those employees were Hispanic and spoke Spanish as their first language. Mr. Billings did not visit the project as it was being done. (Ex. A12, R3; testimony of Jack Billings.)

2. Respondent sent an ASN-1 friable asbestos abatement Project Notification Form to DEQ regarding the Safari Motel. DEQ received the Project Notification Form on July 19, 2005. The Project Notification Form specified removal of 1,500 square feet of ceiling texture and sheet vinyl and identified the project start date as August 1, 2005 and the completion date as August 5, 2005. (Ex. A3.) On or about August 2, 2005, Respondent provided DEQ with a revised Project Notification Form increasing the quantity of removal to 8,622 square feet and identifying the new completion date as August 10, 2005. Respondent's Project Notification Form identified the method of removal as "fullscale/wet/neg[ative] pressure." (Ex. A4.)

3. DEQ Inspector Dottie Boyd has worked in DEQ's asbestos program for 10 years, and has conducted 500 to 800 asbestos compliance inspections during that time. On August 10,

2005, Ms. Boyd performed a compliance inspection of Respondent's work at the Safari Motel project. Although the completion date was listed as August 10, Respondent was still performing work on the project. At the time of the inspection, the weather had been hot and dry for several days. Respondent had erected a negative air containment enclosure around the areas being abated. Ms. Boyd initially noticed two violations regarding lack of a viewing window and lack of contractor name on generator labels on bags of abated material. She also noticed material tracked on the ground at the entranceway into the lower containment area, which appeared to have been tracked out of the containment by workers. Mr. Million advised Ms. Boyd that workers were decontaminating outside the containment area and he hosed the material off the walkway. Ms. Boyd took a sample of this material, but testing revealed no asbestos content in the sample. (Ex. A12; testimony of Dottie Boyd.)

4. On August 10, 2005, Ms. Boyd donned protective gear and entered the containment area for approximately one hour. There were several workers in the area. Ms. Boyd observed that popcorn debris had been removed and there was very dry debris on the floor, stuck to the plastic containment walls, and coating the equipment in the area. One of the workers was dry sweeping popcorn debris on the floor, which was an inappropriate method of removal. Ms. Boyd saw a hose, water bucket and an airless sprayer, but she did not see any of the equipment or water used during the time she was in the containment. She observed three negative air machines in operation within the containment. A fourth negative air machine in Room 39 was not hooked up. She found several closed clear asbestos waste bags, which were light when pickup up. This indicated to Ms. Boyd that the waste material inside had not been wetted. She wetted and tested the material and confirmed for herself the waste material in the bags was dry. Ms. Boyd did not see any motel furniture or other similar items of value inside the containment, although she saw some boxes covered by plastic sheet. (Ex. A5 (photographs), A12; testimony of Dottie Boyd.)

5. Respondent's employees did not see any motel furnishings of value in the containment area or have any information that unauthorized parties had actually entered the containment area after August 9, 2005. (Testimony of Quinton Million and Teresa Smith.)

6. On August 10, 2005, Ms. Boyd completed her inspection and advised Mr. Million that she had observed several violations: failure to keep friable ACM adequately wet during removal, no viewing window, lack of generator name on waste labels, ACWM not adequately wet and a potential for open accumulation of ACWM outside the containment area on the walkway. Ms. Boyd also told Mr. Million that she did not think Respondent would pass an aggressive air clearance testing, based on the dryness of the material inside the containment area. She explained to Mr. Million that the air clearance testing was a work practice requirement and that if Respondent removed the containment without a valid aggressive air clearance, Respondent would be in violation of DEQ regulations. Mr. Million told Ms. Boyd that he inspected the project in the mornings and in the evenings by going inside and looking at the progress at those times. Ms. Boyd concluded the inspection, but planned to return the following day to re-inspect the project. (Ex. A12; testimony of Dottie Boyd.)

7. On August 11, 2005, Ms. Boyd re-inspected Respondent's project at the Safari Motel. The outside temperature at the time was very warm. When she arrived, she observed a small

amount of popcorn texture material on the entryway outside the containment area at the same location Mr. Million washed off material the previous day. Respondent did not have a decontamination chamber at the entrance to the containment. Ms. Boyd took photographs of the material on the walkway and took samples of the material for testing. (Ex. A8, A9; testimony of Dottie Boyd.) The material had been tracked onto the entryway area outside the containment by Respondent's workers exiting the containment while working on the project. Laboratory analysis later determined the sample contained 2 percent chrysotile asbestos. (Ex. A7; testimony of Dottie Boyd.) Ms. Boyd also saw a push broom outside the door of the containment, in the open air. The handle of the broom was covered with dust and there was popcorn texture debris in the bristles of the broom. (Ex. A8, A12; testimony of Dottie Boyd.)

8. During her August 11, 2005, inspection, Ms. Boyd again put on protective gear and went into Respondent's project area. She observed that asbestos was still being removed in one of the rooms and the floor of that room was wet. However, popcorn debris on the floor of the front hallway was dry. Some of the containment had been removed by Respondent and air clearance testing had not been done yet. A substantial portion of the plastic sheeting of the containment had been taken down, rolled up, and placed in a waste bag. The rolled up plastic sheeting in the waste bag was still coated with dust from the project. The wood floors had dry popcorn texture debris tracked on them where the plastic sheeting on the floor had been removed. Portions of the containment area were open to the outside air and there were holes in some of the remaining plastic sheeting that compromised the containment by allowing direct access to outside air. During her one-hour inspection inside the containment, Ms. Boyd observed water spray equipment and a hose, but did not see Respondent's employees actually use the equipment or apply any water as they worked. (Ex. A9 - photographs; testimony of Dottie Boyd.)

9. During the August 11, 2005 inspection, Ms. Boyd also observed that the three negative air machines were turned off and there was no negative pressure in the area where active abatement and cleanup was occurring. She observed that the plastic wall sheeting was not pulled inward, as it would be if negative air pressure existed. The fourth negative air machine had been removed from Room 39, and a worker had a radio playing in that room as the worker prepared to spray encapsulant in the room. The room was approximately 2,000 square feet in area. The worker, Joel Bravo, told Ms. Boyd that he had turned off the negative air machines because the encapsulant he sprayed would clog up the machines. He stated he was preparing for air clearance testing. Ms. Boyd took photographs and a short video of the non-operational negative air machines. (Ex. A9, A18.) Mr. Bravo asked Ms. Boyd if he should turn the machines back on, and she told him that he should do that. Mr. Bravo, or someone at his direction, turned the negative air machines on minutes later. Because negative air pressure was not maintained, there was a potential for the fibers to be released into the outside air when stirred up by people moving in and out of the work area. (Testimony of Dottie Boyd.)

10. Ms. Boyd has conducted between 50 and 100 other compliance inspections on popcorn texture remodel or demolition projects. On August 11, 2005, Ms. Boyd requested that Mr. Million allow her to examine waste bags of ACWM from the project that were located in Respondent's truck. Million selected ten bags at random and Boyd inspected the material inside the bags without opening the bags. Four of the bags had no signs of moisture in them and were

very light when picked up. There were no condensation drops inside those four bags. Based on her training and experience, Ms. Boyd concluded there was no moisture in the four bags. The other six bags had some evidence of condensation inside, although Ms. Boyd could not determine whether the contents of those six bags was "adequately wet" within the meaning of the rules. She did not take bulk samples of the material in the waste bags. Respondent's name did not appear on the generator labels on the bags. (Ex. A9 - photographs; A12; testimony of Dottie Boyd.)

11. Prior to leaving Respondent's project on August 11, 2005, Ms. Boyd advised Mr. Million that she had observed several violations on the site, including failure to maintain negative air pressure in the containment, allowing asbestos-containing material to be tracked outside by workers, and failure to keep the floor of the containment and ACWM in waste bags adequately wet. When asked by Ms. Boyd why the plastic had been removed from the containment, Mr. Million did not provide an answer. Mr. Million advised that air clearance testing was scheduled that afternoon at 1:00 p.m. with Clayton Group Services. (Testimony of Dottie Boyd.)

12. Following Ms. Boyd's inspection of the ten waste bags, and after she left the project, Mr. Million tested the waste bags in the truck with a moisture meter and concluded there was at least 18 percent moisture in the bags. He did not directly advise Ms. Boyd of this test, but relayed the information to Mr. Billings. (Testimony of Quinton Million.) Moisture meters are not used in asbestos abatement procedures by DEQ or other agencies regulating asbestos remediation. (Testimony of Dottie Boyd and Jack Billings.)

13. At 3:00 p.m. on August 11, 2005, Mr. Billings telephoned Ms. Boyd and they discussed the various violations. Mr. Billings advised Ms. Boyd that Mr. Million told him an electrical breaker blew just prior to Ms. Boyd's arrival to conduct her inspection on August 11, 2005. Ms. Boyd subsequently checked with the property owner and other businesses at the site and determined that electrical breakers had not blown near the time of her inspection on August 11, 2005. (Testimony of Dottie Boyd.)

14. On August 11, 2005, Respondent's subcontractor, Clayton Group Services (Clayton), performed air testing at the project. The Clayton air technician failed to use fans to stir up loose particles during the testing, as required by DEQ rules. Therefore, Clayton did not conduct the testing in accordance with DEQ standards requiring "aggressive" air clearance testing, and the test results were invalid. In addition, the technician made calculation errors during her testing. Immediately following the tests that afternoon, the Clayton technician erroneously gave Respondent verbal advice at the project site that the test results met DEQ clean air requirements. In response to Clayton's advice, Respondent removed the rest of the containment. (Testimony of Dottie Boyd and Mr. Billings.) Mr. Billings discovered the mistake in calculations the following day and contacted Ms. Boyd. Mr. Billings immediately instructed Mr. Million to re-install the containment so the air clearance testing could be properly completed. The containment was re-installed on August 12, 2005, and Respondent faxed a revised Project Notification Form to DEQ amending the completion date to August 13, 2005. Respondent did not file additional revisions to the Project Notification Form. (Ex. A12; testimony of Dottie Boyd and Jack Billings.)

15. Respondent completed its asbestos abatement project at the Safari Motel on September 15, 2005. The owner of the property required that Respondent re-do some of its work during that time. Respondent was required to file a second Project Notification Form with DEQ for work performed at the Safari Motel between August 12, 2005 and September 15, 2005. Air Clearance Sample Results from testing performed on August 5, 2005 were received by DEQ on October 3, 2005. (Ex. A14; testimony of Dottie Boyd.)

16. Based on the observed violations at the Safari Motel project, Ms. Boyd suspended Quinton Million's DEQ supervisor's certificate. She had never suspended a project supervisor before. (Testimony of Dottie Boyd.)

17. All materials described in DEQ's violation allegations, with the exception of materials alleged to constitute an open accumulation outside Respondent's containment on or about August 11, 2005, contain over 1 percent friable asbestos, and are therefore "asbestos-containing material" within the definition of OAR 340-248-0010(8). (Ex. A2 - Written stipulation of the parties dated November 29, 2006.) Materials alleged to constitute an open accumulation outside the containment contained 2 percent chrysotile asbestos by laboratory analysis and were also "asbestos-containing material" within the rule definition. (Ex. A7; testimony of Dottie Boyd.)

CONCLUSIONS OF LAW

1. (Violation 1) On or about August 11, 2005, Respondent failed to keep friable ACM adequately wet until those materials were disposed of in violation of OAR 340-248-0270(7)(a). That failure caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o).

2. (Violation 3) On or about August 11, 2005, Respondent openly accumulated ACWM in violation of OAR 340-248-0205(1). Respondent's accumulation caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(p).

3. (Violation 4) On or about August 11, 2005, Respondent failed to install a negative pressure enclosure around the area where friable asbestos materials were to be removed, in violation of OAR 340-248-0270(7)(d). Respondent's failure was a violation of a work practice requirement for asbestos abatement projects that caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o).

4. (Violation 5) On or about August 11, 2005, Respondent failed to comply with the final air clearance sampling requirements by not aggressively performing final air clearance sampling with an air blower or fans, in violation of OAR 340-248-0270(13)(c).

5. (Violation 6) Not proven. DEQ has not established that on or about September 11, 2005, Respondent failed to comply with final air clearance sampling requirements by not timely submitting the required air clearance sampling results to DEQ. OAR 340-248-0270(13)(d).

OPINION

"The burden of presenting evidence to support a fact or position in a contested case rests on the proponent of the fact or position." ORS 183.450(2). Here, DEQ has the burden of proving its allegations by a preponderance of the evidence. See, *Harris v. SAIF*, 292 Or 683, 690 (1982) (general rule regarding allocation of burden of proof is that the burden is on the proponent of the fact or position); *Cook v. Employment Div.*, 47 Or App 437 (1980) (in the absence of legislation adopting a different standard, the standard in administrative hearings is preponderance of the evidence). Proof by a preponderance of evidence means that the fact finder is persuaded that the facts asserted are more likely true than false. *Riley Hill General Contractors v. Tandy Corp.*, 303 Or 390 (1989).

DEQ Inspector Dottie Boyd has extensive experience in the Asbestos Program and has conducted hundreds of previous compliance inspections, including 50 to 100 popcorn texture remodel or demolition projects. She is very familiar with the specific rules applicable to the case at hand and is familiar with proper testing procedures. Ms. Boyd's testimony and documentation at hearing was persuasive and complete. I give her testimony significant weight. She testified that Respondent's Safari Motel project was "the messiest asbestos abatement project" she had ever seen.

Respondent and its owner, Jack Billings, have a reputation for excellent performance on numerous projects in Oregon and elsewhere. Mr. Billings is intimately familiar with the requirements of DEQ's Asbestos Program. However, Mr. Billings testified that he bid the Safari Motel abatement project without seeing it and that he never visited the work site during the course of the project. The workers on the project were locally hired from another contractor and their level of expertise and training is not known. They spoke primarily Spanish although Ms. Boyd testified that she conversed fluently with Mr. Bravo in English.

Ms. Boyd initially inspected the project on August 10, 2005, and found a number of violations and improper practices committed by Respondent during the performance of the project. Ms. Boyd returned the following day to re-inspect the premises. It appears that Respondent may not have expected this further inspection, because the containment had been partially removed before the mandatory air clearance testing had been done and several of DEQ's recommended corrective measures had not been performed by Respondent. Mr. Billings testified that the project was on a "time and materials" basis, so there was no need to cut corners on the project or to hurry to completion. However, because Respondent's revised Project Notification Form specified August 11, 2005, as the project completion date and the air clearance testing was scheduled for that afternoon, it is reasonable to infer that Respondent was hurrying to complete the project and the supervisor and workers may not have taken the time necessary to comply with all the applicable rules. There may also have been some communication shortcomings between Mr. Million, who speaks English, and the workers who primarily spoke Spanish.

The record reflects that Mr. Million's responses to Ms. Boyd's questions during her inspections in August 2005 were often vague and lacked information. Mr. Million told Ms. Boyd that he checked the project in the mornings and evenings. She concluded that he may not

have kept a close eye on the work at all times. I found his explanation to Ms. Boyd regarding electrical breakers failing at the exact time of her second inspection to be unpersuasive and perhaps evasive, given the evidence of the radio playing in one room and Mr. Bravo's explanation to Ms. Boyd that he had simply turned off the negative air fans. Those fans were turned on again as soon as Ms. Boyd instructed Mr. Bravo to do so. At hearing, Mr. Million denied that he ever told Ms. Boyd that the breakers had blown. However, given the subsequent effort expended by Ms. Boyd to determine whether the breakers had blown, it is more likely that Mr. Million did tell Ms. Boyd the breakers had blown out.

The evidence in the record directly contradicts Mr. Million's testimony that the project was kept wet at all times. I am not persuaded by his testimony that additional use of water on the project would create a risk of turning the waste into "mud" that would be difficult to remove and would be expensive to the client. He testified that he tested all the ACWM in the waste bags, but that he did not advise DEQ he had done the testing. Moisture meters are not typically used in asbestos abatement projects to determine whether there is adequate wetness. Ms. Boyd testified that, based on the nature of the violations, she suspended Mr. Million's DEQ supervisor certification, an action she had never taken before as a DEQ inspector. Based on the totality of the record, I give less weight to Mr. Million's testimony regarding Respondent's work on the Safari Motel project.

Issue 1: Failure to Adequately Wet ACM (Violation 1)

Applicable Law

OAR 340-248-0270 provides,

> * * * [T]he following procedures must be employed by any person who conducts or provides for the conduct of an asbestos abatement project.
>
> * * * * *
>
> (7) For friable asbestos materials being removed or stripped:
>
> (a) Adequately wet the materials to ensure that they remain wet until they are disposed of in accordance with OAR 340-248-0280.
>
> * * * * *

OAR 340-248-0010(3) provides,

> "Adequately wet" means to sufficiently mix or penetrate asbestos-containing material with liquid to prevent the release of particulate asbestos particles. An asbestos-containing material is not adequately wetted if visible emissions originate from that material. Precipitation is not an appropriate method for wetting asbestos-containing material.

Analysis

One of the critical requirements during an asbestos removal project is that the abatement contractor keep the area adequately wet while removing friable ACM and to keep the ACWM adequately wet until it is ultimately disposed of. The purpose is to keep loose asbestos fibers from escaping into the environment. Respondent argues that the term "adequately wet" is a subjective judgment. Respondent asserts that Ms. Boyd was overly rigorous in her evaluation of the Safari Motel project and misjudged the level of wetness in the materials she inspected. Mr. Million testified that he used a special instrument to test the moisture content in all of the waste bags and that the lowest level of moisture content was 18 percent, indicating to him that the material was "adequately wet."

Pursuant to the U.S. EPA *Asbestos Neshap Adequately Wet Guidance* publication, certain guidelines are provided regarding inspection procedures for compliance with rules that require as much wetting as is necessary to prevent airborne emissions of asbestos fibers until collected for disposal. The guidelines emphasize the procedures recommended are "for guidance only" and provide in part:

* * * * *

- Randomly select bags (or containers) for inspection.
- Lift the bag or container and assess its overall weight (A bag of dry ACWM can generally be lifted easily with one hand, whereas a bag filled with well-wetted material is substantially heavier.)
- If the bag or other container is transparent:
    -- Visually inspect the contents of the unopened bag for evidence of moisture (e.g., water droplets, water in the bottom of the bag, a change in the color of the material due to water).
    -- Without opening the bag, squeeze chunks of debris to ascertain whether moisture droplets are emitted.
    -- If the material appears dry or not penetrated with liquid or a wetting agent, open the bag using the additional steps described in step 9 below and collect a bulk sample of each type of material in the bag noting variations in size, patterns, color and textures.
- If the waste material is contained in an opaque bag or other container, or if the material is in a transparent bag which appears to be inadequately wetted:
    -- Carefully open the bag (in the containment area, if possible). If there is no containment area at the site, a glove bag may be used to enclose the container prior to opening it to minimize the risk of any fiber release.
    -- Examine the contents of the bag for evidence of moisture as in 8 above, and if the material appears dry or it is not fully penetrated with water or a wetting agent, collect a bulk sample.

-- Reseal the bag immediately after evaluating and sampling its contents.

(Ex. A17 - U.S. EPA *Asbestos Neshap Adequately Wet Guidance* publication.)

When DEQ Inspector Dottie Boyd inspected the Safari Motel project on August 10, 2005, she found substantial evidence of dry ACM inside the containment area. There was dust clinging to equipment, tools and the plastic walls of the containment area. She observed a worker dry sweeping popcorn waste and noticed that popcorn debris splattered on the walls and floor of the containment was also dry. The workers had a hose, sprayer, and water available, but Ms. Boyd did not observe the workers use any water during the hour she conducted her inspection that day. Ms. Boyd checked and physically tested several bags of ACWM and found the waste inside was dry. She confirmed the material was dry by adding water until the material stuck together in her hand, at which point she considered it to be "adequately wet" within the meaning of DEQ's rules. (Ex. A5, photos 21 and 22.) Her inspection procedure substantially followed the recommended procedures set forth in the U.S. EPA *Asbestos Neshap Adequately Wet Guidance* publication. (Ex. A17.)

Ms. Boyd told Supervisor Million at the conclusion of her August 10 inspection that Respondent had failed to keep the area adequately wet during removal of the ACM and that the ACWM had not been adequately wetted. She outlined for Mr. Million that additional water was needed as a corrective measure. When Ms. Boyd returned on August 11, 2005 for a re-inspection, she observed that the floor of one of the rooms was wet, but there were substantial amounts of dry ACM tracked on the wooden floor where the plastic containment had been removed, and the plastic sheeting from the walls that had been removed still had evidence of dry ACM material clinging to the plastic. Although Ms. Boyd did not remove and physically test material from the waste bags in Respondent's truck on August 11, the record substantiates that the ACWM contained in four of the ten random bags was not adequately wet within the meaning of the rule and the U.S. EPA *Asbestos Neshap Adequately Wet Guidance* publication. (Ex. A17.)

The photographs taken by Ms. Boyd on August 10 and 11, 2005, reinforce her testimony that the area inside the containment was not kept adequately wet during ACM removal and that ACWM in the waste bags had not been adequately wetted prior to ultimate disposal. (Ex. A5 and A9.) The photographs depict dust and dry debris within much of the containment. The weather at the time was very hot and it is reasonable to infer that the material dried out more quickly. However, the material still must be kept adequately wet to comply with the applicable DEQ rules. The instrument used by Mr. Million to do his testing is not typically used in an asbestos abatement setting. I am not persuaded by Mr. Million's testimony that the ACWM in all the bags was adequately wet and that the project was kept adequately wet at all times during ACM removal. Ms. Boyd's observation of significant amounts of dry ACM throughout the project on two successive days provides the basis for a reasonable inference that Respondent removed material while it was dry in order to expedite completion of the project as the completion date and the time for air clearance testing neared.

Based on a totality of the circumstances, DEQ has established by a preponderance of the evidence that Respondent failed to keep friable ACM adequately wet until those materials were disposed of, in violation of OAR 340-248-0270(7)(a).

Issue 2: Open Accumulation of ACWM (Violation 3)

Applicable Law

OAR 340-248-0205(1) provides: "No person may openly accumulate friable asbestos material or asbestos-containing waste material."

Analysis

Respondent argues that the amount of material found on the ground outside the containment area was in an amount too small to justify the sanction by DEQ. Respondent asserts that a demolition contractor working on the motel might have caused the ACWM to be on the ground outside the containment, or that other unauthorized people might have gotten inside the containment area to steal motel contents during hours Respondent was not present at the site. Respondent also disputes that the material observed by Ms. Boyd on the ground outside the containment contained asbestos.

The photographs show very small amounts of material tracked outside the containment on the pavement. DEQ's rule does not specify a minimum amount of ACWM that constitutes a violation of the rule, and DEQ has chosen to exercise its discretion to assert the violation against Respondent. The deposits appear in the photographs to have been left on the ground by shoes. On August 11, 2005, Ms. Boyd took samples of the material, which later tested positive for asbestos, in excess of 1 percent. Therefore, the deposits outside the containment fall within the parameters of OAR 340-248-0205(1).

Respondent did not provide adequate evidence that scavengers sneaked into the containment at night and tracked the material outside the containment, or that other contractors working on demolition of other portions of the motel might be responsible. Mr. Million testified that the problem with the scavengers was resolved within a week or 10 days from the beginning of the project on August 1, 2005. Mr. Million hosed down the walkway on August 10, 2005, but the following day, Ms. Boyd observed the same type of material tracked on the ground again by someone's shoes. Ms. Boyd did not observe, nor do the photographs reveal, anything of value inside the motel that would entice scavengers (who apparently had permission from the motel owner) to enter the facility for the purpose of removing those items. Respondent's witnesses testified that they did not have evidence that unauthorized people actually got inside the containment or that another contractor had left the material on the ground.

I conclude that, more likely than not, Respondent's workers moving in and out of the containment tracked the material outside the containment. Photographs show that ACWM coated the inside of the containment and the tools and the protective gear worn by the workers. There was no decontamination chamber at the entrance/exit to the containment, which is standard procedure with most asbestos abatement contractors, and the lack of a decontamination

chamber at that location increased the likelihood that contaminants would escape the containment on the shoes of the workers. It is reasonable to infer that the ACWM was loose and could be tracked outside by the workers. The photographs are very supportive of this conclusion and the inference is strengthened by the lack of attention these workers and their supervisor paid to other DEQ regulatory requirements on the project.

DEQ has established by a preponderance of the evidence that Respondent openly accumulated ACWM in violation of OAR 340-248-0205(1).

Issue 3: Failure to Install Negative Air Pressure Enclosure (Violation 4)

Applicable Law

OAR 340-248-0270 provides,

> * * * [T]he following procedures must be employed by any person who conducts or provides for the conduct of an asbestos abatement project.
>
> * * * * *
>
> (7) For friable asbestos materials being removed or stripped:
>
> * * * * *
>
> (d) Enclose the area where friable asbestos materials are to be removed with a negative pressure enclosure prior to abatement unless written approval for an alternative is granted by the Department.
>
> * * * * *

Analysis

Respondent asserts that there were four total negative air machines in operation and that negative air pressure was maintained at all times during the abatement project by at least one of the four machines. Alternatively, Respondent argues that a power outage immediately before Ms. Boyd's re-inspection on August 11, 2005 was responsible for any loss of negative air pressure.

Ms. Boyd observed four negative air machines inside the containment on August 10, 2005. Three of the machines were turned on and the fourth was not plugged in. On August 11, when she returned, she found that the three negative air machines were all turned off and the fourth had been removed from its previous location. A radio was playing in the room where the fourth machine had been located. Part of the containment had been removed and she did not see any indication of negative air pressure in the containment. Worker Joel Bravo told her he turned the negative air machines off to avoid clogging them with the encapsulant he was spraying that

day. Ms. Boyd's testimony and the short video clips she took of the negative air machines persuasively establish that the negative air machines were not operating until Ms. Boyd told Mr. Bravo the machines should be turned on again. There is no credible evidence that there was any power outage to explain why the machines were not running.

DEQ has established by a preponderance of the evidence that Respondent failed to install a negative pressure enclosure around the area where friable asbestos materials were to be removed, in violation of OAR 340-248-0270(7)(d).

Issue 4: Failure to Aggressively Perform Final Air Clearance Sampling (Violation 5)

Applicable Law

OAR 340-248-0270 provides,

> * * * [T]he following procedures must be employed by any person who conducts or provides for the conduct of an asbestos abatement project.
>
> * * * * *
>
> (13) Final Air Clearance Sampling Requirements apply to projects involving more than 160 square feet or 260 linear feet of asbestos-containing material. Before containment around such an area is removed, the person performing the abatement must have at least one air sample collected that documents that the air inside the containment has no more than 0.01 fibers per cubic centimeter of air. The air sample(s) collected may not exceed 0.01 fibers per cubic centimeter of air. The Department may grant a waiver to this section or exceptions to the following requirements upon receiving an advanced written request:
>
> * * * * *
>
> (c) Air clearance sampling inside containment areas must be aggressive and comply with the following procedures:
>
> (A) Immediately before starting the sampling pumps, direct exhaust from a minimum one horsepower forced air blower against all walls, ceilings, floors, ledges, and other surfaces in the containment;
>
> (B) Then place stationary fans in locations that will not interfere with air monitoring equipment and then directed toward the ceiling. Use one fan per 10,000 cubic feet of room space;

(C) Start sampling pumps and sample an adequate volume of air to detect concentrations of 0.01 fibers of asbestos per cubic centimeter according to NIOSH 7400 method;

(D) When sampling is completed turn off the pump and then the fan(s);

(E) As an alternative to meeting the requirements of paragraphs (A) through (D) of this subsection, air clearance sample analysis may be performed according to Transmission Electron Microscopy Analytical Methods prescribed by 40 CFR 763, Appendix A to Subpart E (Interim Transmission Electron Microscopy Analytical Methods).

Analysis

The record reflects that an inexperienced air technician from Clayton Group Services performed air sampling at the containment on the afternoon of August 11, 2005. Unfortunately, the technician did not realize she was required to use fans to stir up dust in the area during testing in order to meet the rule requirement that testing be "aggressive." Accordingly, the air clearance test results were invalid. The technician told Mr. Million at the site on August 11 that the tests were passing, and Respondent removed the rest of the containment. Clayton's air technician had also made mistakes in the test calculations on August 11. Mr. Billings reviewed the test results the following day, and alerted DEQ to the error. The containment was reestablished until proper testing could occur.

OAR 340-248-0270 applies to all persons or entities that conduct or provide for an asbestos abatement project. Clayton Services Group was Respondent's subcontractor and Respondent is ultimately responsible for errors committed by its subcontractor under the asbestos abatement rules. Respondent's project size was 8,622 square feet, which was in excess of the 160 square foot minimum size requirement under the rule. Therefore, DEQ has established by a preponderance of the evidence that Respondent failed to comply with the final air clearance sampling requirements by not aggressively performing final air clearance sampling with an air blower or fans, in violation of OAR 340-248-0270(13)(c).

Issue 5: Failure to Timely Submit Required Air Clearance Sampling Results (Violation 6)

Applicable Law

OAR 340-248-0270(13)(d) provides:

The person performing asbestos abatement projects requiring air clearance sampling must submit the clearance results to the Department on a

Department form. The clearance results must be received by the Department within 30 days after the completion date of the asbestos abatement project.

OAR 340-248-0260 provides in part:

[W]ritten notification of any asbestos abatement project must be provided to the Department on a form prepared by and available from the Department, accompanied by the appropriate fee. * * *

(1) Submit the notifications as specified in section (4) of this rule and the project notification fee to the Department at least ten days before beginning any friable asbestos abatement project and at least five days before beginning any non-friable asbestos abatement project.

* * * * *

(f) Failure to notify the Department before any changes in the scheduled starting or completion dates or other substantial changes will render the notification void.

Analysis

On August 5, 2005, Respondent performed air clearance sampling during the abatement project. DEQ argues that Respondent's revised Project Notification Form identified the completion date of the project as August 10, 2005, and that the 30 day time period in which to submit air clearance test reports began running on the completion date reflected on the form.

DEQ asserts that Respondent should have provided those test results on or before September 11, 2005. Ms. Boyd testified that she spoke with Mr. Million on September 8, 2005, and told him to submit the August 5 air clearance test results. The motel project was still underway at that time. Ms. Boyd testified that she could not remember whether she informed Mr. Million of the deadline for filing the August 5 test results. The results were received by DEQ on October 3, 2005.

Respondent argues that the Safari Motel Project was ongoing, and that the air clearance sampling results were timely submitted on October 3, 2005. Mr. Billings testified that the containment was re-established on August 12, 2005, and he promptly submitted a revised Project Notification Form to DEQ extending the completion date to August 13, 2005. He testified that abatement work on the Safari Motel project continued until September 15, 2005 and that he attempted to reopen Respondent's Project Notification Form to again revise the completion date. Ms. Boyd testified that there is no specific rule that precludes reopening a project notification form to revise a completion date, but that once a completion date expires, DEQ considers the project "completed." DEQ required respondent to file a new Project Notification Form and fee to complete the job and do some additional work at the motel. A copy of Respondent's new

Project Notification Form was not placed in the record by either party, so the specifics of the second project are not known.

OAR 340-248-0260 primarily deals with fees associated with asbestos abatement projects. DEQ rules do not otherwise contain a provision that defines "completion date." OAR 340-248-0270(13)(d) states, "results must be received by the Department within 30 days after the completion date of the asbestos abatement project." Mr. Billings provided credible and reliable testimony that Respondent's abatement project at the Safari Motel was completed on or about September 15, 2005. Under the plain meaning of OAR 340-248-0270(13)(d), the air clearance test results were due on October 15, 2005, 30 days after the actual completion date of Respondent's Safari Motel abatement project.

Based on the circumstances of the present case, I am not persuaded by DEQ's argument that OAR 340-248-0260 defines the actual completion date of Respondent's project as the "completion date" specified on Respondent's Project Notification Form. Because DEQ received the results on October 3, 2005, the Department has not established by a preponderance of the evidence that Respondent failed to timely submit the air clearance sampling results as required by OAR 340-248-0270(13)(d).

PENALTY CALCULATIONS

Respondent argues in its closing argument that the proposed penalties were incorrectly calculated. Respondent has not identified particular errors it seeks to correct.

Violation 1: Failure to Adequately Wet ACM

Applicable Law

Air quality violation classifications are provided in OAR 340-012-0054. OAR 340-012-0054(1) provides;

> Class I:
>
> * * * * *
>
> (o) Violation of a work practice requirement for asbestos abatement projects which causes a potential for public exposure to asbestos or release of asbestos into the environment.
>
> * * * * *

Ms. Boyd testified that on August 11, 2005, she observed dry asbestos-containing material in areas of the abatement project that were not adequately contained. Because the negative air fans were not operational, and the containment had been partially removed by Respondent, the containment was no longer sealed and there was a potential for dry, friable asbestos fibers to escape into the open air. Respondent's failure to maintain a proper level of

wetness caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o). Therefore, DEQ correctly determined that Violation 1 is a Class I violation.

The balance of DEQ's calculation of the penalty for Violation 1 appears to be correct. DEQ correctly determined the magnitude was "minor." DEQ properly calculated the "M" factor (mental state) as "6," for "intentional." Ms. Boyd warned Mr. Million on August 10, 2005, that ACM had not been kept adequately wet and corrective action required use of additional water. Ms. Boyd found evidence of dry ACM the following day, August 11, when she performed her re-inspection. Respondent's work crew did not comply with the corrective action and had actual knowledge that the conduct would be a violation. Respondent has not provided authorities or argument to the contrary.

The civil penalty for Violation 1 in the sum of $1,500 is affirmed.

Violation 2: Failure to Have Minimum of One Viewing Window

The civil penalty has been stipulated by the parties as $825.

Violation 3: Open Accumulation of ACWM

Applicable Law

OAR 340-012-0054(1) provides;

Class I:

* * * * *

(p) Storage or accumulation of friable asbestos material or asbestos-containing waste material from an asbestos abatement project which causes a potential for public exposure to asbestos or release of asbestos into the environment.

* * * * *

The record reflects that Respondent's workers tracked a very small amount of ACWM onto the ground outside the containment. Because this was open to the air, there was a potential for public exposure to asbestos or a release of asbestos into the environment and the Department correctly calculated this as a Class I violation of minor magnitude. The "M" factor was based on DEQ's finding that Respondent was negligent, and this was a correct determination. The balance of DEQ's calculation appears to be correct. Respondent has not provided authorities or argument to the contrary.

The civil penalty for Violation 3 in the amount of $1,800 is affirmed.

Violation 4: Failure to Install Negative Air Pressure Enclosure

Because asbestos fibers could reach open air from the containment due to removal of a portion of the containment and a lack of negative air pressure within the remaining portion of the containment, Respondent's failure was a violation of a work practice requirement for asbestos abatement projects that caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o). DEQ correctly determined this violation to be a Class I violation. Ms. Boyd's testimony and the photographs she took of the abatement project on August 11, 2005, reflect that the area of concern exceeded 160 square feet. DEQ correctly determined this was a violation of "major" magnitude. Because the mental state of Respondent's employees was intentional, the "M" factor of "6" was correctly calculated by DEQ. The balance of DEQ's calculation appears to be correct. Respondent has not provided authorities or argument to the contrary.

The civil penalty for Violation 4 in the amount of $8,400 is affirmed.

Violation 5: Failure to Aggressively Perform Final Air Clearance Sampling

DEQ correctly determined that the improper testing performed by Clayton Services Group on August 11, 2005, was a Class II violation because it is an "otherwise unclassified violation" under OAR 340-012-0053(2)(a). Because the project exceeded 160 square feet, the magnitude of the violation was "major." Clayton's performance was indeed negligent, so the "M" factor of "2" was correctly calculated based on negligence. The balance of DEQ's calculation appears to be correct. Respondent has not provided authorities or argument to the contrary.

The civil penalty for Violation 4 in the amount of $3,600 is affirmed.

Violation 6: Failure to Timely Submit Required Air Clearance Sampling Results

This violation was not established by DEQ.

Violation 7: Failure to Require Independent, Certified Party For Air Clearance Sampling

The civil penalty has been stipulated by the parties as $1,910.

Violation 8: Improper Removal of Containment Before Air Clearance Sampling

Alleged violation was dismissed by DEQ.

ORDER

I propose the DEQ issue the following order:

Respondent Alpine Abatement Associates, Inc. is subject to a civil penalty in the amount of $18,035.

Todd C. Ainsworth
Administrative Law Judge
Office of Administrative Hearings

ISSUANCE AND MAILING DATE: March 23, 2007

APPEAL RIGHTS

If you are not satisfied with this decision, you have the right to have the decision reviewed by the Oregon Environmental Quality Commission. To have the decision reviewed, you must file a "Petition for Review" within 30 days of the date this order is served on you as provided in Oregon Administrative Rule (OAR) 340-011-0132(1) and (2). The Petition for Review must be filed with:

Environmental Quality Commission
c/o Stephanie Hallock, Director, DEQ
811 SW Sixth Avenue
Portland, OR 97204.

Within 30 days of filing the Petition for Review, you must also file exceptions and a brief as is provided in OAR 340-011-0132(3). If the petition, exceptions and brief are filed in a timely manner, the Commission will set the matter for oral argument and notify you of the time and place of the Commission's meeting. The requirements for filing a petition, exceptions and briefs are set out in OAR 340-011-0132.

Unless you timely and appropriately file a Petition for Review as set forth above, this Proposed Order becomes the Final Order of the Environmental Quality Commission 30 days from the date of service on you of this Proposed Order. If you wish to appeal the Final Order, you have 60 days from the date the Proposed Order becomes the Final Order to file a petition for review with the Oregon Court of Appeals. See ORS 183.400 et. seq.

APPENDIX A
LIST OF EXHIBITS CITED

Ex. A1:	The parties' written stipulation to Violations 2, 7, and 8.	(Page 1)
Ex. A2:	The parties' written stipulation regarding friable asbestos.	(Page 7)
Ex. A3:	DEQ Project Notification Form, filed July 18, 2005.	(Page 3)
Ex. A4:	Revised DEQ Project Notification Form, filed August 2, 2005.	(Page 3)
Ex. A5:	DEQ photographs, taken August 10, 2005.	(Page 4, 11)
Ex. A7:	Asbestos laboratory analysis results.	(Page 5)
Ex. A8:	DEQ photographs (2), taken August 11, 2005.	(Page 5)
Ex. A9:	DEQ photographs (12 pages), taken August 11, 2005.	(Page 5, 6, 11)
Ex. A12:	Memorandum of Dottie Boyd, September 1, 2005.	(Page 3, 4, 6)
Ex. A14:	Respondent's air clearance samples from August 5, 2005.	(Page 7)
Ex. A17:	EPA publication on wetness standards.	(Page 11)
Ex. A18:	DEQ DVD of negative air fans, taken August 11, 2005.	(Page 5)
Ex. R3:	Respondent's letter to DEQ, dated September 26, 2005.	(Page 3)

CERTIFICATE OF SERVICE

I certify that on March 23, 2007, I served the attached Proposed and Final Order by mailing certified and/or first class mail, in a sealed envelope, with first class postage prepaid, a copy thereof addressed as follows:

MARK G REINECKE
ATTORNEY AT LAW
591 SW MILL VIEW WAY
PO BOX 1151
BEND OR 97709-1151

BY FIRST CLASS AND CERTIFIED MAIL
CERTIFIED MAIL RECEIPT # 7006 0100 0002 2811 0804

BRYAN SMITH
OREGON DEQ
OFFICE OF COMPLIANCE AND ENFORCEMENT
811 SW 6TH AVE
PORTLAND OR 97204

BY FIRST CLASS MAIL

DEBORAH NESBIT
OREGON DEQ
OFFICE OF COMPLIANCE AND ENFORCEMENT
811 SW 6TH AVE
PORTLAND OR 97204

BY FIRST CLASS MAIL

Pamela Arcari

Pamela Arcari, Administrative Specialist
Office of Administrative Hearings

State of Oregon
Department of Environmental Quality Memorandum

Date: July 30, 2007

To: Environmental Quality Commission

From: Stephanie Hallock, Director S. Hallock

Subject: Agenda Item D, Action Item: Request for Dismissal of Contested Case No. AQ/AB-WR-05-187 regarding Alpine Abatement Associates, Inc. August 16, 2007 Environmental Quality Commission (Commission) meeting

Appeal to EQC

On April 20, 2007, Alpine Abatement Associates, Inc. filed a Petition for Commission Review (Attachment B) of a Proposed and Final Order (Attachment C) assessing the company a civil penalty of $18,035 for several asbestos-related violations.

The Commission's rules require that a party appealing a proposed order must file a brief and exceptions within 30 days of filing the Petition for Review, and that if the party wishes an extension of that time, the party must file a request for extension of time before the original deadline passes. OAR 340-011-0575(5)(a) and OAR 340-011-0575(5)(e). In this case, Alpine Abatement Associates, Inc.'s brief and exceptions were due on May 21, 2007, but Alpine Abatement, Inc. did not file a request for extension until May 24, 2007

The Commission's rules allow it to dismiss a petition for review when the exceptions and brief were not filed in a timely manner. OAR 340-011-0575(5)(f). The rules also prevent the Commission from considering any substantive arguments that were not properly raised in timely exceptions, so dismissal is ordinarily the only practical means for dealing with a petition for review that was not accompanied by the timely filing of exceptions.

A representative of the Department will be present at the August 16, 2007, Commission meeting to answer any questions you may have about this request. The Commission's legal counsel will also be available to address any question relating to the Commission's legal authority with respect to this matter.

EQC Authority

The Commission has the authority to resolve this matter under OAR 340-011-0575.

Alternatives The Commission may:

1. Dismiss the Petition for Commission Review leaving the Proposed and Final Order in place.
2. Schedule the case for review at a future Commission meeting.

Attachments

A. Proposed Order for Assessment of Civil Penalty, dated March 23, 2007.
B. Petition for Commission Review of the Proposed and Final Order, dated April 20, 2007.
C. Request for Extension, dated May 24, 2007.
D. OAR 340-011-0575

Available Upon Request OAR Chapter 340, Division 11; ORS Chapter 468

Report Prepared By:

Jane K. Hickman, Administrator
Office of Compliance and Enforcement
Phone: (503) 229-5555

BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF OREGON
for the
THE ENVIRONMENTAL QUALITY COMMISSION

IN THE MATTER OF:	) **PROPOSED AND FINAL ORDER**
	)
ALPINE ABATEMENT ASSOCIATES, INC., an Oregon corporation,	) OAH Case No.: 129544) Agency Case No.: AQ/AB-WR-05-187
	)
Respondent	) Yamhill County

HISTORY OF THE CASE

On March 23, 2006, the Department of Environmental Quality for the State of Oregon (DEQ) issued a Notice of Violation and Assessment of Civil Penalty to Alpine Abatement Associates, Inc. (Respondent). The notice alleged eight violations: (1) Respondent failed to keep friable asbestos-containing materials (ACM) adequately wet until disposed of, in violation of OAR 340-248-0270(7)(a); (2) Respondent failed to have at least one viewing window installed in its negative pressure enclosure at its facility, in violation of OAR 340-248-0270(7)(e); (3) Respondent openly accumulated asbestos-containing waste material (ACWM), in violation of OAR 340-248-0205(1); (4) Respondent failed to enclose the area where friable asbestos material removal was occurring with a negative pressure enclosure, in violation of OAR 340-248-0270(7)(d); (5) Respondent failed to comply with final air clearance sampling requirements by not performing aggressive sampling in the clearance area, in violation of OAR 340-248-0270(13)(c); (6) Respondent failed to comply with final air clearance sampling requirements by failing to timely submit air clearance sampling results, in violation of OAR 340-248-0270(13)(d); (7) Respondent failed to comply with final air clearance sampling requirements by allowing a non-certified employee to perform sampling and submit results to DEQ, in violation of OAR 340-248-0270(13)(a); and (8) Respondent removed portions of its containment around an asbestos project, in violation of OAR 340-248-0270(13).

On April 19, 2006, Respondent requested a hearing. On July 24, 2006, the DEQ referred the hearing request to the Office of Administrative Hearings (OAH). Administrative Law Judge (ALJ) Todd C. Ainsworth was assigned to preside at hearing. A telephonic prehearing conference was convened on September 18, 2006, to clarify the issues, review stipulations of the parties, discuss hearing procedures and evidentiary matters, and to schedule a hearing date. A second telephonic prehearing conference was convened on October 30, 2006, to further discuss evidentiary matters and to schedule a hearing date. The new hearing date was scheduled for December 5, 2006. On December 4, 2006, the hearing was rescheduled due to a fire at DEQ's Bend, Oregon, office on or about December 1, 2006. The hearing was rescheduled to January 16, 2007.

Prior to the hearing, the parties resolved several of the issues. With respect to Violation 2, the parties stipulated that Respondent failed to have at least one viewing window installed in its negative air enclosure. With respect to Violation 7, the parties stipulated that Respondent failed to require a properly certified independent party to perform air clearance sampling. By stipulation of the parties, DEQ withdrew Violation 8, regarding Respondent's alleged removal of its containment around an asbestos abatement project. (Ex. A1.)

A hearing was held on January 16, 2007, in Bend, Oregon. Respondent appeared by and through Attorney Mark G. Reinecke. Respondent's president, Jack R. Billings, appeared as the authorized representative of Respondent, and testified on behalf of Respondent. Also testifying on behalf of Respondent were Quinton D. Million (Respondent's Field Superintendent), M. Teresa Smith (Citizen's Bank commercial lender), and Waldo Farnham, of Farnham Electic Company. DEQ was represented by Bryan Smith, Environmental Law Specialist. Testifying on behalf of DEQ was Dottie Boyd, DEQ Air Quality Asbestos Program Compliance Inspector.

The record remained open to accommodate DEQ's submission of a DVD video clip and the U.S. Environmental Protection Agency's *Asbestos HESHAP Adequately Wet Guidance* publication, and for the parties' submission of written closing arguments. The record closed on February 7, 2007, on receipt of all those items by ALJ Ainsworth. Following the hearing, the parties stipulated that the penalty for Violation 2 shall be $825 and the penalty for Violation 7 shall be $1,910. (Written closing arguments of the parties.)

ISSUES

1. (Violation 1) On or about August 11, 2005, did Respondent fail to keep friable ACM adequately wet until those materials were disposed of in violation of OAR 340-248-0270(7)(a)? If so, did that failure cause a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o)?

2. (Violation 3) On or about August 11, 2005, did Respondent openly accumulate ACWM in violation of OAR 340-248-0205(1)? If so, did Respondent's accumulation cause a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(p)?

3. (Violation 4) On or about August 11, 2005, did Respondent fail to install a negative pressure enclosure around the area where friable asbestos materials were to be removed, in violation of OAR 340-248-0270(7)(d)? If so, was Respondent's failure a violation of a work practice requirement for asbestos abatement projects that caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o)?

4. (Violation 5) On or about August 11, 2005, did Respondent fail to comply with the final air clearance sampling requirements by not aggressively performing final air clearance sampling with an air blower or fans, in violation of OAR 340-248-0270(13)(c)?

5. (Violation 6) On or about September 11, 2005, did Respondent fail to comply with the final air clearance sampling requirements by not timely submitting the required air clearance sampling results to DEQ, in violation of OAR 340-248-0270(13)(d)?

EVIDENTIARY RULINGS

Exhibits A1 through A16, offered by DEQ, were admitted into the record. Respondent's objection to Exhibit A12 (memorandum of Dottie Boyd) on grounds the document was cumulative, was overruled. The other exhibits were admitted without objection. Exhibits R1 through R3, offered by Respondent, were admitted into the record without objection.

During the hearing, DEQ requested that it be allowed to submit two additional exhibits after the hearing and DEQ's request was allowed. DEQ thereafter submitted with its written closing argument a DVD containing several short video clips taken by DEQ Inspector Dottie Boyd and a nine-page publication prepared by the U.S. Environmental Protection Agency entitled, *Asbestos NESHAP Adequately Wet Guidance*. The EPA publication has been marked Exhibit A17 and the DVD has been marked Exhibit A18. Both exhibits are hereby admitted into the record.

FINDINGS OF FACT

1. Respondent is an experienced asbestos abatement contractor situated in Bend, Oregon. Jack R. Billings is the President and owner of Respondent. Respondent has been in business since 1988 and has completed hundreds of asbestos abatement projects inside and outside Oregon. Respondent is very familiar with DEQ's asbestos abatement requirements. Respondent successfully bid to perform an asbestos abatement project at the Safari Motel at 321 North Highway 99W in McMinnville, Oregon. The motel was dilapidated and had been in disrepair for two years. Mr. Billings did not visit the site before making the bid. The asbestos abatement project involved removal of asbestos-containing ceiling texture material and sheet vinyl inside the motel prior to demolition of the motel by another contractor. Respondent retained Quinton Million as supervisor for the project and Respondent hired employees locally from another contractor to perform the work. Those employees were Hispanic and spoke Spanish as their first language. Mr. Billings did not visit the project as it was being done. (Ex. A12, R3; testimony of Jack Billings.)

2. Respondent sent an ASN-1 friable asbestos abatement Project Notification Form to DEQ regarding the Safari Motel. DEQ received the Project Notification Form on July 19, 2005. The Project Notification Form specified removal of 1,500 square feet of ceiling texture and sheet vinyl and identified the project start date as August 1, 2005 and the completion date as August 5, 2005. (Ex. A3.) On or about August 2, 2005, Respondent provided DEQ with a revised Project Notification Form increasing the quantity of removal to 8,622 square feet and identifying the new completion date as August 10, 2005. Respondent's Project Notification Form identified the method of removal as "fullscale/wet/neg[ative] pressure." (Ex. A4.)

3. DEQ Inspector Dottie Boyd has worked in DEQ's asbestos program for 10 years, and has conducted 500 to 800 asbestos compliance inspections during that time. On August 10,

2005, Ms. Boyd performed a compliance inspection of Respondent's work at the Safari Motel project. Although the completion date was listed as August 10, Respondent was still performing work on the project. At the time of the inspection, the weather had been hot and dry for several days. Respondent had erected a negative air containment enclosure around the areas being abated. Ms. Boyd initially noticed two violations regarding lack of a viewing window and lack of contractor name on generator labels on bags of abated material. She also noticed material tracked on the ground at the entranceway into the lower containment area, which appeared to have been tracked out of the containment by workers. Mr. Million advised Ms. Boyd that workers were decontaminating outside the containment area and he hosed the material off the walkway. Ms. Boyd took a sample of this material, but testing revealed no asbestos content in the sample. (Ex. A12; testimony of Dottie Boyd.)

4. On August 10, 2005, Ms. Boyd donned protective gear and entered the containment area for approximately one hour. There were several workers in the area. Ms. Boyd observed that popcorn debris had been removed and there was very dry debris on the floor, stuck to the plastic containment walls, and coating the equipment in the area. One of the workers was dry sweeping popcorn debris on the floor, which was an inappropriate method of removal. Ms. Boyd saw a hose, water bucket and an airless sprayer, but she did not see any of the equipment or water used during the time she was in the containment. She observed three negative air machines in operation within the containment. A fourth negative air machine in Room 39 was not hooked up. She found several closed clear asbestos waste bags, which were light when pickup up. This indicated to Ms. Boyd that the waste material inside had not been wetted. She wetted and tested the material and confirmed for herself the waste material in the bags was dry. Ms. Boyd did not see any motel furniture or other similar items of value inside the containment, although she saw some boxes covered by plastic sheet. (Ex. A5 (photographs), A12; testimony of Dottie Boyd.)

5. Respondent's employees did not see any motel furnishings of value in the containment area or have any information that unauthorized parties had actually entered the containment area after August 9, 2005. (Testimony of Quinton Million and Teresa Smith.)

6. On August 10, 2005, Ms. Boyd completed her inspection and advised Mr. Million that she had observed several violations: failure to keep friable ACM adequately wet during removal, no viewing window, lack of generator name on waste labels, ACWM not adequately wet and a potential for open accumulation of ACWM outside the containment area on the walkway. Ms. Boyd also told Mr. Million that she did not think Respondent would pass an aggressive air clearance testing, based on the dryness of the material inside the containment area. She explained to Mr. Million that the air clearance testing was a work practice requirement and that if Respondent removed the containment without a valid aggressive air clearance, Respondent would be in violation of DEQ regulations. Mr. Million told Ms. Boyd that he inspected the project in the mornings and in the evenings by going inside and looking at the progress at those times. Ms. Boyd concluded the inspection, but planned to return the following day to re-inspect the project. (Ex. A12; testimony of Dottie Boyd.)

7. On August 11, 2005, Ms. Boyd re-inspected Respondent's project at the Safari Motel. The outside temperature at the time was very warm. When she arrived, she observed a small

amount of popcorn texture material on the entryway outside the containment area at the same location Mr. Million washed off material the previous day. Respondent did not have a decontamination chamber at the entrance to the containment. Ms. Boyd took photographs of the material on the walkway and took samples of the material for testing. (Ex. A8, A9; testimony of Dottie Boyd.) The material had been tracked onto the entryway area outside the containment by Respondent's workers exiting the containment while working on the project. Laboratory analysis later determined the sample contained 2 percent chrysotile asbestos. (Ex. A7; testimony of Dottie Boyd.) Ms. Boyd also saw a push broom outside the door of the containment, in the open air. The handle of the broom was covered with dust and there was popcorn texture debris in the bristles of the broom. (Ex. A8, A12; testimony of Dottie Boyd.)

8. During her August 11, 2005, inspection, Ms. Boyd again put on protective gear and went into Respondent's project area. She observed that asbestos was still being removed in one of the rooms and the floor of that room was wet. However, popcorn debris on the floor of the front hallway was dry. Some of the containment had been removed by Respondent and air clearance testing had not been done yet. A substantial portion of the plastic sheeting of the containment had been taken down, rolled up, and placed in a waste bag. The rolled up plastic sheeting in the waste bag was still coated with dust from the project. The wood floors had dry popcorn texture debris tracked on them where the plastic sheeting on the floor had been removed. Portions of the containment area were open to the outside air and there were holes in some of the remaining plastic sheeting that compromised the containment by allowing direct access to outside air. During her one-hour inspection inside the containment, Ms. Boyd observed water spray equipment and a hose, but did not see Respondent's employees actually use the equipment or apply any water as they worked. (Ex. A9 - photographs; testimony of Dottie Boyd.)

9. During the August 11, 2005 inspection, Ms. Boyd also observed that the three negative air machines were turned off and there was no negative pressure in the area where active abatement and cleanup was occurring. She observed that the plastic wall sheeting was not pulled inward, as it would be if negative air pressure existed. The fourth negative air machine had been removed from Room 39, and a worker had a radio playing in that room as the worker prepared to spray encapsulant in the room. The room was approximately 2,000 square feet in area. The worker, Joel Bravo, told Ms. Boyd that he had turned off the negative air machines because the encapsulant he sprayed would clog up the machines. He stated he was preparing for air clearance testing. Ms. Boyd took photographs and a short video of the non-operational negative air machines. (Ex. A9, A18.) Mr. Bravo asked Ms. Boyd if he should turn the machines back on, and she told him that he should do that. Mr. Bravo, or someone at his direction, turned the negative air machines on minutes later. Because negative air pressure was not maintained, there was a potential for the fibers to be released into the outside air when stirred up by people moving in and out of the work area. (Testimony of Dottie Boyd.)

10. Ms. Boyd has conducted between 50 and 100 other compliance inspections on popcorn texture remodel or demolition projects. On August 11, 2005, Ms. Boyd requested that Mr. Million allow her to examine waste bags of ACWM from the project that were located in Respondent's truck. Million selected ten bags at random and Boyd inspected the material inside the bags without opening the bags. Four of the bags had no signs of moisture in them and were

very light when picked up. There were no condensation drops inside those four bags. Based on her training and experience, Ms. Boyd concluded there was no moisture in the four bags. The other six bags had some evidence of condensation inside, although Ms. Boyd could not determine whether the contents of those six bags was "adequately wet" within the meaning of the rules. She did not take bulk samples of the material in the waste bags. Respondent's name did not appear on the generator labels on the bags. (Ex. A9 - photographs; A12; testimony of Dottie Boyd.)

11. Prior to leaving Respondent's project on August 11, 2005, Ms. Boyd advised Mr. Million that she had observed several violations on the site, including failure to maintain negative air pressure in the containment, allowing asbestos-containing material to be tracked outside by workers, and failure to keep the floor of the containment and ACWM in waste bags adequately wet. When asked by Ms. Boyd why the plastic had been removed from the containment, Mr. Million did not provide an answer. Mr. Million advised that air clearance testing was scheduled that afternoon at 1:00 p.m. with Clayton Group Services. (Testimony of Dottie Boyd.)

12. Following Ms. Boyd's inspection of the ten waste bags, and after she left the project, Mr. Million tested the waste bags in the truck with a moisture meter and concluded there was at least 18 percent moisture in the bags. He did not directly advise Ms. Boyd of this test, but relayed the information to Mr. Billings. (Testimony of Quinton Million.) Moisture meters are not used in asbestos abatement procedures by DEQ or other agencies regulating asbestos remediation. (Testimony of Dottie Boyd and Jack Billings.)

13. At 3:00 p.m. on August 11, 2005, Mr. Billings telephoned Ms. Boyd and they discussed the various violations. Mr. Billings advised Ms. Boyd that Mr. Million told him an electrical breaker blew just prior to Ms. Boyd's arrival to conduct her inspection on August 11, 2005. Ms. Boyd subsequently checked with the property owner and other businesses at the site and determined that electrical breakers had not blown near the time of her inspection on August 11, 2005. (Testimony of Dottie Boyd.)

14. On August 11, 2005, Respondent's subcontractor, Clayton Group Services (Clayton), performed air testing at the project. The Clayton air technician failed to use fans to stir up loose particles during the testing, as required by DEQ rules. Therefore, Clayton did not conduct the testing in accordance with DEQ standards requiring "aggressive" air clearance testing, and the test results were invalid. In addition, the technician made calculation errors during her testing. Immediately following the tests that afternoon, the Clayton technician erroneously gave Respondent verbal advice at the project site that the test results met DEQ clean air requirements. In response to Clayton's advice, Respondent removed the rest of the containment. (Testimony of Dottie Boyd and Mr. Billings.) Mr. Billings discovered the mistake in calculations the following day and contacted Ms. Boyd. Mr. Billings immediately instructed Mr. Million to re-install the containment so the air clearance testing could be properly completed. The containment was re-installed on August 12, 2005, and Respondent faxed a revised Project Notification Form to DEQ amending the completion date to August 13, 2005. Respondent did not file additional revisions to the Project Notification Form. (Ex. A12; testimony of Dottie Boyd and Jack Billings.)

15. Respondent completed its asbestos abatement project at the Safari Motel on September 15, 2005. The owner of the property required that Respondent re-do some of its work during that time. Respondent was required to file a second Project Notification Form with DEQ for work performed at the Safari Motel between August 12, 2005 and September 15, 2005. Air Clearance Sample Results from testing performed on August 5, 2005 were received by DEQ on October 3, 2005. (Ex. A14; testimony of Dottie Boyd.)

16. Based on the observed violations at the Safari Motel project, Ms. Boyd suspended Quinton Million's DEQ supervisor's certificate. She had never suspended a project supervisor before. (Testimony of Dottie Boyd.)

17. All materials described in DEQ's violation allegations, with the exception of materials alleged to constitute an open accumulation outside Respondent's containment on or about August 11, 2005, contain over 1 percent friable asbestos, and are therefore "asbestos-containing material" within the definition of OAR 340-248-0010(8). (Ex. A2 - Written stipulation of the parties dated November 29, 2006.) Materials alleged to constitute an open accumulation outside the containment contained 2 percent chrysotile asbestos by laboratory analysis and were also "asbestos-containing material" within the rule definition. (Ex. A7; testimony of Dottie Boyd.)

CONCLUSIONS OF LAW

1. (Violation 1) On or about August 11, 2005, Respondent failed to keep friable ACM adequately wet until those materials were disposed of in violation of OAR 340-248-0270(7)(a). That failure caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o).

2. (Violation 3) On or about August 11, 2005, Respondent openly accumulated ACWM in violation of OAR 340-248-0205(1). Respondent's accumulation caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(p).

3. (Violation 4) On or about August 11, 2005, Respondent failed to install a negative pressure enclosure around the area where friable asbestos materials were to be removed, in violation of OAR 340-248-0270(7)(d). Respondent's failure was a violation of a work practice requirement for asbestos abatement projects that caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o).

4. (Violation 5) On or about August 11, 2005, Respondent failed to comply with the final air clearance sampling requirements by not aggressively performing final air clearance sampling with an air blower or fans, in violation of OAR 340-248-0270(13)(c).

5. (Violation 6) Not proven. DEQ has not established that on or about September 11, 2005, Respondent failed to comply with final air clearance sampling requirements by not timely submitting the required air clearance sampling results to DEQ. OAR 340-248-0270(13)(d).

OPINION

"The burden of presenting evidence to support a fact or position in a contested case rests on the proponent of the fact or position." ORS 183.450(2). Here, DEQ has the burden of proving its allegations by a preponderance of the evidence. See, *Harris v. SAIF*, 292 Or 683, 690 (1982) (general rule regarding allocation of burden of proof is that the burden is on the proponent of the fact or position); *Cook v. Employment Div.*, 47 Or App 437 (1980) (in the absence of legislation adopting a different standard, the standard in administrative hearings is preponderance of the evidence). Proof by a preponderance of evidence means that the fact finder is persuaded that the facts asserted are more likely true than false. *Riley Hill General Contractors v. Tandy Corp.*, 303 Or 390 (1989).

DEQ Inspector Dottie Boyd has extensive experience in the Asbestos Program and has conducted hundreds of previous compliance inspections, including 50 to 100 popcorn texture remodel or demolition projects. She is very familiar with the specific rules applicable to the case at hand and is familiar with proper testing procedures. Ms. Boyd's testimony and documentation at hearing was persuasive and complete. I give her testimony significant weight. She testified that Respondent's Safari Motel project was "the messiest asbestos abatement project" she had ever seen.

Respondent and its owner, Jack Billings, have a reputation for excellent performance on numerous projects in Oregon and elsewhere. Mr. Billings is intimately familiar with the requirements of DEQ's Asbestos Program. However, Mr. Billings testified that he bid the Safari Motel abatement project without seeing it and that he never visited the work site during the course of the project. The workers on the project were locally hired from another contractor and their level of expertise and training is not known. They spoke primarily Spanish although Ms. Boyd testified that she conversed fluently with Mr. Bravo in English.

Ms. Boyd initially inspected the project on August 10, 2005, and found a number of violations and improper practices committed by Respondent during the performance of the project. Ms. Boyd returned the following day to re-inspect the premises. It appears that Respondent may not have expected this further inspection, because the containment had been partially removed before the mandatory air clearance testing had been done and several of DEQ's recommended corrective measures had not been performed by Respondent. Mr. Billings testified that the project was on a "time and materials" basis, so there was no need to cut corners on the project or to hurry to completion. However, because Respondent's revised Project Notification Form specified August 11, 2005, as the project completion date and the air clearance testing was scheduled for that afternoon, it is reasonable to infer that Respondent was hurrying to complete the project and the supervisor and workers may not have taken the time necessary to comply with all the applicable rules. There may also have been some communication shortcomings between Mr. Million, who speaks English, and the workers who primarily spoke Spanish.

The record reflects that Mr. Million's responses to Ms. Boyd's questions during her inspections in August 2005 were often vague and lacked information. Mr. Million told Ms. Boyd that he checked the project in the mornings and evenings. She concluded that he may not

have kept a close eye on the work at all times. I found his explanation to Ms. Boyd regarding electrical breakers failing at the exact time of her second inspection to be unpersuasive and perhaps evasive, given the evidence of the radio playing in one room and Mr. Bravo's explanation to Ms. Boyd that he had simply turned off the negative air fans. Those fans were turned on again as soon as Ms. Boyd instructed Mr. Bravo to do so. At hearing, Mr. Million denied that he ever told Ms. Boyd that the breakers had blown. However, given the subsequent effort expended by Ms. Boyd to determine whether the breakers had blown, it is more likely that Mr. Million did tell Ms. Boyd the breakers had blown out.

The evidence in the record directly contradicts Mr. Million's testimony that the project was kept wet at all times. I am not persuaded by his testimony that additional use of water on the project would create a risk of turning the waste into "mud" that would be difficult to remove and would be expensive to the client. He testified that he tested all the ACWM in the waste bags, but that he did not advise DEQ he had done the testing. Moisture meters are not typically used in asbestos abatement projects to determine whether there is adequate wetness. Ms. Boyd testified that, based on the nature of the violations, she suspended Mr. Million's DEQ supervisor certification, an action she had never taken before as a DEQ inspector. Based on the totality of the record, I give less weight to Mr. Million's testimony regarding Respondent's work on the Safari Motel project.

Issue 1: Failure to Adequately Wet ACM (Violation 1)

Applicable Law

OAR 340-248-0270 provides,

* * * [T]he following procedures must be employed by any person who conducts or provides for the conduct of an asbestos abatement project.

* * * * *

(7) For friable asbestos materials being removed or stripped:

(a) Adequately wet the materials to ensure that they remain wet until they are disposed of in accordance with OAR 340-248-0280.

* * * * *

OAR 340-248-0010(3) provides,

"Adequately wet" means to sufficiently mix or penetrate asbestos-containing material with liquid to prevent the release of particulate asbestos particles. An asbestos-containing material is not adequately wetted if visible emissions originate from that material. Precipitation is not an appropriate method for wetting asbestos-containing material.

Analysis

One of the critical requirements during an asbestos removal project is that the abatement contractor keep the area adequately wet while removing friable ACM and to keep the ACWM adequately wet until it is ultimately disposed of. The purpose is to keep loose asbestos fibers from escaping into the environment. Respondent argues that the term "adequately wet" is a subjective judgment. Respondent asserts that Ms. Boyd was overly rigorous in her evaluation of the Safari Motel project and misjudged the level of wetness in the materials she inspected. Mr. Million testified that he used a special instrument to test the moisture content in all of the waste bags and that the lowest level of moisture content was 18 percent, indicating to him that the material was "adequately wet."

Pursuant to the U.S. EPA *Asbestos Neshap Adequately Wet Guidance* publication, certain guidelines are provided regarding inspection procedures for compliance with rules that require as much wetting as is necessary to prevent airborne emissions of asbestos fibers until collected for disposal. The guidelines emphasize the procedures recommended are "for guidance only" and provide in part:

* * * * *

- Randomly select bags (or containers) for inspection.
- Lift the bag or container and assess its overall weight (A bag of dry ACWM can generally be lifted easily with one hand, whereas a bag filled with well-wetted material is substantially heavier.)
- If the bag or other container is transparent:
    - -- Visually inspect the contents of the unopened bag for evidence of moisture (e.g., water droplets, water in the bottom of the bag, a change in the color of the material due to water).
    - -- Without opening the bag, squeeze chunks of debris to ascertain whether moisture droplets are emitted.
    - -- If the material appears dry or not penetrated with liquid or a wetting agent, open the bag using the additional steps described in step 9 below and collect a bulk sample of each type of material in the bag noting variations in size, patterns, color and textures.
- If the waste material is contained in an opaque bag or other container, or if the material is in a transparent bag which appears to be inadequately wetted:
    - -- Carefully open the bag (in the containment area, if possible). If there is no containment area at the site, a glove bag may be used to enclose the container prior to opening it to minimize the risk of any fiber release.
    - -- Examine the contents of the bag for evidence of moisture as in 8 above, and if the material appears dry or it is not fully penetrated with water or a wetting agent, collect a bulk sample.

-- Reseal the bag immediately after evaluating and sampling its contents.

(Ex. A17 - U.S. EPA *Asbestos Neshap Adequately Wet Guidance* publication.)

When DEQ Inspector Dottie Boyd inspected the Safari Motel project on August 10, 2005, she found substantial evidence of dry ACM inside the containment area. There was dust clinging to equipment, tools and the plastic walls of the containment area. She observed a worker dry sweeping popcorn waste and noticed that popcorn debris splattered on the walls and floor of the containment was also dry. The workers had a hose, sprayer, and water available, but Ms. Boyd did not observe the workers use any water during the hour she conducted her inspection that day. Ms. Boyd checked and physically tested several bags of ACWM and found the waste inside was dry. She confirmed the material was dry by adding water until the material stuck together in her hand, at which point she considered it to be "adequately wet" within the meaning of DEQ's rules. (Ex. A5, photos 21 and 22.) Her inspection procedure substantially followed the recommended procedures set forth in the U.S. EPA *Asbestos Neshap Adequately Wet Guidance* publication. (Ex. A17.)

Ms. Boyd told Supervisor Million at the conclusion of her August 10 inspection that Respondent had failed to keep the area adequately wet during removal of the ACM and that the ACWM had not been adequately wetted. She outlined for Mr. Million that additional water was needed as a corrective measure. When Ms. Boyd returned on August 11, 2005 for a re-inspection, she observed that the floor of one of the rooms was wet, but there were substantial amounts of dry ACM tracked on the wooden floor where the plastic containment had been removed, and the plastic sheeting from the walls that had been removed still had evidence of dry ACM material clinging to the plastic. Although Ms. Boyd did not remove and physically test material from the waste bags in Respondent's truck on August 11, the record substantiates that the ACWM contained in four of the ten random bags was not adequately wet within the meaning of the rule and the U.S. EPA *Asbestos Neshap Adequately Wet Guidance* publication. (Ex. A17.)

The photographs taken by Ms. Boyd on August 10 and 11, 2005, reinforce her testimony that the area inside the containment was not kept adequately wet during ACM removal and that ACWM in the waste bags had not been adequately wetted prior to ultimate disposal. (Ex. A5 and A9.) The photographs depict dust and dry debris within much of the containment. The weather at the time was very hot and it is reasonable to infer that the material dried out more quickly. However, the material still must be kept adequately wet to comply with the applicable DEQ rules. The instrument used by Mr. Million to do his testing is not typically used in an asbestos abatement setting. I am not persuaded by Mr. Million's testimony that the ACWM in all the bags was adequately wet and that the project was kept adequately wet at all times during ACM removal. Ms. Boyd's observation of significant amounts of dry ACM throughout the project on two successive days provides the basis for a reasonable inference that Respondent removed material while it was dry in order to expedite completion of the project as the completion date and the time for air clearance testing neared.

Based on a totality of the circumstances, DEQ has established by a preponderance of the evidence that Respondent failed to keep friable ACM adequately wet until those materials were disposed of, in violation of OAR 340-248-0270(7)(a).

Issue 2: Open Accumulation of ACWM (Violation 3)

Applicable Law

OAR 340-248-0205(1) provides: "No person may openly accumulate friable asbestos material or asbestos-containing waste material."

Analysis

Respondent argues that the amount of material found on the ground outside the containment area was in an amount too small to justify the sanction by DEQ. Respondent asserts that a demolition contractor working on the motel might have caused the ACWM to be on the ground outside the containment, or that other unauthorized people might have gotten inside the containment area to steal motel contents during hours Respondent was not present at the site. Respondent also disputes that the material observed by Ms. Boyd on the ground outside the containment contained asbestos.

The photographs show very small amounts of material tracked outside the containment on the pavement. DEQ's rule does not specify a minimum amount of ACWM that constitutes a violation of the rule, and DEQ has chosen to exercise its discretion to assert the violation against Respondent. The deposits appear in the photographs to have been left on the ground by shoes. On August 11, 2005, Ms. Boyd took samples of the material, which later tested positive for asbestos, in excess of 1 percent. Therefore, the deposits outside the containment fall within the parameters of OAR 340-248-0205(1).

Respondent did not provide adequate evidence that scavengers sneaked into the containment at night and tracked the material outside the containment, or that other contractors working on demolition of other portions of the motel might be responsible. Mr. Million testified that the problem with the scavengers was resolved within a week or 10 days from the beginning of the project on August 1, 2005. Mr. Million hosed down the walkway on August 10, 2005, but the following day, Ms. Boyd observed the same type of material tracked on the ground again by someone's shoes. Ms. Boyd did not observe, nor do the photographs reveal, anything of value inside the motel that would entice scavengers (who apparently had permission from the motel owner) to enter the facility for the purpose of removing those items. Respondent's witnesses testified that they did not have evidence that unauthorized people actually got inside the containment or that another contractor had left the material on the ground.

I conclude that, more likely than not, Respondent's workers moving in and out of the containment tracked the material outside the containment. Photographs show that ACWM coated the inside of the containment and the tools and the protective gear worn by the workers. There was no decontamination chamber at the entrance/exit to the containment, which is standard procedure with most asbestos abatement contractors, and the lack of a decontamination

chamber at that location increased the likelihood that contaminants would escape the containment on the shoes of the workers. It is reasonable to infer that the ACWM was loose and could be tracked outside by the workers. The photographs are very supportive of this conclusion and the inference is strengthened by the lack of attention these workers and their supervisor paid to other DEQ regulatory requirements on the project.

DEQ has established by a preponderance of the evidence that Respondent openly accumulated ACWM in violation of OAR 340-248-0205(1).

Issue 3: Failure to Install Negative Air Pressure Enclosure (Violation 4)

Applicable Law

OAR 340-248-0270 provides,

> * * * [T]he following procedures must be employed by any person who conducts or provides for the conduct of an asbestos abatement project.
>
> * * * * *
>
> (7) For friable asbestos materials being removed or stripped:
>
> * * * * *
>
> (d) Enclose the area where friable asbestos materials are to be removed with a negative pressure enclosure prior to abatement unless written approval for an alternative is granted by the Department.
>
> * * * * *

Analysis

Respondent asserts that there were four total negative air machines in operation and that negative air pressure was maintained at all times during the abatement project by at least one of the four machines. Alternatively, Respondent argues that a power outage immediately before Ms. Boyd's re-inspection on August 11, 2005 was responsible for any loss of negative air pressure.

Ms. Boyd observed four negative air machines inside the containment on August 10, 2005. Three of the machines were turned on and the fourth was not plugged in. On August 11, when she returned, she found that the three negative air machines were all turned off and the fourth had been removed from its previous location. A radio was playing in the room where the fourth machine had been located. Part of the containment had been removed and she did not see any indication of negative air pressure in the containment. Worker Joel Bravo told her he turned the negative air machines off to avoid clogging them with the encapsulant he was spraying that

day. Ms. Boyd's testimony and the short video clips she took of the negative air machines persuasively establish that the negative air machines were not operating until Ms. Boyd told Mr. Bravo the machines should be turned on again. There is no credible evidence that there was any power outage to explain why the machines were not running.

DEQ has established by a preponderance of the evidence that Respondent failed to install a negative pressure enclosure around the area where friable asbestos materials were to be removed, in violation of OAR 340-248-0270(7)(d).

Issue 4: Failure to Aggressively Perform Final Air Clearance Sampling (Violation 5)

Applicable Law

OAR 340-248-0270 provides,

> * * * [T]he following procedures must be employed by any person who conducts or provides for the conduct of an asbestos abatement project.
>
> * * * * *
>
> (13) Final Air Clearance Sampling Requirements apply to projects involving more than 160 square feet or 260 linear feet of asbestos-containing material. Before containment around such an area is removed, the person performing the abatement must have at least one air sample collected that documents that the air inside the containment has no more than 0.01 fibers per cubic centimeter of air. The air sample(s) collected may not exceed 0.01 fibers per cubic centimeter of air. The Department may grant a waiver to this section or exceptions to the following requirements upon receiving an advanced written request:
>
> * * * * *
>
> (c) Air clearance sampling inside containment areas must be aggressive and comply with the following procedures:
>
> (A) Immediately before starting the sampling pumps, direct exhaust from a minimum one horsepower forced air blower against all walls, ceilings, floors, ledges, and other surfaces in the containment;
>
> (B) Then place stationary fans in locations that will not interfere with air monitoring equipment and then directed toward the ceiling. Use one fan per 10,000 cubic feet of room space;

(C) Start sampling pumps and sample an adequate volume of air to detect concentrations of 0.01 fibers of asbestos per cubic centimeter according to NIOSH 7400 method;

(D) When sampling is completed turn off the pump and then the fan(s);

(E) As an alternative to meeting the requirements of paragraphs (A) through (D) of this subsection, air clearance sample analysis may be performed according to Transmission Electron Microscopy Analytical Methods prescribed by 40 CFR 763, Appendix A to Subpart E (Interim Transmission Electron Microscopy Analytical Methods).

Analysis

The record reflects that an inexperienced air technician from Clayton Group Services performed air sampling at the containment on the afternoon of August 11, 2005. Unfortunately, the technician did not realize she was required to use fans to stir up dust in the area during testing in order to meet the rule requirement that testing be "aggressive." Accordingly, the air clearance test results were invalid. The technician told Mr. Million at the site on August 11 that the tests were passing, and Respondent removed the rest of the containment. Clayton's air technician had also made mistakes in the test calculations on August 11. Mr. Billings reviewed the test results the following day, and alerted DEQ to the error. The containment was reestablished until proper testing could occur.

OAR 340-248-0270 applies to all persons or entities that conduct or provide for an asbestos abatement project. Clayton Services Group was Respondent's subcontractor and Respondent is ultimately responsible for errors committed by its subcontractor under the asbestos abatement rules. Respondent's project size was 8,622 square feet, which was in excess of the 160 square foot minimum size requirement under the rule. Therefore, DEQ has established by a preponderance of the evidence that Respondent failed to comply with the final air clearance sampling requirements by not aggressively performing final air clearance sampling with an air blower or fans, in violation of OAR 340-248-0270(13)(c).

Issue 5: Failure to Timely Submit Required Air Clearance Sampling Results (Violation 6)

Applicable Law

OAR 340-248-0270(13)(d) provides:

The person performing asbestos abatement projects requiring air clearance sampling must submit the clearance results to the Department on a

Department form. The clearance results must be received by the Department within 30 days after the completion date of the asbestos abatement project.

OAR 340-248-0260 provides in part:

[W]ritten notification of any asbestos abatement project must be provided to the Department on a form prepared by and available from the Department, accompanied by the appropriate fee. * * *

(1) Submit the notifications as specified in section (4) of this rule and the project notification fee to the Department at least ten days before beginning any friable asbestos abatement project and at least five days before beginning any non-friable asbestos abatement project.

* * * * *

(f) Failure to notify the Department before any changes in the scheduled starting or completion dates or other substantial changes will render the notification void.

Analysis

On August 5, 2005, Respondent performed air clearance sampling during the abatement project. DEQ argues that Respondent's revised Project Notification Form identified the completion date of the project as August 10, 2005, and that the 30 day time period in which to submit air clearance test reports began running on the completion date reflected on the form.

DEQ asserts that Respondent should have provided those test results on or before September 11, 2005. Ms. Boyd testified that she spoke with Mr. Million on September 8, 2005, and told him to submit the August 5 air clearance test results. The motel project was still underway at that time. Ms. Boyd testified that she could not remember whether she informed Mr. Million of the deadline for filing the August 5 test results. The results were received by DEQ on October 3, 2005.

Respondent argues that the Safari Motel Project was ongoing, and that the air clearance sampling results were timely submitted on October 3, 2005. Mr. Billings testified that the containment was re-established on August 12, 2005, and he promptly submitted a revised Project Notification Form to DEQ extending the completion date to August 13, 2005. He testified that abatement work on the Safari Motel project continued until September 15, 2005 and that he attempted to reopen Respondent's Project Notification Form to again revise the completion date. Ms. Boyd testified that there is no specific rule that precludes reopening a project notification form to revise a completion date, but that once a completion date expires, DEQ considers the project "completed." DEQ required respondent to file a new Project Notification Form and fee to complete the job and do some additional work at the motel. A copy of Respondent's new

Project Notification Form was not placed in the record by either party, so the specifics of the second project are not known.

OAR 340-248-0260 primarily deals with fees associated with asbestos abatement projects. DEQ rules do not otherwise contain a provision that defines "completion date." OAR 340-248-0270(13)(d) states, "results must be received by the Department within 30 days after the completion date of the asbestos abatement project." Mr. Billings provided credible and reliable testimony that Respondent's abatement project at the Safari Motel was completed on or about September 15, 2005. Under the plain meaning of OAR 340-248-0270(13)(d), the air clearance test results were due on October 15, 2005, 30 days after the actual completion date of Respondent's Safari Motel abatement project.

Based on the circumstances of the present case, I am not persuaded by DEQ's argument that OAR 340-248-0260 defines the actual completion date of Respondent's project as the "completion date" specified on Respondent's Project Notification Form. Because DEQ received the results on October 3, 2005, the Department has not established by a preponderance of the evidence that Respondent failed to timely submit the air clearance sampling results as required by OAR 340-248-0270(13)(d).

PENALTY CALCULATIONS

Respondent argues in its closing argument that the proposed penalties were incorrectly calculated. Respondent has not identified particular errors it seeks to correct.

Violation 1: Failure to Adequately Wet ACM

Applicable Law

Air quality violation classifications are provided in OAR 340-012-0054. OAR 340-012-0054(1) provides;

> Class I:
>
> * * * * *
>
> (o) Violation of a work practice requirement for asbestos abatement projects which causes a potential for public exposure to asbestos or release of asbestos into the environment.
>
> * * * * *

Ms. Boyd testified that on August 11, 2005, she observed dry asbestos-containing material in areas of the abatement project that were not adequately contained. Because the negative air fans were not operational, and the containment had been partially removed by Respondent, the containment was no longer sealed and there was a potential for dry, friable asbestos fibers to escape into the open air. Respondent's failure to maintain a proper level of

wetness caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o). Therefore, DEQ correctly determined that Violation 1 is a Class I violation.

The balance of DEQ's calculation of the penalty for Violation 1 appears to be correct. DEQ correctly determined the magnitude was "minor." DEQ properly calculated the "M" factor (mental state) as "6," for "intentional." Ms. Boyd warned Mr. Million on August 10, 2005, that ACM had not been kept adequately wet and corrective action required use of additional water. Ms. Boyd found evidence of dry ACM the following day, August 11, when she performed her re-inspection. Respondent's work crew did not comply with the corrective action and had actual knowledge that the conduct would be a violation. Respondent has not provided authorities or argument to the contrary.

The civil penalty for Violation 1 in the sum of $1,500 is affirmed.

Violation 2: Failure to Have Minimum of One Viewing Window

The civil penalty has been stipulated by the parties as $825.

Violation 3: Open Accumulation of ACWM

Applicable Law

OAR 340-012-0054(1) provides;

Class I:

* * * * *

(p) Storage or accumulation of friable asbestos material or asbestos-containing waste material from an asbestos abatement project which causes a potential for public exposure to asbestos or release of asbestos into the environment.

* * * * *

The record reflects that Respondent's workers tracked a very small amount of ACWM onto the ground outside the containment. Because this was open to the air, there was a potential for public exposure to asbestos or a release of asbestos into the environment and the Department correctly calculated this as a Class I violation of minor magnitude. The "M" factor was based on DEQ's finding that Respondent was negligent, and this was a correct determination. The balance of DEQ's calculation appears to be correct. Respondent has not provided authorities or argument to the contrary.

The civil penalty for Violation 3 in the amount of $1,800 is affirmed.

Violation 4: Failure to Install Negative Air Pressure Enclosure

Because asbestos fibers could reach open air from the containment due to removal of a portion of the containment and a lack of negative air pressure within the remaining portion of the containment, Respondent's failure was a violation of a work practice requirement for asbestos abatement projects that caused a potential for public exposure to asbestos or release of asbestos into the environment within the meaning of OAR 340-012-0054(1)(o). DEQ correctly determined this violation to be a Class I violation. Ms. Boyd's testimony and the photographs she took of the abatement project on August 11, 2005, reflect that the area of concern exceeded 160 square feet. DEQ correctly determined this was a violation of "major" magnitude. Because the mental state of Respondent's employees was intentional, the "M" factor of "6" was correctly calculated by DEQ. The balance of DEQ's calculation appears to be correct. Respondent has not provided authorities or argument to the contrary.

The civil penalty for Violation 4 in the amount of $8,400 is affirmed.

Violation 5: Failure to Aggressively Perform Final Air Clearance Sampling

DEQ correctly determined that the improper testing performed by Clayton Services Group on August 11, 2005, was a Class II violation because it is an "otherwise unclassified violation" under OAR 340-012-0053(2)(a). Because the project exceeded 160 square feet, the magnitude of the violation was "major." Clayton's performance was indeed negligent, so the "M" factor of "2" was correctly calculated based on negligence. The balance of DEQ's calculation appears to be correct. Respondent has not provided authorities or argument to the contrary.

The civil penalty for Violation 4 in the amount of $3,600 is affirmed.

Violation 6: Failure to Timely Submit Required Air Clearance Sampling Results

This violation was not established by DEQ.

Violation 7: Failure to Require Independent, Certified Party For Air Clearance Sampling

The civil penalty has been stipulated by the parties as $1,910.

Violation 8: Improper Removal of Containment Before Air Clearance Sampling

Alleged violation was dismissed by DEQ.

ORDER

I propose the DEQ issue the following order:

Respondent Alpine Abatement Associates, Inc. is subject to a civil penalty in the amount of $18,035.

Todd C. Ainsworth
Administrative Law Judge
Office of Administrative Hearings

ISSUANCE AND MAILING DATE: March 23, 2007

APPEAL RIGHTS

If you are not satisfied with this decision, you have the right to have the decision reviewed by the Oregon Environmental Quality Commission. To have the decision reviewed, you must file a "Petition for Review" within 30 days of the date this order is served on you as provided in Oregon Administrative Rule (OAR) 340-011-0132(1) and (2). The Petition for Review must be filed with:

Environmental Quality Commission
c/o Stephanie Hallock, Director, DEQ
811 SW Sixth Avenue
Portland, OR 97204.

Within 30 days of filing the Petition for Review, you must also file exceptions and a brief as is provided in OAR 340-011-0132(3). If the petition, exceptions and brief are filed in a timely manner, the Commission will set the matter for oral argument and notify you of the time and place of the Commission's meeting. The requirements for filing a petition, exceptions and briefs are set out in OAR 340-011-0132.

Unless you timely and appropriately file a Petition for Review as set forth above, this Proposed Order becomes the Final Order of the Environmental Quality Commission 30 days from the date of service on you of this Proposed Order. If you wish to appeal the Final Order, you have 60 days from the date the Proposed Order becomes the Final Order to file a petition for review with the Oregon Court of Appeals. See ORS 183.400 et. seq.

APPENDIX A
LIST OF EXHIBITS CITED

Ex. A1:	The parties' written stipulation to Violations 2, 7, and 8.	(Page 1)
Ex. A2:	The parties' written stipulation regarding friable asbestos.	(Page 7)
Ex. A3:	DEQ Project Notification Form, filed July 18, 2005.	(Page 3)
Ex. A4:	Revised DEQ Project Notification Form, filed August 2, 2005.	(Page 3)
Ex. A5:	DEQ photographs, taken August 10, 2005.	(Page 4, 11)
Ex. A7:	Asbestos laboratory analysis results.	(Page 5)
Ex. A8:	DEQ photographs (2), taken August 11, 2005.	(Page 5)
Ex. A9:	DEQ photographs (12 pages), taken August 11, 2005.	(Page 5, 6, 11)
Ex. A12:	Memorandum of Dottie Boyd, September 1, 2005.	(Page 3, 4, 6)
Ex. A14:	Respondent's air clearance samples from August 5, 2005.	(Page 7)
Ex. A17:	EPA publication on wetness standards.	(Page 11)
Ex. A18:	DEQ DVD of negative air fans, taken August 11, 2005.	(Page 5)
Ex. R3:	Respondent's letter to DEQ, dated September 26, 2005.	(Page 3)

CERTIFICATE OF SERVICE

I certify that on March 23, 2007, I served the attached Proposed and Final Order by mailing certified and/or first class mail, in a sealed envelope, with first class postage prepaid, a copy thereof addressed as follows:

MARK G REINECKE
ATTORNEY AT LAW
591 SW MILL VIEW WAY
PO BOX 1151
BEND OR 97709-1151

BY FIRST CLASS AND CERTIFIED MAIL
CERTIFIED MAIL RECEIPT # 7006 0100 0002 2811 0804

BRYAN SMITH
OREGON DEQ
OFFICE OF COMPLIANCE AND ENFORCEMENT
811 SW 6TH AVE
PORTLAND OR 97204

BY FIRST CLASS MAIL

DEBORAH NESBIT
OREGON DEQ
OFFICE OF COMPLIANCE AND ENFORCEMENT
811 SW 6TH AVE
PORTLAND OR 97204

BY FIRST CLASS MAIL

Pamela Arcari, Administrative Specialist
Office of Administrative Hearings

COPY

I Certify this to be a true copy

BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF OREGON
for the
ENVIRONMENTAL QUALITY COMMISSION

IN THE MATTER OF : ALPINE ABATEMENT ASSOCIATES, INC., an Oregon corporation, Respondent.	PETITION FOR COMMISSION REVIEW PURSUANT TO OAR 340-011-0575 OAH Case No.: 129544 Agency Case No.: AQ/AB-WR-05-187 Commission Review No.: Yamhill County

PETITION FOR COMMISSION REVIEW

Pursuant to OAR 340-011-0575, Petitioner requests commission review of the Proposed and Final Order dated March 23, 2007.

The parties to this review are:

1. Alpine Abatement Associates, Inc. (Respondent)
P.O. Box 1557
Bend, OR 97709

Represented by: Mark G. Reinecke; OSB #91407
Bryant Lovlien & Jarvis PC
591 SW Mill View Way
Bend, OR 97702
(541) 382-4331

2. Department of Environmental Quality

Designated Agency Representative:
Bryan Smith
Oregon Dept. of Environmental Quality
2146 NE 4TH Avenue
Bend, OR 97701

DATED THIS 20 day of April 2007.

BRYANT, LOVLIEN & JARVIS,

MARK G. REINECKE, OSB 91407
Of Attorneys for Respondent
Alpine Abatement Associates, Inc
591 SW Mill View Way
Bend, OR 97702
(541) 382-4331

BRYANT, LOVLIEN & JARVIS, PC
ATTORNEYS AT LAW, ESTABLISHED 1915
591 SW Mill View Way PO Box 1151 Bend, Oregon 97709-1151 (541) 382-4331 fax (541) 389-3386 WWW.BLJLAWYERS.COM

CERTIFICATE OF FILING

I certify that on April 20, 2007, I filed a true copy of this petition and an original of this petition for commission review with the Environmental Quality Commission:

Environmental Quality Commission
c/o Stephanie Hallock, Director, DEQ
811 SW Sixth Street
Portland, OR 97204
(503)-229-6762

By Facsimile and United States Postal Service, certified mail, return receipt requested.

MARK G. REINECKE, OSB 91407
Of Attorneys for Respondent
Alpine Abatement Associates, Inc.

CERTIFICATE OF SERVICE

I certify that on April ___, 2007 I served a true copy of this petition for commission review on:

Bryan Smith
Oregon Dept. of Environmental Quality
2146 NE 4TH Avenue
Bend, OR 97701

By United States Postal Service, first class mail.

MARK G. REINECKE, OSB 91407
Of Attorneys for Respondent
Alpine Abatement Associates, Inc.

BRYANT, LOVLIEN & JARVIS, PC
ATTORNEYS AT LAW, ESTABLISHED 1915
591 SW Mill View Way PO Box 1151 Bend, Oregon 97709-1151 (541) 382-4331 fax (541) 389-3386 www.bljlawyers.com

BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF OREGON
for the
ENVIRONMENTAL QUALITY COMMISSION

IN THE MATTER OF : ALPINE ABATEMENT ASSOCIATES, INC., an Oregon corporation, Respondent.	PETITION FOR COMMISSION REVIEW PURSUANT TO OAR 340-011-0575 OAH Case No.: 129544 Agency Case No.: AQ/AB-WR-05-187 Commission Review No.: Yamhill County

REQUEST FOR EXTENSION

Pursuant to OAR 340-011-0575(5)(e), Petitioner requests an extension of time to file the Exceptions and Brief pursuant to Section (5)(a). The Petition for Commission Review was previously filed.

DATED THIS 24 day of May, 2007.

BRYANT, LOVLIEN & JARVIS,

MARK G. REINECKE, OSB 91407
Of Attorneys for Respondent
Alpine Abatement Associates, Inc
591 SW Mill View Way
Bend, OR 97702
(541) 382-4331

BRYANT, LOVLIEN & JARVIS, PC
ATTORNEYS AT LAW, ESTABLISHED 1915
591 SW Mill View Way PO Box 1151 Bend, Oregon 97709-1151 (541) 382-4331 fax (541) 389-3386 WWW.BLJLAWYERS.COM

CERTIFICATE OF FILING

I certify that on May 24, 2007, I filed a true copy of this Request for Extension to file the Exceptions and Brief and an original of this Request for Extension to File the Exceptions and Brief with the Environmental Quality Commission:

Environmental Quality Commission
c/o Stephanie Hallock, Director, DEQ
811 SW Sixth Street
Portland, OR 97204
(503)-229-6762

By Facsimile and United States Postal Service, certified mail, return receipt requested.

MARK G. REINECKE, OSB 91407
Of Attorneys for Respondent
Alpine Abatement Associates, Inc.

CERTIFICATE OF SERVICE

I certify that on May ___, 2007 I served a true copy of this Request for Extension to File the Exceptions and Brief on:

Bryan Smith
Oregon Dept. of Environmental Quality
2146 NE 4TH Avenue
Bend, OR 97701

By United States Postal Service, first class mail.

MARK G. REINECKE, OSB 91407
Of Attorneys for Respondent
Alpine Abatement Associates, Inc.

BRYANT, LOVLIEN & JARVIS, PC
ATTORNEYS AT LAW, ESTABLISHED 1915
591 SW Mill View Way PO Box 1151 Bend, Oregon 97709-1151 (541) 382-4331 fax (541) 389-3386 WWW.BLJLAWYERS.COM

Agenda Item D, Action Item: Request for Dismissal of Contested Case No. AQ/AB-WR-05-187 regarding Alpine Abatement Associates, Inc.

Attachment D

340-011-0575

Review of Proposed Orders in Contested Cases

(1) For purposes of this rule, filing means receipt in the office of the director or other office of the department.

(2) Following the close of the record for a contested case hearing, the administrative law judge will issue a proposed order. The administrative law judge will serve the proposed order on each participant.

(3) Commencement of Review by the Commission: The proposed order will become final unless a participant or a member of the commission files, with the commission, a Petition for Commission Review within 30 days of service of the proposed order. The timely filing of a Petition is a jurisdictional requirement and cannot be waived. Any participant may file a petition whether or not another participant has filed a petition.

(4) Contents of the Petition for Commission Review. A petition must be in writing and need only state the participant's or a commissioner's intent that the commission review the proposed order. Each petition and subsequent brief must be captioned to indicate the participant filing the document and the type of document (for example: Respondents Exceptions and Brief; Department's Answer to Respondent's Exceptions and Brief).

(5) Procedures on Review:

(a) Exceptions and Brief: Within 30 days from the filing of a petition, the participant(s) filing the petition must file written exceptions and brief. The exceptions must specify those findings and conclusions objected to, and also include proposed alternative findings of fact, conclusions of law, and order with specific references to the parts of the record upon which the participant relies. The brief must include the arguments supporting these alternative findings of fact, conclusions of law and order. Failure to take an exception to a finding or conclusion in the brief, waives the participant's ability to later raise that exception.

(b) Answering Brief: Each participant, except for the participant(s) filing that exceptions and brief, will have 30 days from the date of filing of the exceptions and brief under subsection (5)(a), in which to file an answering brief.

(c) Reply Brief: If an answering brief is filed, the participant(s) who filed a petition will have 20 days from the date of filing of the answering brief under subsection (5)(b), in which to file a reply brief.

(d) Briefing on Commission Invoked Review: When one or more members of the commission wish to review the proposed order, and no participant has timely filed a Petition, the chair of the commission will promptly notify the participants of the issue that the commission desires the participants to brief. The participants must limit their briefs to those issues. The chair of the commission will also establish the schedule for filing of briefs. When the commission wishes to review the proposed order and a participant also requested review, briefing will follow the schedule set forth in subsections (a), (b), and (c) of this section.

(e) Extensions: The commission or director may extend any of the time limits contained in section (5) of this rule. Each extension request must be in writing and filed with the commission before the expiration of the time limit. Any request for an extension may be granted or denied in whole or in part.

(f) Dismissal: The commission may dismiss any petition, upon motion of any participant or on its own motion, if the participant(s) seeking review fails to timely file the exceptions or brief required under subsection (5)(a) of this rule. A motion to dismiss made by a participant must be filed within 45 days after the filing of the Petition. At the time of dismissal, the commission will also enter a final order upholding the proposed order.

(g) Oral Argument: Following the expiration of the time allowed the participants to present exceptions and briefs, the matter will be scheduled for oral argument before the commission.

(6) Additional Evidence: A request to present additional evidence must be submitted by motion and must be accompanied by a statement showing good cause for the failure to present the evidence to the administrative law judge. The motion must accompany the brief filed under subsection (5)(a) or (b) of this rule. If the commission grants the motion or decides on its own motion that additional evidence is necessary, the matter will be remanded to an administrative law judge for further proceedings.

(7) Scope of Review: The commission may substitute its judgment for that of the administrative law judge in making any particular finding of fact, conclusion of law, or order except as limited by OAR 137-003-0655 and 137-003-0665.

(8) Service of documents on other participants: All documents required to be filed with the commission under this rule must also be served upon each participant in the contested case hearing. Service can be completed by personal service, certified mail or regular mail.

Stat. Auth.: ORS 183.341 & 468.020
Stats. Implemented: ORS 183.460, 183,464 & ORS 183.470

Hist.: DEQ 78, f. 9-6-74, ef. 9-25-74; DEQ 115, f. & ef. 7-6-76; DEQ 25-1979, f. & ef. 7-5-79; DEQ 7-1988, f. & cert. ef. 5-6-88; DEQ 1-2000(Temp), f. 2-15-00, cert. ef. 2-15-00 thru 7-31-00; DEQ 9-2000, f. & cert. ef. 7-21-00; Renumbered from 340-011-0132 by DEQ 18-2003, f. & cert. ef. 12-12-03

State of Oregon
Department of Environmental Quality Memorandum

Date: July 23, 2007

To: Environmental Quality Commission

From: Stephanie Hallock, Director S. Hallock

Subject: Agenda Item F, Action Item: Delegation of Lane Regional Air Protection Agency Funding Authority
August 16, 2007 EQC Meeting

Why this is Important

The Department of Environmental Quality (DEQ) wishes to formalize the long-standing and efficient practice of funding Lane Regional Air Protection Agency (LRAPA) annual operating costs through a DEQ budget line item.

Department Recommendation

DEQ recommends that the Environmental Quality Commission (EQC) delegate to the Director the EQC's authority under ORS 468A.175 to (1) consider requests from LRAPA for state funding, (2) receive notice of LRAPA's applications for federal financial assistance, and (3) determine whether to distribute funds to regional air quality authorities such as LRAPA.

Background

ORS Chapter 468A authorizes the EQC to fund a portion of the operating costs of regional air quality authorities. In the past, the EQC allocated funding among three regional authorities: Columbia-Willamette (Portland area), Mid-Willamette Valley (Salem area) and LRAPA. The three authorities applied to the EQC for state funds, and also notified the EQC of any applications for federal financial assistance. Direct EQC consideration was important, as the three authorities essentially competed for their allocation. Now, however, LRAPA is the sole remaining regional authority. Because there is no competition for funding, DEQ includes LRAPA funding as a line item in the DEQ budget, which is subject to EQC oversight. DEQ requests delegation to clarify that DEQ has legal authority to consider LRAPA applications for state funds, receive notice of LRAPA applications for federal financial assistance, and provide state funding to LRAPA under ORS 468A.175 according to DEQ's current practice.

EQC Action Alternatives

As an alternative to DEQ's recommendation, the EQC could retain the authority and responsibility of considering LRAPA's annual funding requests, receiving notice of LRAPA's applications for federal financial assistance, and determining whether to grant state funds to LRAPA.

Attachments

A. ORS 468A.175
B. EQC Order delegating authority to the Director

Approved:

Section: Margaret Oliphant

Division:

Report Prepared By: Margaret Oliphant

Phone: 503-229-5687

ATTACHMENT A

468A.175 State aid. (1) Subject to the availability of funds therefor:

(a) Any air quality control program conforming to the rules of the Environmental Quality Commission and operated by not more than one unit of local government shall be eligible for state aid in an amount not to exceed 30 percent of the locally funded annual operating cost thereof, not including any federal funds to which the program may be entitled.

(b) Any air quality control program exercising functions operated by a regional authority shall be eligible for state aid in an amount not to exceed 50 percent of the locally funded annual operating cost thereof, not including any federal funds to which the program may be entitled.

(2) Applications for state funds shall be made to the commission and funds shall be made available under subsection (1) of this section according to the determination of the commission. In making its determination, the commission shall consider:

(a) The adequacy and effectiveness of the air quality control program.

(b) The geographic and demographic factors in the territory under the program.

(c) The particular problems of the territory under the program.

(3) In order to qualify for any state aid and subject to the availability of funds therefor, the local government or the regional authority must submit all applications for federal financial assistance to the commission before submitting them to the federal government.

(4) When certified by the commission, claims for state aid shall be presented for payment in the manner that other claims against the state are paid. [Formerly 449.920 and then 468.575]

ATTACHMENT B

DELEGATION ORDER

By this order, the Environmental Quality Commission hereby delegates its authority under ORS 468A.175 to the Director of the Department of Environmental Quality.

_____
Date

_____
Lynn Hampton
Chair, Environmental Quality Commission

Field Burning Recommendations

At the Environmental Quality Commission's meeting on June 22, Lane County and others requested that the Commission use its existing statutory authority to restrict or prohibit field burning. The County made four specific requests:

Request #1: Request for the Commission to order a temporary emergency cessation of field burning in the Willamette Valley Counties (Multnomah, Washington, Clackamas, Marion, Polk, Yamhill, Linn, Benton and Lane Counties) for the 2007 and 2008 burning seasons, pursuant to ORS 468A.610(9).

Analysis: Under this statute, the Commission may ban field burning for the remainder of the current burning season in the Willamette Valley Counties if it make findings of fact that field burning contributes to extreme danger to public health or safety in the Willamette Valley Counties and determines that the extreme danger constitutes an emergency.

Discussion: While Lane County and others have submitted substantial documentation of the health effects of short-term exposure to fine particulate, making the required findings of extreme danger would involve a comprehensive analysis of all available information, not just information presented by parties who support a finding of extreme danger. The Department believes that this analysis would be very complex, would require substantial resources that are not available in agency budgets, and could not be completed before the end of the current burning season.

Department Recommendation: If the Commission wishes to determine if a finding of extreme danger is supportable, the Commission could direct the Department to seek additional resources to evaluate the health effects of field burning smoke as part its next legislative budget request. In the interim, Oregon State University plans to conduct a study of the health effects of field burning (with funding of approximately $90,000 provided by the Grass Seed Council), which could inform this analysis. While the Department's recommendation would not provide the immediate relief requested, it could provide the Commission with the information needed to make findings under ORS 468A.610(9).

Request #2: Request for the Commission to prohibit issuance of burn permits pursuant to ORS 468A.610(8)(b).

Analysis: The Commission may reduce or eliminate the issuance of burn permits after holding public hearings and, between January 1 and June 1, make findings of fact that "other reasonable and economically feasible, environmentally acceptable alternatives to the practice of annual open field burning have been developed." Because the statute requires the findings to be made between January 1 and June 1, the earliest that burn permits could be restricted would be the 2008 burning season.

Discussion: As with request #1, this request depends on the Commission making findings of fact. While there has been substantial progress over the last decade in developing alternatives to field burning, the Department does not have adequate information to determine if the alternatives are reasonable, economically feasible or environmentally acceptable to further restrict or ban field burning.

Department Recommendation: If the Commission wishes to determine if the number of acres burned could be reduced, the Commission could direct the Department to work with stakeholders to evaluate the alternatives. The Commission could also direct the Department to seek additional resources to evaluate the feasibility and environmental acceptability of alternatives as part of its next legislative budget request. Depending on the outcome of these efforts, the Commission could consider reducing the acres burned by rule between January 1 and June 1 of 2008, or recommending legislation to the 2009 legislature. While this approach would not provide an immediate solution, it could provide a long term solution to the concerns raised.

Request #3: Request for the Commission to prohibit or restrict field burning by rule as necessary to carry out the policy of ORS 468A.010 pursuant to ORS 468A.595(1).

Analysis: Subsequent to the adoption of ORS 468A.595(1), the legislature adopted ORS 468A.610(8)(b), which lays out the process for reducing acreage burned. Therefore, if the Commission desires to reduce the acreage burned, it must follow the procedures described under Request #2. If the Commission wishes to restrict field burning without limiting the acreage burned (e.g. time or manner of burning), it may do so after consulting with Oregon State University (OSU) and determining that the restrictions are consistent with the various policy objectives of ORS 468A.010.

Discussion: The City of Eugene noted that, in addition to concerns about the acres burned, they had concerns about the timing of burning during the Olympic trials to be held in Eugene.

Department Recommendation: The Department recommends that the Commission request the Oregon Department of Agriculture to prohibit burning during Olympic trials. The Department also recommends that the Commission direct the Department and the Oregon Department of Agriculture, in consultation with OSU, to evaluate the potential for improvements to the Smoke Management Program. In addition, the Department recommends that the Commission proceed as under Request #2 in order to secure a long-term solution.

Request #4: Request for the Commission to adopt by rule a more rapid, phased reduction of field burning in the Willamette Valley Counties pursuant to ORS 468A.595(2).

Analysis: Since the legislative phase down is complete, and the Commission has not adopted any other phase-down under ORS 468A.595(1), the Commission cannot order a more rapid phase down under ORS 468A.595(2).

Department Recommendation: The Department recommends that the Commission inform Lane County that this statute can not be used to further restrict field burning at this time.

Agenda Item G – introduction

Internal Policy

- At our June 22nd meeting, Lane County requested that the Commission ban field burning for the remainder of this season and next, and made several other requests to restrict field burning. This request was not a formal petition for rulemaking, but rather a request to exercise our authority. They presented us with substantial information supporting their request. The City of Eugene supported the request, noting that Olympic trials will be held in Eugene in 2008. The Western Environmental Law Center and others also supported the request. Among those opposing the request were representatives of the Oregon Grass Seed Council.

- After that meeting, we requested and have received advice from the Oregon Department of Justice regarding our authority to restrict field burning. We have also received recommendations from the Department of Environmental Quality to consider.

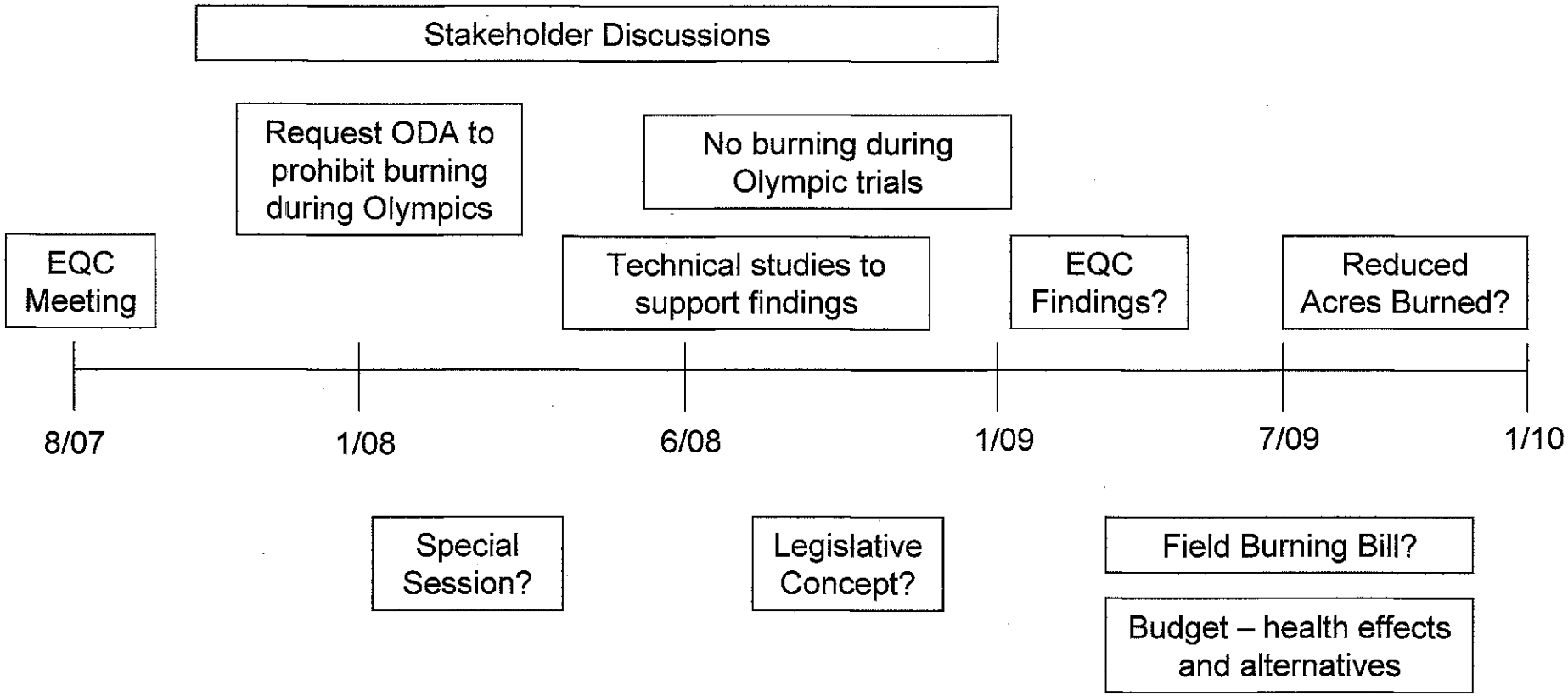
- The purpose of today's agenda item is to hear more from the public about this issue, and for the Commissioners to discuss this with each other.

- We are acutely aware that many of you view this as an urgent matter and hope that we will take action in time for this field burning season. On the other hand, it is very important that we consider all of the relevant information and make a fully informed decision.

- We think it is important for you to know that depending on the information presented and today's discussion, we may or may not reach conclusions or decide on a path forward at today's meeting.

- If you would like to present to us, please fill out a card and give to Helen. I will call the cards in the order they are received. To ensure that everyone gets a chance to speak, I may limit the time – please try to keep your remarks brief. Commissioners may ask questions, and then we will discuss among ourselves.

Possible Field Burning Timeline For Rulemaking, Budgeting and Legislation



State of Oregon
Department of Environmental Quality Memorandum

Date: June 4, 2007

To: Environmental Quality Commission

From: Stephanie Hallock, Director S Hallock

Subject: Agenda Item H, Temporary Rule Adoption: Oregon Title V Operating Permit Program Fee Increase
August 16, 2007 EQC Meeting

Why is this Important

Oregon's Title V Operating Permit Program contributes to the prevention of air pollution and helps reduce the number of unhealthy air days and the risks from air toxics. The federal Clean Air Act requires each state's Title V program to be fully funded by permit fees.

The proposed increase to Oregon's Title V Operating Permit Fees is needed to cover the reasonable costs of the Department of Environmental Quality (Department) in implementing Oregon's Title V Operating Permit Program. Failure to adequately fund Oregon's Title V Operating Permit Program could affect the Department's ability to maintain federal approval of the state program.

Department Recommendation

The Department recommends that the Commission:

(1) Determine that the increased fees in the proposed rule (as presented in Attachment A) are necessary to cover the reasonable indirect and direct costs of implementing Oregon's Title V Operating Permit Program; and
(2) Amend OAR 340-220-0030 through -0050 to increase Oregon's Title V Operating Permit Fees by the amount authorized by Senate Bill 107 and by the 2006 Consumer Price Index (CPI), pursuant to ORS 468A.315.

Background and Need for Rulemaking

Title V of the federal Clean Air Act requires each state to develop and implement a comprehensive operating permit program for major industrial sources of air pollution. Oregon's Title V Operating Permit Program was approved by the Environmental Protection Agency in 1993. The Title V program is to be fully funded through permit fees; no federal funds are provided.

The 2007 Oregon Legislature passed Senate Bill 107, increasing Oregon's Title V Operating Permit fees in statute (ORS 468A.315) by 24 percent, to be phased in over three years: 2007, 2008, and 2009. The Department needs this fee increase to keep up with increases in Title V program costs, avoid reducing program services to permittees and the public, and maintain federal approval of the program. Both federal and state laws require the Title V program to be entirely funded by permit fees.

Because Title V fees are set in both statute and rule, a rule change is necessary to implement this fee increase. The Department will propose a permanent rulemaking in early 2008 to align fees in rule with the new fees set in statute. Until then, temporary rule amendments are needed to increase Title V fees by the 2006 CPI and by the 2007 statute increase so that the Department may issue invoices as scheduled, in August 2007. If adopted, the invoices will reflect the new fees for the entire year and avoid a second billing for the fee increases only. With or without the temporary rule, permittees will ultimately owe the same amount of fees for 2007 because the statute has a retroactive clause for collection of fees.

The temporary rule amendments also implement a correction in the formula used to

calculate the annual CPI fee increases. This correction will align the CPI fee increases for all fee categories to the same base year, set in statute. In the past, the Department calculated the CPI increase to the Title V Emission Fee using the 1989 CPI and the CPI increase for the Title V Base Fee and Specific Activity Fees using the 1993 CPI. To conform to the statute, DEQ is proposing to use the 1989 CPI as the baseline for the Base Fee and Specific Activity Fees. Because of the correction, this year's CPI fee increase is larger for the Base Fee and Specific Activity Fees than it is for the Emission Fee. The correction will not require retroactive collection of fees for previous years.

Effect of Rule

The proposed rule amendments increase fees for all Oregon Title V Operating Permit Program sources. Title V permittees are generally the largest stationary emission sources in Oregon, including but not limited to, power generation, wood and paper products, and fiberglass manufacturing facilities. The requirement that a source have a Title V permit is based on quantity of emissions from a source rather than size of the business. Smaller sources, such as wood refinishing and fiberglass reinforced plastic facilities, are also subject to Title V if those sources have the potential to emit at or above major source emission thresholds. The Department projects that approximately 123 Oregon sources will be subject to Title V in FY 2008.

- The Emission Fee will increase by $4.52 per ton of assessable emissions, **from $39.38 per ton** emitted during the 2005 calendar year (invoiced in 2006) **to $43.90 per ton** emitted during the 2006 calendar year (to be invoiced in 2007). The annual Base Fee will increase by $1,011, **from $3,379** for the period of November 15, 2006, through November 14, 2007 (invoiced in 2006) **to $4,390** for the period of November 15, 2007, through November 14, 2008 (to be invoiced in 2007).
- Specific Activity Fees, such as permit modification or ambient modeling fees, will increase according to the following table:

Specific Activity Fees	**From:**	**To:**
Permit Revision:		
Administrative	$338	$406
Simple	$1,352	$1,626
Moderate	$10,137	$12,194
Complex	$20,273	$24,387
Ambient Review	$2,703	$3,252

This temporary rule also changes the definitions for regulated pollutants to conform to the new statutory requirements of SB 107. SB 107 changes the definition of regulated pollutant to simplify billing of emission fees. Currently, there are several regulated pollutants in the Title V fee rules that fall under more than one pollutant category in Title V permits. This creates extra work for the Department to prevent double billing of emission fees on these pollutants. Implementing the definition change in Title V fee rules will reduce Department resources needed to bill on emission fees. SB 107 requires the EQC to establish by rule the size fraction of total particulates subject to emission fees. Implementing this change in Title V fee rules will provide for DEQ to assess emission fees on particulates based on new federal particulate standards.

Commission Authority

The Commission has authority to take this action under ORS 468.020, 468A.025, ORS 468.065, ORS 468A.040, ORS 468A.310, and ORS 468A.315

Stakeholder Involvement

The Department did not convene an advisory panel to develop the proposed rule amendments because an advisory panel is not required for temporary rules and the Department did not have sufficient time to convene a panel for this rulemaking. However, Department staff worked with industry representatives and other stakeholders to build support for the fee increase and stakeholders supported the final version of SB 107. The Department will convene an advisory panel to develop the proposed rule amendments for the permanent rulemaking in early 2008.

Public Comment

No public comment period is required for adoption of a temporary rule and no comment period was held for the fee increase in its current form.

Key Issues

The proposed rule amendments will help the Department cover the costs of implementing Oregon's Title V Operating Permit Program in Fiscal Year (FY) 2008 (July 1, 2007 – June 30, 2008). Program costs are projected to rise in FY 2008 due to inflation and increases in personnel service costs. Because the program must maintain full funding through permit fees, it will be difficult to maintain adequate staff levels to effectively administer Oregon's Title V program without this fee increase. Inadequate funding could jeopardize the Department's ability to maintain federal approval of the program.

Next Steps

If adopted by the Commission, the proposed fee increases would become effective upon filing with the Secretary of State. Invoices for Title V sources reflecting the fee increase would be mailed in August 2007 with payment due in October 2007. The Department will propose a permanent rulemaking in early 2008 to align fees in rule with the new fees set in statute. Because this is a continuation of an existing program, no additional resources or training will be needed to implement the rule.

Attachments

A. Proposed Rule (with amendments shown in redline format).
B. Statement of Need and Justification
C. Senate Bill 107

Available Upon Request

1. ORS 468A.315
2. 2007-2009 Legislatively Approved Budget
3. Fiscal Year 2008 Title V Revenue Forecast

Approved:

Section:

Division: for Andy Ginsburg

Report Prepared By: Andrea Curtis
Phone: (503) 229-6866

Oregon Department of Environmental Quality

Temporary Rulemaking Proposal For
Adoption of Oregon Title V Operating Permit Program Fee Increase

Proposed Rule Changes

DIVISION 200

GENERAL AIR POLLUTION PROCEDURES AND DEFINITIONS

General

340-200-0020

General Air Quality Definitions

As used in divisions 200 through 268, unless specifically defined otherwise:

(1) "Act" or "FCAA" means the Federal Clean Air Act, 42 U.S.C.A. ¦¦ 7401 to 7671q.

(2) "Activity" means any process, operation, action, or reaction (e.g., chemical) at a source that emits a regulated pollutant.

(3) "Actual emissions" means the mass emissions of a pollutant from an emissions source during a specified time period.

(a) For determining actual emissions as of the baseline period:

(A) Except as provided in paragraph (B), actual emissions equal the average rate at which the source actually emitted the pollutant during a baseline period and that represents normal source operation;

(B) The Department presumes that the source-specific mass emissions limit included in a source's permit that was effective on September 8, 1981 is equivalent to the source's actual emissions during the baseline period if it is within 10% of the actual emissions calculated under paragraph (A).

(C) For any source that had not begun normal operation, actual emissions equal the potential to emit of the source.

(b) For determining actual emissions for Emission Statements under OAR 340-214-0200 through 340-214-0220 and Oregon Title V Operating Permit Fees under OAR 340 division 220, actual emissions include, but are not limited to, routine process emissions,

fugitive emissions, excess emissions from maintenance, startups and shutdowns, equipment malfunction, and other activities, except categorically insignificant activities and secondary emissions.

(c) For Oregon Title V Operating Permit Fees under OAR 340 division 220, actual emissions must be directly measured with a continuous monitoring system or calculated using a material balance or verified emission factor in combination with the source's actual operating hours, production rates, or types of materials processed, stored, or combusted during the specified time period.

(4) "Adjacent" means interdependent facilities that are nearby to each other.

(5) "Affected source" means a source that includes one or more affected units that are subject to emission reduction requirements or limitations under Title IV of the FCAA.

(6) "Affected states" means all states:

(a) Whose air quality may be affected by a proposed permit, permit modification, or permit renewal and that are contiguous to Oregon; or

(b) That are within 50 miles of the permitted source.

(7) "Aggregate insignificant emissions" means the annual actual emissions of any regulated air pollutant from one or more designated activities at a source that are less than or equal to the lowest applicable level specified in this section. The total emissions from each designated activity and the aggregate emissions from all designated activities must be less than or equal to the lowest applicable level specified.

(a) One ton for total reduced sulfur, hydrogen sulfide, sulfuric acid mist, any Class I or II substance subject to a standard promulgated under or established by Title VI of the Act, and each criteria pollutant, except lead;

(b) 120 pounds for lead;

(c) 600 pounds for fluoride;

(d) 500 pounds for PM10 in a PM10 nonattainment area;

(e) The lesser of the amount established in OAR 340-244-0040, **Table 1** or 340-244-0230, **Table 3,** or 1,000 pounds;

(f) An aggregate of 5,000 pounds for all Hazardous Air Pollutants.

(8) "Air Contaminant" means a dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter, or any combination thereof.

(9) "Air Contaminant Discharge Permit" or "ACDP" means a written permit issued, renewed, amended, or revised by the Department, pursuant to OAR 340 division 216.

(10) "Alternative method" means any method of sampling and analyzing for an air pollutant that is not a reference or equivalent method but has been demonstrated to the Department's satisfaction to, in specific cases, produce results adequate for determination of compliance. An alternative method used to meet an applicable federal requirement for which a reference method is specified must be approved by EPA unless EPA has delegated authority for the approval to the Department.

(11) "Applicable requirement" means all of the following as they apply to emissions units in an Oregon Title V Operating Permit program source or ACDP program source, including requirements that have been promulgated or approved by the EPA through rule making at the time of issuance but have future-effective compliance dates:

(a) Any standard or other requirement provided for in the applicable implementation plan approved or promulgated by the EPA through rulemaking under Title I of the Act that implements the relevant requirements of the Act, including any revisions to that plan promulgated in **40 CFR Part 52;**

(b) Any standard or other requirement adopted under OAR 340-200-0040 of the State of Oregon Clean Air Act Implementation Plan, that is more stringent than the federal standard or requirement which has not yet been approved by the EPA, and other state-only enforceable air pollution control requirements;

(c) Any term or condition in an ACDP, OAR 340 division 216, including any term or condition of any preconstruction permits issued pursuant to OAR 340 division 224, New Source Review, until or unless the Department revokes or modifies the term or condition by a permit modification;

(d) Any term or condition in a Notice of Construction and Approval of Plans, OAR 340-210-0200 through 340-210-0240, until or unless the Department revokes or modifies the term or condition by a Notice of Construction and Approval of Plans or a permit modification;

(e) Any term or condition in a Notice of Approval, OAR 340-218-0190, issued before July 1, 2001, until or unless the Department revokes or modifies the term or condition by a Notice of Approval or a permit modification;

(f) Any term or condition of a PSD permit issued by the EPA until or unless the EPA revokes or modifies the term or condition by a permit modification;

(g) Any standard or other requirement under section 111 of the Act, including section 111(d);

(h) Any standard or other requirement under section 112 of the Act, including any requirement concerning accident prevention under section 112(r)(7) of the Act;

(i) Any standard or other requirement of the acid rain program under Title IV of the Act or the regulations promulgated thereunder;

(j) Any requirements established pursuant to section 504(b) or section 114(a)(3) of the Act;

(k) Any standard or other requirement under section 126(a)(1) and (c) of the Act;

(l) Any standard or other requirement governing solid waste incineration, under section 129 of the Act;

(m) Any standard or other requirement for consumer and commercial products, under section 183(e) of the Act;

(n) Any standard or other requirement for tank vessels, under section 183(f) of the Act;

(o) Any standard or other requirement of the program to control air pollution from outer continental shelf sources, under section 328 of the Act;

(p) Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI of the Act, unless the Administrator has determined that such requirements need not be contained in an Oregon Title V Operating Permit; and

(q) Any national ambient air quality standard or increment or visibility requirement under part C of Title I of the Act, but only as it would apply to temporary sources permitted pursuant to section 504(e) of the Act.

~~(12) "Assessable Emission" means a unit of emissions for which the major source owner or operator will be assessed a fee. It includes an emission of a pollutant as specified in OAR 340-220-0060 from one or more emissions devices or activities within a major source.~~

(12~~3~~) "Baseline Emission Rate" means the actual emission rate during the baseline period. Baseline emission rate does not include increases due to voluntary fuel switches or increased hours of operation that occurred after the baseline period.

(13~~4~~) "Baseline Period" means any consecutive 12 calendar month period during calendar years 1977 or 1978. The Department may allow the use of a prior time period upon a determination that it is more representative of normal source operation.

(14~~5~~) "Best Available Control Technology" or "BACT" means an emission limitation, including, but not limited to, a visible emission standard, based on the maximum degree of reduction of each air contaminant subject to regulation under the Act which would be

emitted from any proposed major source or major modification which, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such air contaminant. In no event may the application of BACT result in emissions of any air contaminant that would exceed the emissions allowed by any applicable new source performance standard or any standard for hazardous air pollutant. If an emission limitation is not feasible, a design, equipment, work practice, or operational standard, or combination thereof, may be required. Such standard must, to the degree possible, set forth the emission reduction achievable and provide for compliance by prescribing appropriate permit conditions.

(15~~6~~) "Capacity" means the maximum regulated pollutant emissions from a stationary source under its physical and operational design.

(16~~7~~) "Capture system" means the equipment (including but not limited to hoods, ducts, fans, and booths) used to contain, capture and transport a pollutant to a control device.

(17~~8~~) "Categorically insignificant activity" means any of the following listed pollutant emitting activities principally supporting the source or the major industrial group. Categorically insignificant activities must comply with all applicable requirements.

(a) Constituents of a chemical mixture present at less than 1% by weight of any chemical or compound regulated under divisions 200 through 268 excluding divisions 248 and 262 of this chapter, or less than 0.1% by weight of any carcinogen listed in the U.S. Department of Health and Human Service's Annual Report on Carcinogens when usage of the chemical mixture is less than 100,000 pounds/year;

(b) Evaporative and tail pipe emissions from on-site motor vehicle operation;

(c) Distillate oil, kerosene, and gasoline fuel burning equipment rated at less than or equal to 0.4 million Btu/hr;

(d) Natural gas and propane burning equipment rated at less than or equal to 2.0 million Btu/hr;

(e) Office activities;

(f) Food service activities;

(g) Janitorial activities;

(h) Personal care activities;

(i) Groundskeeping activities including, but not limited to building painting and road and parking lot maintenance;

(j) On-site laundry activities;

(k) On-site recreation facilities;

(l) Instrument calibration;

(m) Maintenance and repair shop;

(n) Automotive repair shops or storage garages;

(o) Air cooling or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment;

(p) Refrigeration systems with less than 50 pounds of charge of ozone depleting substances regulated under Title VI, including pressure tanks used in refrigeration systems but excluding any combustion equipment associated with such systems;

(q) Bench scale laboratory equipment and laboratory equipment used exclusively for chemical and physical analysis, including associated vacuum producing devices but excluding research and development facilities;

(r) Temporary construction activities;

(s) Warehouse activities;

(t) Accidental fires;

(u) Air vents from air compressors;

(v) Air purification systems;

(w) Continuous emissions monitoring vent lines;

(x) Demineralized water tanks;

(y) Pre-treatment of municipal water, including use of deionized water purification systems;

(z) Electrical charging stations;

(aa) Fire brigade training;

(bb) Instrument air dryers and distribution;

(cc) Process raw water filtration systems;

(dd) Pharmaceutical packaging;

(ee) Fire suppression;

(ff) Blueprint making;

(gg) Routine maintenance, repair, and replacement such as anticipated activities most often associated with and performed during regularly scheduled equipment outages to maintain a plant and its equipment in good operating condition, including but not limited to steam cleaning, abrasive use, and woodworking;

(hh) Electric motors;

(ii) Storage tanks, reservoirs, transfer and lubricating equipment used for ASTM grade distillate or residual fuels, lubricants, and hydraulic fluids;

(jj) On-site storage tanks not subject to any New Source Performance Standards (NSPS), including underground storage tanks (UST), storing gasoline or diesel used exclusively for fueling of the facility's fleet of vehicles;

(kk) Natural gas, propane, and liquefied petroleum gas (LPG) storage tanks and transfer equipment;

(ll) Pressurized tanks containing gaseous compounds;

(mm) Vacuum sheet stacker vents;

(nn) Emissions from wastewater discharges to publicly owned treatment works (POTW) provided the source is authorized to discharge to the POTW, not including on-site wastewater treatment and/or holding facilities;

(oo) Log ponds;

(pp) Storm water settling basins;

(qq) Fire suppression and training;

(rr) Paved roads and paved parking lots within an urban growth boundary;

(ss) Hazardous air pollutant emissions of fugitive dust from paved and unpaved roads except for those sources that have processes or activities that contribute to the deposition and entrainment of hazardous air pollutants from surface soils;

(tt) Health, safety, and emergency response activities;

(uu) Emergency generators and pumps used only during loss of primary equipment or utility service due to circumstances beyond the reasonable control of the owner or operator, or to address a power emergency as determined by the Department;

(vv) Non-contact steam vents and leaks and safety and relief valves for boiler steam distribution systems;

(ww) Non-contact steam condensate flash tanks;

(xx) Non-contact steam vents on condensate receivers, deaerators and similar equipment;

(yy) Boiler blowdown tanks;

(zz) Industrial cooling towers that do not use chromium-based water treatment chemicals;

(aaa) Ash piles maintained in a wetted condition and associated handling systems and activities;

(bbb) Oil/water separators in effluent treatment systems;

(ccc) Combustion source flame safety purging on startup;

(ddd) Broke beaters, pulp and repulping tanks, stock chests and pulp handling equipment, excluding thickening equipment and repulpers;

(eee) Stock cleaning and pressurized pulp washing, excluding open stock washing systems; and

(fff) White water storage tanks.

(18~~9~~) "Certifying individual" means the responsible person or official authorized by the owner or operator of a source who certifies the accuracy of the emission statement.

(19~~20~~) "CFR" means Code of Federal Regulations.

(20~~1~~) "Class I area" means any Federal, State or Indian reservation land which is classified or reclassified as Class I area. Class I areas are identified in OAR 340-204-0250.

(21~~2~~) "Commence" or "commencement" means that the owner or operator has obtained all necessary preconstruction approvals required by the Act and either has:

(a) Begun, or caused to begin, a continuous program of actual on-site construction of the source to be completed in a reasonable time; or

(b) Entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of construction of the source to be completed in a reasonable time.

(22~~3~~) "Commission" or "EQC" means Environmental Quality Commission.

(23~~4~~) "Constant Process Rate" means the average variation in process rate for the calendar year is not greater than plus or minus ten percent of the average process rate.

(24~~5~~) "Construction":

(a) Except as provided in subsection (b) of this section means any physical change including, but not limited to, fabrication, erection, installation, demolition, or modification of a source or part of a source;

(b) As used in OAR 340 division 224 means any physical change including, but not limited to, fabrication, erection, installation, demolition, or modification of an emissions unit, or change in the method of operation of a source which would result in a change in actual emissions.

(25~~6~~) "Continuous compliance determination method" means a method, specified by the applicable standard or an applicable permit condition, which:

(a) Is used to determine compliance with an emission limitation or standard on a continuous basis, consistent with the averaging period established for the emission limitation or standard; and

(b) Provides data either in units of the standard or correlated directly with the compliance limit.

(26~~7~~) "Continuous Monitoring Systems" means sampling and analysis, in a timed sequence, using techniques which will adequately reflect actual emissions or concentrations on a continuing basis in accordance with the Department's Continuous Monitoring Manual, and includes continuous emission monitoring systems, continuous opacity monitoring system (COMS) and continuous parameter monitoring systems.

(27~~8~~) "Control device" means equipment, other than inherent process equipment, that is used to destroy or remove air pollutant(s) prior to discharge to the atmosphere. The types of equipment that may commonly be used as control devices include, but are not limited to, fabric filters, mechanical collectors, electrostatic precipitators, inertial separators, afterburners, thermal or catalytic incinerators, adsorption devices (such as carbon beds), condensers, scrubbers (such as wet collection and gas absorption devices), selective catalytic or non-catalytic reduction systems, flue gas recirculation systems, spray dryers, spray towers, mist eliminators, acid plants, sulfur recovery plants, injection systems (such as water, steam, ammonia, sorbent or limestone injection), and combustion devices independent of the particular process being conducted at an emissions unit (e.g., the

destruction of emissions achieved by venting process emission streams to flares, boilers or process heaters). For purposes of OAR 340-212-0200 through 340-212-0280, a control device does not include passive control measures that act to prevent pollutants from forming, such as the use of seals, lids, or roofs to prevent the release of pollutants, use of low-polluting fuel or feedstocks, or the use of combustion or other process design features or characteristics. If an applicable requirement establishes that particular equipment which otherwise meets this definition of a control device does not constitute a control device as applied to a particular pollutant-specific emissions unit, then that definition will be binding for purposes of OAR 340-212-0200 through 340-212-0280.

(289) "Criteria Pollutant" means nitrogen oxides, volatile organic compounds, particulate matter, PM10, sulfur dioxide, carbon monoxide, or lead.

(2930) "Data" means the results of any type of monitoring or method, including the results of instrumental or non-instrumental monitoring, emission calculations, manual sampling procedures, recordkeeping procedures, or any other form of information collection procedure used in connection with any type of monitoring or method.

(304) "De minimis emission level" means: [Table not included. See ED. NOTE.]

NOTE: De minimis is compared to all increases that are not included in the PSEL.

(312) "Department":

(a) Means Department of Environmental Quality; except

(b) As used in OAR 340 divisions 218 and 220 means Department of Environmental Quality or in the case of Lane County, Lane Regional Air Pollution Authority.

(323) "Device" means any machine, equipment, raw material, product, or byproduct at a source that produces or emits a regulated pollutant.

(334) "Director" means the Director of the Department or the Director's designee.

(345) "Draft permit" means the version of an Oregon Title V Operating Permit for which the Department or Lane Regional Air Pollution Authority offers public participation under OAR 340-218-0210 or the EPA and affected State review under OAR 340-218-0230.

(356) "Effective date of the program" means the date that the EPA approves the Oregon Title V Operating Permit program submitted by the Department on a full or interim basis. In case of a partial approval, the "effective date of the program" for each portion of the program is the date of the EPA approval of that portion.

(367) "Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the owner or operator, including acts of God,

which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency does not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(37~~8~~) "Emission" means a release into the atmosphere of any regulated pollutant or air contaminant.

(38~~9~~) "Emission Estimate Adjustment Factor" or "EEAF" means an adjustment applied to an emission factor to account for the relative inaccuracy of the emission factor.

(394~~0~~) "Emission Factor" means an estimate of the rate at which a pollutant is released into the atmosphere, as the result of some activity, divided by the rate of that activity (e.g., production or process rate). Where an emission factor is required sources must use an emission factor approved by EPA or the Department.

(40~~1~~)(a) Except as provided in subsection (b) of this section, "Emission Limitation" and "Emission Standard" mean a requirement established by a State, local government, or the EPA which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirements which limit the level of opacity, prescribe equipment, set fuel specifications, or prescribe operation or maintenance procedures for a source to assure continuous emission reduction.

(b) As used in OAR 340-212-0200 through 340-212-0280, "Emission limitation or standard" means any applicable requirement that constitutes an emission limitation, emission standard, standard of performance or means of emission limitation as defined under the Act. An emission limitation or standard may be expressed in terms of the pollutant, expressed either as a specific quantity, rate or concentration of emissions (e.g., pounds of SO2 per hour, pounds of SO2 per million British thermal units of fuel input, kilograms of VOC per liter of applied coating solids, or parts per million by volume of SO2) or as the relationship of uncontrolled to controlled emissions (e.g., percentage capture and destruction efficiency of VOC or percentage reduction of SO2). An emission limitation or standard may also be expressed either as a work practice, process or control device parameter, or other form of specific design, equipment, operational, or operation and maintenance requirement. For purposes of OAR 340-212-0200 through 340-212-0280, an emission limitation or standard does not include general operation requirements that an owner or operator may be required to meet, such as requirements to obtain a permit, to operate and maintain sources in accordance with good air pollution control practices, to develop and maintain a malfunction abatement plan, to keep records, submit reports, or conduct monitoring.

(41~~2~~) "Emission Reduction Credit Banking" means to presently reserve, subject to requirements of OAR 340 division 268, Emission Reduction Credits, emission reductions for use by the reserver or assignee for future compliance with air pollution reduction requirements.

(423) "Emission Reporting Form" means a paper or electronic form developed by the Department that must be completed by the permittee to report calculated emissions, actual emissions, or permitted emissions for interim emission fee assessment purposes.

(434) "Emissions unit" means any part or activity of a source that emits or has the potential to emit any regulated air pollutant.

(a) A part of a source is any machine, equipment, raw material, product, or byproduct that produces or emits regulated air pollutants. An activity is any process, operation, action, or reaction (e.g., chemical) at a stationary source that emits regulated air pollutants. Except as described in subsection (d) of this section, parts and activities may be grouped for purposes of defining an emissions unit if the following conditions are met:

(A) The group used to define the emissions unit may not include discrete parts or activities to which a distinct emissions standard applies or for which different compliance demonstration requirements apply; and

(B) The emissions from the emissions unit are quantifiable.

(b) Emissions units may be defined on a pollutant by pollutant basis where applicable.

(c) The term emissions unit is not meant to alter or affect the definition of the term "unit" under Title IV of the FCAA.

(d) Parts and activities cannot be grouped for determining emissions increases from an emissions unit under OAR 340-224-0050 through 340-224-0070, or 340 division 210, or for determining the applicability of any New Source Performance Standard (NSPS).

(445) "EPA" or "Administrator" means the Administrator of the United States Environmental Protection Agency or the Administrator's designee.

(456) "Equivalent method" means any method of sampling and analyzing for an air pollutant that has been demonstrated to the Department's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions. An equivalent method used to meet an applicable federal requirement for which a reference method is specified must be approved by EPA unless EPA has delegated authority for the approval to the Department.

(467) "Event" means excess emissions that arise from the same condition and occur during a single calendar day or continue into subsequent calendar days.

(478) "Exceedance" means a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

(489) "Excess emissions" means emissions in excess of a permit limit or any applicable air quality rule.

(4950) "Excursion" means a departure from an indicator range established for monitoring under OAR 340-212-0200 through 340-212-0280 and 340-218-0050(3)(a), consistent with any averaging period specified for averaging the results of the monitoring.

(501) "Federal Land Manager" means with respect to any lands in the United States, the Secretary of the federal department with authority over such lands.

(512) Federal Major Source means a source with potential to emit any individual regulated pollutant, excluding hazardous air pollutants listed in OAR 340 division 244, greater than or equal to 100 tons per year if in a source category listed below, or 250 tons per year if not in a source category listed. Potential to emit calculations must include emission increases due to a new or modified source.

(a) Fossil fuel-fired steam electric plants of more than 250 million BTU/hour heat input;

(b) Coal cleaning plants with thermal dryers;

(c) Kraft pulp mills;

(d) Portland cement plants;

(e) Primary Zinc Smelters;

(f) Iron and Steel Mill Plants;

(g) Primary aluminum ore reduction plants;

(h) Primary copper smelters;

(i) Municipal Incinerators capable of charging more than 50 tons of refuse per day;

(j) Hydrofluoric acid plants;

(k) Sulfuric acid plants;

(l) Nitric acid plants;

(m) Petroleum Refineries;

(n) Lime plants;

(o) Phosphate rock processing plants;

(p) Coke oven batteries;

(q) Sulfur recovery plants;

(r) Carbon black plants, furnace process;

(s) Primary lead smelters;

(t) Fuel conversion plants;

(u) Sintering plants;

(v) Secondary metal production plants;

(w) Chemical process plants;

(x) Fossil fuel fired boilers, or combinations thereof, totaling more than 250 million BTU per hour heat input;

(y) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;

(z) Taconite ore processing plants;

(aa) Glass fiber processing plants;

(bb) Charcoal production plants.

(5~~2~~3) "Final permit" means the version of an Oregon Title V Operating Permit issued by the Department or Lane Regional Air Pollution Authority that has completed all review procedures required by OAR 340-218-0120 through 340-218-0240.

(5~~3~~4) "Fugitive Emissions":

(a) Except as used in subsection (b) of this section, means emissions of any air contaminant which escape to the atmosphere from any point or area that is not identifiable as a stack, vent, duct, or equivalent opening.

(b) As used to define a major Oregon Title V Operating Permit program source, means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

(5~~4~~5) "General permit":

(a) Except as provided in subsection (b) of this section, means an Oregon Air Contaminant Discharge Permit established under OAR 340-216-0060;

(b) As used in OAR 340 division 218 means an Oregon Title V Operating Permit established under OAR 340-218-0090.

(55~~6~~) "Generic PSEL" means: [Table not included. See ED. NOTE.]

NOTE: Sources are eligible for a generic PSEL if expected emissions are less than or equal to the levels listed in the table above. Baseline emission rate and netting basis do not apply to pollutants at sources using generic PSELs.

(56~~7~~) "Growth Allowance" means an allocation of some part of an airshed's capacity to accommodate future proposed major sources and major modifications of sources.

(57~~8~~) "Immediately" means as soon as possible but in no case more than one hour after a source knew or should have known of an excess emission period.

(58~~9~~) "Inherent process equipment" means equipment that is necessary for the proper or safe functioning of the process, or material recovery equipment that the owner or operator documents is installed and operated primarily for purposes other than compliance with air pollution regulations. Equipment that must be operated at an efficiency higher than that achieved during normal process operations in order to comply with the applicable emission limitation or standard is not inherent process equipment. For the purposes of OAR 340-212-0200 through 340-212-0280, inherent process equipment is not considered a control device.

(59~~60~~) "Insignificant Activity" means an activity or emission that the Department has designated as categorically insignificant, or that meets the criteria of aggregate insignificant emissions.

(60~~1~~) "Insignificant Change" means an off-permit change defined under OAR 340-218-0140(2)(a) to either a significant or an insignificant activity which:

(a) Does not result in a redesignation from an insignificant to a significant activity;

(b) Does not invoke an applicable requirement not included in the permit; and

(c) Does not result in emission of regulated air pollutants not regulated by the source's permit.

(61~~2~~) "Late Payment" means a fee payment which is postmarked after the due date.

(62~~3~~) "Lowest Achievable Emission Rate" or "LAER" means that rate of emissions which reflects: the most stringent emission limitation which is contained in the implementation plan of any state for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable; or the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent. The application of this term cannot

permit a proposed new or modified source to emit any air contaminant in excess of the amount allowable under applicable New Source Performance Standards (NSPS) or standards for hazardous air pollutants.

(634) "Maintenance Area" means a geographical area of the State that was designated as a nonattainment area, redesignated as an attainment area by EPA, and redesignated as a maintenance area by the Environmental Quality Commission in OAR chapter 340, division 204.

(645) "Maintenance Pollutant" means a pollutant for which a maintenance area was formerly designated a nonattainment area.

(656) "Major Modification" means any physical change or change of operation of a source that results in the following for any regulated air pollutant:

(a) An increase in the PSEL by an amount equal to or more than the significant emission rate over the netting basis; and

(b) The accumulation of physical changes and changes of operation since baseline would result in a significant emission rate increase.

(A) Calculations of emission increases in (b) must account for all accumulated increases in actual emissions due to physical changes and changes of operation occurring at the source since the baseline period, or since the time of the last construction approval issued for the source pursuant to the New Source Review Regulations in OAR 340 division 224 for that pollutant, whichever time is more recent. These include emissions from insignificant activities.

(B) Emission increases due solely to increased use of equipment or facilities that existed during the baseline period are not included, if that increased use was possible during the baseline period under the baseline configuration of the source, and the increased use of baseline equipment capacity is not to support a physical change or change in operation.

(c) For new or modified major sources that were permitted to construct and operate after the baseline period and were not subject to New Source Review, a major modification means:

(A) Any change at a source, including production increases, that would result in a Plant Site Emission Limit increase of 1 ton or more for any regulated pollutant for which the source is a major source; or

(B) The addition or modification of any stationary source or sources after the initial construction that have cumulative potential emissions greater than or equal to the significant emission rate, excluding any emission decreases.

(C) Changes to the PSEL solely due to the availability of better emissions information are exempt from being considered an increase.

(d) The following are not considered major modifications:

(A) Except as provided in (c), proposed increases in hours of operation or production rates that would cause emission increases above the levels allowed in a permit and would not involve a physical change or change in method of operation in the source;

(B) Pollution control projects that are determined by the Department to be environmentally beneficial;

(C) Routine maintenance, repair, and replacement of components;

(D) Temporary equipment installed for maintenance of the permanent equipment if the temporary equipment is in place for less than six months and operated within the permanent equipment's existing PSEL;

(E) Use of alternate fuel or raw materials, that were available and the source was capable of accommodating in the baseline period.

(66) "Major Source":

(a) Except as provided in subsection (b), means a source that emits, or has the potential to emit, any regulated air pollutant at a Significant Emission Rate. This includes emissions from insignificant activities.

(b) As used in OAR 340 division 210, Stationary Source Notification Requirements, OAR 340 division 218, Rules Applicable to Sources Required to Have Oregon Title V Operating Permits OAR 340 division 220, Oregon Title V Operating Permit Fees, and OAR 340-216-0066 Standard ACDPs, means any stationary source (or any group of stationary sources that are located on one or more contiguous or adjacent properties and are under common control of the same person (or persons under common control)) belonging to a single major industrial grouping or supporting the major industrial group and that is described in paragraphs (A), (B), or (C) of this subsection. For the purposes of this subsection, a stationary source or group of stationary sources is considered part of a single industrial grouping if all of the pollutant emitting activities at such source or group of sources on contiguous or adjacent properties belong to the same Major Group (i.e., all have the same two-digit code) as described in the Standard Industrial Classification Manual (U.S. Office of Management and Budget, 1987) or support the major industrial group.

(A) A major source of hazardous air pollutants, which means:

(i) For pollutants other than radionuclides, any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the

potential to emit, in the aggregate, 10 tons per year (tpy) or more of any hazardous air pollutants that has been listed pursuant to OAR 340-244-0040; 25 tpy or more of any combination of such hazardous air pollutants, or such lesser quantity as the Administrator may establish by rule. Emissions from any oil or gas exploration or production well, along with its associated equipment, and emissions from any pipeline compressor or pump station will not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources; or

(ii) For radionuclides, "major source" will have the meaning specified by the Administrator by rule.

(B) A major stationary source of air pollutants, as defined in section 302 of the Act, that directly emits or has the potential to emit 100 tpy or more of any regulated air pollutant, including any major source of fugitive emissions of any such pollutant. The fugitive emissions of a stationary source are not considered in determining whether it is a major stationary source for the purposes of section 302(j) of the Act, unless the source belongs to one of the following categories of stationary source:

(i) Coal cleaning plants (with thermal dryers);

(ii) Kraft pulp mills;

(iii) Portland cement plants;

(iv) Primary zinc smelters;

(v) Iron and steel mills;

(vi) Primary aluminum ore reduction plants;

(vii) Primary copper smelters;

(viii) Municipal incinerators capable of charging more than 50 tons of refuse per day;

(ix) Hydrofluoric, sulfuric, or nitric acid plants;

(x) Petroleum refineries;

(xi) Lime plants;

(xii) Phosphate rock processing plants;

(xiii) Coke oven batteries;

(xiv) Sulfur recovery plants;

(xv) Carbon black plants (furnace process);

(xvi) Primary lead smelters;

(xvii) Fuel conversion plants;

(xviii) Sintering plants;

(xix) Secondary metal production plants;

(xx) Chemical process plants;

(xxi) Fossil-fuel boilers, or combination thereof, totaling more than 250 million British thermal units per hour heat input;

(xxii) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;

(xxiii) Taconite ore processing plants;

(xxiv) Glass fiber processing plants;

(xxv) Charcoal production plants;

(xxvi) Fossil-fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input; or

(xxvii) Any other stationary source category, that as of August 7, 1980 is being regulated under section 111 or 112 of the Act.

(C) A major stationary source as defined in part D of Title I of the Act, including:

(i) For ozone nonattainment areas, sources with the potential to emit 100 tpy or more of VOCs or oxides of nitrogen in areas classified as "marginal" or "moderate," 50 tpy or more in areas classified as "serious," 25 tpy or more in areas classified as "severe," and 10 tpy or more in areas classified as "extreme"; except that the references in this paragraph to 100, 50, 25, and 10 tpy of nitrogen oxides do not apply with respect to any source for which the Administrator has made a finding, under section 182(f)(1) or (2) of the Act, that requirements under section 182(f) of the Act do not apply;

(ii) For ozone transport regions established pursuant to section 184 of the Act, sources with the potential to emit 50 tpy or more of VOCs;

(iii) For carbon monoxide nonattainment areas:

(I) That are classified as "serious"; and

(II) In which stationary sources contribute significantly to carbon monoxide levels as determined under rules issued by the Administrator, sources with the potential to emit 50 tpy or more of carbon monoxide.

(iv) For particulate matter (PM10) nonattainment areas classified as "serious," sources with the potential to emit 70 tpy or more of PM10.

(67~~8~~) "Material Balance" means a procedure for determining emissions based on the difference in the amount of material added to a process and the amount consumed and/or recovered from a process.

(68~~9~~) "Modification," except as used in the term "major modification," means any physical change to, or change in the method of operation of, a stationary source that results in an increase in the stationary source's potential to emit any regulated air pollutant on an hourly basis. Modifications do not include the following:

(a) Increases in hours of operation or production rates that do not involve a physical change or change in the method of operation;

(b) Changes in the method of operation due to using an alternative fuel or raw material that the stationary source was physically capable of accommodating during the baseline period; and

(c) Routine maintenance, repair and like-for-like replacement of components unless they increase the expected life of the stationary source by using component upgrades that would not otherwise be necessary for the stationary source to function.

(69~~70~~) "Monitoring" means any form of collecting data on a routine basis to determine or otherwise assess compliance with emission limitations or standards. Monitoring may include record keeping if the records are used to determine or assess compliance with an emission limitation or standard (such as records of raw material content and usage, or records documenting compliance with work practice requirements). Monitoring may include conducting compliance method tests, such as the procedures in appendix A to 40 CFR part 60, on a routine periodic basis. Requirements to conduct such tests on a one-time basis, or at such times as a regulatory authority may require on a non-regular basis, are not considered monitoring requirements for purposes of this definition. Monitoring may include one or more than one of the following data collection techniques as appropriate for a particular circumstance:

(a) Continuous emission or opacity monitoring systems.

(b) Continuous process, capture system, control device or other relevant parameter monitoring systems or procedures, including a predictive emission monitoring system.

(c) Emission estimation and calculation procedures (e.g., mass balance or stoichiometric calculations).

(d) Maintaining and analyzing records of fuel or raw materials usage.

(e) Recording results of a program or protocol to conduct specific operation and maintenance procedures.

(f) Verifying emissions, process parameters, capture system parameters, or control device parameters using portable or in situ measurement devices.

(g) Visible emission observations and recording.

(h) Any other form of measuring, recording, or verifying on a routine basis emissions, process parameters, capture system parameters, control device parameters or other factors relevant to assessing compliance with emission limitations or standards.

(70) "Netting Basis" means 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.

(a) With the first permitting action for a source after July 1, 2002, the baseline emissions rate will be frozen and recalculated only if:

(A) A better emission factor is established for the baseline period and approved by the Department;

(B) A currently operating emissions unit that the Department formerly thought had negligible emissions, is determined to have non-de minimis emissions and needs to be added to the baseline emission rate; or

(C) A new pollutant is added to the regulated pollutant list (e.g., PM2.5). For a pollutant that is newly regulated after 11/15/90, the initial netting basis is the actual emissions during any 12 consecutive month period within the 24 months immediately preceding its designation as a regulated pollutant. The Department may allow a prior 12 consecutive month time period to be used if it is shown to be more representative of normal source operation.

(b) Netting basis is zero for:

(A) any source constructed after the baseline period and has not undergone New Source Review;

(B) Any pollutant that has a generic PSEL in a permit;

(C) Any source permitted as portable; and

(D) Any source with a netting basis calculation resulting in a negative number.

(c) If a source relocates to an adjacent site, and the time between operation at the old and new sites is less than six months, the source may retain the netting basis from the old site.

(d) Emission reductions required by rule, order, or permit condition affect the netting basis if the source currently has devices or emissions units that are subject to the rules, order, or permit condition. The baseline emission rate is not affected.

(e) Netting basis for a pollutant with a revised definition will be adjusted if the source is emitting the pollutant at the time of redefining and the pollutant is included in the permit's netting basis.

(f) Where EPA requires an attainment demonstration based on dispersion modeling, the netting basis will be established at no more than the level used in the dispersion modeling to demonstrate attainment with the ambient air quality standard (i.e., the attainment demonstration is an emission reduction required by rule).

(712) "Nitrogen Oxides" or "NOx" means all oxides of nitrogen except nitrous oxide.

(723) "Nonattainment Area" means a geographical area of the State, as designated by the Environmental Quality Commission or the EPA, that exceeds any state or federal primary or secondary ambient air quality standard.

(734) "Nonattainment Pollutant" means a pollutant for which an area is designated a nonattainment area.

(745) "Normal Source Operation" means operations which do not include such conditions as forced fuel substitution, equipment malfunction, or highly abnormal market conditions.

(756) "Offset" means an equivalent or greater emission reduction that is required before allowing an emission increase from a proposed major source or major modification of an existing source.

(767) "Oregon Title V Operating Permit" means any permit covering an Oregon Title V Operating Permit source that is issued, renewed, amended, or revised pursuant to division 218.

(778) "Oregon Title V Operating Permit program" means a program approved by the Administrator under 40 CFR Part 70.

(789) "Oregon Title V Operating Permit program source" means any source subject to the permitting requirements, OAR 340 division 218.

(7980) "Ozone Season" means the contiguous 3 month period during which ozone exceedances typically occur (i.e., June, July, and August).

(801) "Particulate Matter" means all finely divided solid or liquid material, other than uncombined water, emitted to the ambient air as measured by an applicable reference method in accordance with the Department's Source Sampling Manual, (January, 1992).

(812) "Permit" means an Air Contaminant Discharge Permit or an Oregon Title V Operating Permit.

(823) "Permit modification" means a permit revision that meets the applicable requirements of OAR 340 division 216, 340 division 224, or 340-218-0160 through 340-218-0180.

(834) "Permit revision" means any permit modification or administrative permit amendment.

(845) "Permitted Emissions" as used in OAR division 220 means each ~~assessable emission~~regulated pollutant portion of the PSEL, as identified in an ACDP, Oregon Title V Operating Permit, review report, or by the Department pursuant to OAR 340-220-0190.

(856) "Permittee" means the owner or operator of the facility, authorized by the ACDP or the Oregon Title V Operating Permit to operate the source.

(867) "Person" means individuals, corporations, associations, firms, partnerships, joint stock companies, public and municipal corporations, political subdivisions, the State of Oregon and any agencies thereof, and the federal government and any agencies thereof.

(878) "Plant Site Emission Limit" or "PSEL" means the total mass emissions per unit time of an individual air pollutant specified in a permit for a source. The PSEL for a major source may consist of more than one ~~assessable emission~~regulated pollutant.

(889) "PM10":

(a) When used in the context of emissions, means finely divided solid or liquid material, including condensible particulate, other than uncombined water, with an aerodynamic diameter less than or equal to a nominal 10 micrometers, emitted to the ambient air as measured by an applicable reference method in accordance with the Department's **Source Sampling Manual** (January, 1992);

(b) When used in the context of ambient concentration, means airborne finely divided solid or liquid material with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured in accordance with **40 CFR Part 50, Appendix J.**

(8990) "Pollutant-specific emissions unit" means an emissions unit considered separately with respect to each regulated air pollutant.

(901) "Potential to emit" or "PTE" means the lesser of:

(a) The capacity of a stationary source; or

(b) The maximum allowable emissions taking into consideration any physical or operational limitation, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, if the limitation is enforceable by the Administrator.

(c) This definition does not alter or affect the use of this term for any other purposes under the Act or the term "capacity factor" as used in Title IV of the Act and the regulations promulgated thereunder. Secondary emissions are not considered in determining the potential to emit.

(912) "Predictive emission monitoring system (PEMS)" means a system that uses process and other parameters as inputs to a computer program or other data reduction system to produce values in terms of the applicable emission limitation or standard.

(923) "Process Upset" means a failure or malfunction of a production process or system to operate in a normal and usual manner.

(934) "Proposed permit" means the version of an Oregon Title V Operating Permit that the Department or a Regional Authority proposes to issue and forwards to the Administrator for review in compliance with OAR 340-218-0230.

(945) "Reference method" means any method of sampling and analyzing for an air pollutant as specified in **40 CFR Part 60, 61** or **63.**

(956) "Regional Authority" means Lane Regional Air Pollution Authority.

(967) "Regulated air pollutant" or "Regulated Pollutant":

(a) Except as provided in subsections (b) and (c) of this rule, means:

(A) Nitrogen oxides or any VOCs;

(B) Any pollutant for which a national ambient air quality standard has been promulgated;

(C) Any pollutant that is subject to any standard promulgated under section 111 of the Act;

(D) Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Act; or

(E) Any pollutant listed under OAR 340-244-0040 or 340-244-0230.

(b) As used in OAR 340 division 220, means any air pollutant as included in subsection (a) of this rule, except the following:

(A) Carbon monoxide;

(B) Any pollutant that is a regulated pollutant solely because it is a Class I or Class II substance subject to a standard promulgated under or established by Title VI of the Federal Clean Air Act; or

(C) Any pollutant that is a regulated air pollutant solely because it is subject to a standard or regulation under section 112(r) of the Federal Clean Air Act.

(c) As used in OAR 340 division 224 any pollutant listed under OAR 340-244-0040 or 340-244-0230 is not a regulated pollutant.

(978) "Renewal" means the process by which a permit is reissued at the end of its term.

(989) "Responsible official" means one of the following:

(a) For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(A) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars); or

(B) The delegation of authority to such representative is approved in advance by the Department or Lane Regional Air Pollution Authority.

(b) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

(c) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this Division, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the EPA); or

(d) For affected sources:

(A) The designated representative in so far as actions, standards, requirements, or prohibitions under Title IV of the Act or the regulations promulgated thereunder are concerned; and

(B) The designated representative for any other purposes under the Oregon Title V Operating Permit program.

(99~~100~~) "Secondary Emissions" means emissions that are a result of the construction and/or operation of a source or modification, but that do not come from the source itself. Secondary emissions must be specific, well defined, quantifiable, and impact the same general area as the source associated with the secondary emissions. Secondary emissions may include, but are not limited to:

(a) Emissions from ships and trains coming to or from a facility;

(b) Emissions from off-site support facilities that would be constructed or would otherwise increase emissions as a result of the construction or modification of a source.

(100~~1~~) "Section 111" means section 111 of the FCAA which includes Standards of Performance for New Stationary Sources (NSPS).

(101~~2~~) "Section 111(d)" means subsection 111(d) of the FCAA which requires states to submit to the EPA plans that establish standards of performance for existing sources and provides for implementing and enforcing such standards.

(102~~3~~) "Section 112" means section 112 of the FCAA which contains regulations for Hazardous Air Pollutants (HAP).

(103~~4~~) "Section 112(b)" means subsection 112(b) of the FCAA which includes the list of hazardous air pollutants to be regulated.

(104~~5~~) "Section 112(d)" means subsection 112(d) of the FCAA which directs the EPA to establish emission standards for sources of hazardous air pollutants. This section also defines the criteria to be used by the EPA when establishing the emission standards.

(105~~6~~) "Section 112(e)" means subsection 112(e) of the FCAA which directs the EPA to establish and promulgate emissions standards for categories and subcategories of sources that emit hazardous air pollutants.

(106~~7~~) "Section 112(r)(7)" means subsection 112(r)(7) of the FCAA which requires the EPA to promulgate regulations for the prevention of accidental releases and requires owners or operators to prepare risk management plans.

(107~~8~~) "Section 114(a)(3)" means subsection 114(a)(3) of the FCAA which requires enhanced monitoring and submission of compliance certifications for major sources.

(108~~9~~) "Section 129" means section 129 of the FCAA which requires the EPA to establish emission standards and other requirements for solid waste incineration units.

(109~~10~~) "Section 129(e)" means subsection 129(e) of the FCAA which requires solid waste incineration units to obtain Oregon Title V Operating Permits.

(110~~1~~) "Section 182(f)" means subsection 182(f) of the FCAA which requires states to include plan provisions in the State Implementation Plan for NOx in ozone nonattainment areas.

(111~~2~~) "Section 182(f)(1)" means subsection 182(f)(1) of the FCAA which requires states to apply those plan provisions developed for major VOC sources and major NOx sources in ozone nonattainment areas.

(112~~3~~) "Section 183(e)" means subsection 183(e) of the FCAA which requires the EPA to study and develop regulations for the control of certain VOC sources under federal ozone measures.

(113~~4~~) "Section 183(f)" means subsection 182(f) of the FCAA which requires the EPA to develop regulations pertaining to tank vessels under federal ozone measures.

(114~~5~~) "Section 184" means section 184 of the FCAA which contains regulations for the control of interstate ozone air pollution.

(115~~6~~) "Section 302" means section 302 of the FCAA which contains definitions for general and administrative purposes in the Act.

(116~~7~~) "Section 302(j)" means subsection 302(j) of the FCAA which contains definitions of "major stationary source" and "major emitting facility."

(117~~8~~) "Section 328" means section 328 of the FCAA which contains regulations for air pollution from outer continental shelf activities.

(118~~9~~) "Section 408(a)" means subsection 408(a) of the FCAA which contains regulations for the Title IV permit program.

(119~~20~~) "Section 502(b)(10) change" means a change which contravenes an express permit term but is not a change that:

(a) Would violate applicable requirements;

(b) Would contravene federally enforceable permit terms and conditions that are monitoring, recordkeeping, reporting, or compliance certification requirements; or

(c) Is a Title I modification.

(120~~4~~) "Section 504(b)" means subsection 504(b) of the FCAA which states that the EPA can prescribe by rule procedures and methods for determining compliance and for monitoring.

(121~~2~~) "Section 504(e)" means subsection 504(e) of the FCAA which contains regulations for permit requirements for temporary sources.

(122~~3~~) "Significant Air Quality Impact" means an additional ambient air quality concentration equal to or greater than in the concentrations listed in **Table 1.** The threshold concentrations listed in Table 1 are used for comparison against the ambient air quality standard and do not apply for protecting PSD Class I increments or air quality related values (including visibility). For sources of VOC or NOx, a major source or major modification has a significant impact if it is located within the Ozone Precursor Significant Impact Distance defined in OAR 340-225-0020.

(123~~4~~) "Significant Emission Rate" or "SER," except as provided in subsections (a) through (c) of this section, means an emission rate equal to or greater than the rates specified in **Table 2.**

(a) For the Medford-Ashland Air Quality Maintenance Area, the Significant Emission Rate for PM10 is defined in **Table 3.**

(b) For regulated air pollutants not listed in **Table 2** or **3,** the significant emission rate is zero unless the Department determines the rate that constitutes a significant emission rate.

(c) Any new source or modification with an emissions increase less than the rates specified in **Table 2** or **3** associated with a new source or modification which would construct within 10 kilometers of a Class I area, and would have an impact on such area equal to or greater than 1 ug/m3 (24 hour average) is emitting at a significant emission rate.

(124~~5~~) "Significant Impairment" occurs when the Department determines that visibility impairment interferes with the management, protection, preservation, or enjoyment of the visual experience within a Class I area. The Department will make this determination on a case-by-case basis after considering the recommendations of the Federal Land Manager and the geographic extent, intensity, duration, frequency, and time of visibility impairment. These factors will be considered along with visitor use of the Class I areas, and the frequency and occurrence of natural conditions that reduce visibility.

(125~~6~~) "Source" means any building, structure, facility, installation or combination thereof that emits or is capable of emitting air contaminants to the atmosphere, is located on one or more contiguous or adjacent properties and is owned or operated by the same person or by persons under common control. The term includes all pollutant emitting

activities that belong to a single major industrial group (i.e., that have the same two-digit code) as described in the Standard Industrial Classification Manual, (U.S. Office of Management and Budget, 1987) or that support the major industrial group.

(126~~7~~) "Source category":

(a) Except as provided in subsection (b) of this section, means all the pollutant emitting activities that belong to the same industrial grouping (i.e., that have the same two-digit code) as described in the Standard Industrial Classification Manual, (U.S. Office of Management and Budget, 1987).

(b) As used in OAR 340 division 220, Oregon Title V Operating Permit Fees, means a group of major sources that the Department determines are using similar raw materials and have equivalent process controls and pollution control equipment.

(127~~8~~) "Source Test" means the average of at least three test runs conducted during operating conditions representative of the period for which emissions are to be determined and in accordance with the Department's Source Sampling Manual or other Department approved methods.

(128~~9~~) "Startup" and "shutdown" means that time during which an air contaminant source or emission-control equipment is brought into normal operation or normal operation is terminated, respectively.

(129~~30~~) "State Implementation Plan" or "SIP" means the State of Oregon Clean Air Act Implementation Plan as adopted by the Commission under OAR 340-200-0040 and approved by EPA.

(130~~1~~) "Stationary source" means any building, structure, facility, or installation at a source that emits or may emit any regulated air pollutant.

(131~~2~~) "Substantial Underpayment" means the lesser of ten percent (10%) of the total interim emission fee for the major source or five hundred dollars.

(132~~3~~) "Synthetic minor source" means a source that would be classified as a major source under OAR 340-200-0020, but for limits on its potential to emit air pollutants contained in a permit issued by the Department under OAR 340 division 216 or 218.

(133~~4~~) "Title I modification" means one of the following modifications pursuant to Title I of the FCAA:

(a) A major modification subject to OAR 340-224-0050, Requirements for Sources in Nonattainment Areas;

(b) A major modification subject to OAR 340-224-0060, Requirements for Sources in Maintenance Areas;

(c) A major modification subject to OAR 340-224-0070, Prevention of Significant Deterioration Requirements for Sources in Attainment or Unclassified Areas;

(d) A modification that is subject to a New Source Performance Standard under Section 111 of the FCAA; or

(e) A modification under Section 112 of the FCAA.

(134~~5~~) "Total Reduced Sulfur" or "TRS" means the sum of the sulfur compounds hydrogen sulfide, methyl mercaptan, dimethyl sulfide, dimethyl disulfide, and any other organic sulfides present expressed as hydrogen sulfide (H2S).

(135~~6~~) "Typically Achievable Control Technology" or "TACT" means the emission limit established on a case-by-case basis for a criteria pollutant from a particular emissions unit in accordance with OAR 340-226-0130. For existing sources, the emission limit established will be typical of the emission level achieved by emissions units similar in type and size. For new and modified sources, the emission limit established will be typical of the emission level achieved by well controlled new or modified emissions units similar in type and size that were recently installed. TACT determinations will be based on information known to the Department while considering pollution prevention, impacts on other environmental media, energy impacts, capital and operating costs, cost effectiveness, and the age and remaining economic life of existing emission control equipment. The Department may consider emission control technologies typically applied to other types of emissions units where such technologies could be readily applied to the emissions unit. If an emission limitation is not feasible, a design, equipment, work practice, operational standard, or combination thereof, may be required.

(136~~7~~) "Unassigned Emissions" means the amount of emissions that are in excess of the PSEL but less than the Netting Basis.

(137~~8~~) "Unavoidable" or "could not be avoided" means events that are not caused entirely or in part by poor or inadequate design, operation, maintenance, or any other preventable condition in either process or control equipment.

(138~~9~~) "Upset" or "Breakdown" means any failure or malfunction of any pollution control equipment or operating equipment that may cause excess emissions.

(139~~40~~) "Visibility Impairment" means any humanly perceptible change in visual range, contrast or coloration from that which existed under natural conditions. Natural conditions include fog, clouds, windblown dust, rain, sand, naturally ignited wildfires, and natural aerosols.

(140~~1~~) "Volatile Organic Compounds" or "VOC" means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, that participates in atmospheric photochemical reactions.

(a) This includes any such organic compound except the following, which have been determined to have negligible photochemical reactivity in the formation of tropospheric ozone: methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane (methyl chloroform); 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113); trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (HCFC-22); trifluoromethane (HFC-23); 1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); 1,1,1-trifluoro 2,2-dichloroethane (HCFC-123); 1,1,1,2-tetrafluoroethane (HFC-134a); 1,1-dichloro 1-fluoroethane (HCFC-141b); 1-chloro 1,1-difluoroethane (HCFC-142b); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); parachlorobenzotrifluoride (PCBTF); cyclic, branched, or linear completely methylated siloxanes; acetone; perchloroethylene (tetrachloroethylene); 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca); 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb); 1,1,1,2,3,4,4,5,5,5-decafluoropentane HFC 43-10mee); difluoromethane (HFC-32); ethylfluoride (HFC-161); 1,1,1,3,3,3-hexafluoropropane (HFC-236fa); 1,1,2,2,3-pentafluoropropane (HFC-245ca); 1,1,2,3,3-pentafluoropropane (HFC-245ea); 1,1,1,2,3-pentafluoropropane (HFC-245eb); 1,1,1,3,3-pentafluoropropane (HFC-245fa); 1,1,1,2,3,3-hexafluoropropane (HFC-236ea); 1,1,1,3,3-pentafluorobutane (HFC-365mfc); chlorofluoromethane (HCFC-31); 1 chloro-1-fluoroethane (HCFC-151a); 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a); 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C4F9OCH3 or HFE-7100); 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF3)2CFCF2OCH3); 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C4F9OC2H5 or HFE-7200); 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF3)2CFCF2OC2H5); methyl acetate; 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-C3F7OCH3, HFE-7000); 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (HFE-7500); 1,1,1,2,3,3,3-heptafluoropropane (HFC 227ea); and methyl formate (HCOOCH3); and perfluorocarbon compounds that fall into these classes:

(A) Cyclic, branched, or linear, completely fluorinated alkanes;

(B) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

(C) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

(D) Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

(b) For purposes of determining compliance with emissions limits, VOC will be measured by an applicable reference method in accordance with the Department's Source Sampling Manual, January, 1992. Where such a method also measures compounds with negligible photochemical reactivity, these negligibly-reactive compounds may be excluded as VOC if the amount of such compounds is accurately quantified, and the Department approves the exclusion.

(c) The Department may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the Department's satisfaction, the amount of negligibly-reactive compounds in the source's emissions.

(d) The following compound(s) are VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements which apply to VOC and must be uniquely identified in emission reports, but are not VOC for purposes of VOC emissions limitations or VOC content requirements: t-butyl acetate.

(1412) "Year" means any consecutive 12 month period of time.

NOTE: This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the EQC under OAR 340-200-0040.

[ED. NOTE: Tables referenced are available from the agency.]

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 468.020
Stats. Implemented: ORS 468A.025

DIVISION 218

OREGON TITLE V OPERATING PERMITS

340-218-0050

Standard Permit Requirements

Each permit issued under this division must include the following elements:

(1) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance:

(a) The permit must specify and reference the origin of and authority for each term or condition, and identify any difference in form as compared to the applicable requirement upon which the term or condition is based;

(b) For sources regulated under the national acid rain program, the permit must state that, where an applicable requirement of the FCAA or state rules is more stringent than an applicable requirement of regulations promulgated under Title IV of the FCAA, both provisions must be incorporated into the permit and will be enforceable by the EPA;

(c) For any alternative emission limit established in accordance with OAR 340-226-0400, the permit must contain an equivalency determination and provisions to ensure that any resulting emissions limit has been demonstrated to be quantifiable, accountable, enforceable, and based on replicable procedures.

(2) Permit duration. The Department will issue permits for a fixed term of 5 years in the case of affected sources, and for a term not to exceed 5 years in the case of all other sources.

(3) Monitoring and related recordkeeping and reporting requirements:

(a) Each permit must contain the following requirements with respect to monitoring:

(A) A monitoring protocol to provide accurate and reliable data that:

(i) Is representative of actual source operation;

(ii) Is consistent with the averaging time in the permit emission limits;

(iii) Is consistent with monitoring requirements of other applicable requirements; and

(iv) Can be used for compliance certification and enforcement.

(B) All emissions monitoring and analysis procedures or test methods required under applicable monitoring and testing requirements, including OAR 340-212-0200 through 340-212-0280 and any other procedures and methods that may be promulgated pursuant to sections 504(b) or 114(a)(3) of the FCAA. If more than one monitoring or testing requirement applies, the permit may specify a streamlined set of monitoring or testing provisions provided the specified monitoring or testing is adequate to assure compliance at least to the same extent as the monitoring or testing applicable requirements that are not included in the permit as a result of such streamlining;

(C) Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit, as reported pursuant to OAR 340-218-0050(3)(c). Such monitoring requirements must assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement. Continuous monitoring and source testing must be conducted in accordance with the Department's **Continuous Monitoring Manual** (January, 1992) and the **Source Sampling Manual (January, 1992)**, respectively. Other monitoring must be conducted in accordance with Department approved procedures. The monitoring requirements may include but are not limited to any combination of the following:

(i) Continuous emissions monitoring systems (CEMS);

(ii) Continuous opacity monitoring systems (COMS);

(iii) Continuous parameter monitoring systems (CPMS);

(iv) Continuous flow rate monitoring systems (CFRMS);

(v) Source testing;

(vi) Material balance;

(vii) Engineering calculations;

(viii) Recordkeeping; or

(ix) Fuel analysis; and

(D) As necessary, requirements concerning the use, maintenance, and, where appropriate, installation of monitoring equipment or methods;

(E) A condition that prohibits any person from knowingly rendering inaccurate any required monitoring device or method;

(F) Methods used to determine actual emissions for fee purposes must also be used for compliance determination and can be no less rigorous than the requirements of OAR 340-218-0080. For any ~~assessable emission~~regulated pollutant for which fees are paid on actual emissions, the compliance monitoring protocol must include the method used to determine the amount of actual emissions;

(G) Monitoring requirements must commence on the date of permit issuance unless otherwise specified in the permit.

(b) With respect to recordkeeping, the permit must incorporate all applicable recordkeeping requirements and require, where applicable, the following:

(A) Records of required monitoring information that include the following:

(i) The date, place as defined in the permit, and time of sampling or measurements;

(ii) The date(s) analyses were performed;

(iii) The company or entity that performed the analyses;

(iv) The analytical techniques or methods used;

(v) The results of such analyses;

(vi) The operating conditions as existing at the time of sampling or measurement; and

(vii) The records of quality assurance for continuous monitoring systems (including but not limited to quality control activities, audits, calibrations drifts).

(B) Retention of records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit;

(C) Recordkeeping requirements must commence on the date of permit issuance unless otherwise specified in the permit.

(c) With respect to reporting, the permit must incorporate all applicable reporting requirements and require the following:

(A) Submittal of four (4) copies of reports of any required monitoring at least every 6 months, completed on forms approved by the Department. Unless otherwise approved in writing by the Department, six month periods are January 1 to June 30, and July 1 to December 31. The reports required by this rule must be submitted within 30 days after the end of each reporting period, unless otherwise approved in writing by the Department. One copy of the report must be submitted to the Air Quality Division, two copies to the regional office, and one copy to the EPA. All instances of deviations from permit requirements must be clearly identified in such reports:

(i) The semi-annual report will be due on July 30, unless otherwise approved in writing by the Department, and must include the semi-annual compliance certification, OAR 340-218-0080;

(ii) The annual report will be due on February 15, unless otherwise approved in writing by the Department, but may not be due later than March 15, and must consist of the annual reporting requirements as specified in the permit; the emission fee report; the emission statement, if applicable, OAR 340-214-0220; the excess emissions upset log, OAR 214-0340; the annual certification that the risk management plan is being properly implemented, OAR 340-224-0230; and the semi-annual compliance certification, OAR 340-218-0080.

(B) Prompt reporting of deviations from permit requirements that do not cause excess emissions, including those attributable to upset conditions, as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. "Prompt" means within seven (7) days of the deviation. Deviations that cause excess emissions, as specified in OAR 340-214-0300 through 340-214-0360 must be reported in accordance with OAR 340-214-0340;

(C) Submittal of any required source test report within 30 days after the source test unless otherwise approved in writing by the Department or specified in a permit;

(D) All required reports must be certified by a responsible official consistent with OAR 340-218-0040(5);

(E) Reporting requirements must commence on the date of permit issuance unless otherwise specified in the permit.

(d) The Department may incorporate more rigorous monitoring, recordkeeping, or reporting methods than required by applicable requirements in an Oregon Title V Operating Permit if they are contained in the permit application, are determined by the Department to be necessary to determine compliance with applicable requirements, or are needed to protect human health or the environment.

(4) A permit condition prohibiting emissions exceeding any allowances that the source lawfully holds under Title IV of the FCAA or the regulations promulgated thereunder:

(a) No permit revision will be required for increases in emissions that are authorized by allowances acquired pursuant to the acid rain program, provided that such increases do not require a permit revision under any other applicable requirement;

(b) No limit may be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement;

(c) Any such allowance must be accounted for according to the procedures established in regulations promulgated under Title IV of the FCAA.

(5) A severability clause to ensure the continued validity of the various permit requirements in the event of a challenge to any portions of the permit.

(6) Provisions stating the following:

(a) The permittee must comply with all conditions of the Oregon Title V Operating Permit. Any permit condition noncompliance constitutes a violation of the FCAA and state rules and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application;

(b) The need to halt or reduce activity will not be a defense. It will not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit;

(c) The permit may be modified, revoked, reopened and reissued, or terminated for cause as determined by the Department. The filing of a request by the permittee for a permit

modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition;

(d) The permit does not convey any property rights of any sort, or any exclusive privilege;

(e) The permittee must furnish to the Department, within a reasonable time, any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee must also furnish to the Department copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to the EPA along with a claim of confidentiality.

(7) A provision to ensure that an Oregon Title V Operating Permit program source pays fees to the Department consistent with the fee schedule.

(8) Terms and conditions for reasonably anticipated alternative operating scenarios identified by the owner or operator in its application as approved by the Department. Such terms and conditions:

(a) Must require the owner or operator, contemporaneously with making a change from one operating scenario to another, to record in a log at the permitted facility a record of the scenario under which it is operating;

(b) Must extend the permit shield described in OAR 340-218-0110 to all terms and conditions under each such alternative operating scenario; and

(c) Must ensure that the terms and conditions of each such alternative operating scenario meet all applicable requirements and the requirements of this division.

(9) Terms and conditions, if the permit applicant requests them, for the trading of emissions increases and decreases in the permitted facility solely for the purpose of complying with the PSELs. Such terms and conditions:

(a) Must include all terms required under OAR 340-218-0050 and OAR 340-218-0080 to determine compliance;

(b) Must extend the permit shield described in OAR 340-218-0110 to all terms and conditions that allow such increases and decreases in emissions;

(c) Must ensure that the trades are quantifiable and enforceable;

(d) Must ensure that the trades are not Title I modifications;

(e) Must require a minimum 7-day advance, written notification to the Department and the EPA of the trade that must be attached to the Department's and the source's copy of the permit. The written notification must state when the change will occur and must describe the changes in emissions that will result and how these increases and decreases in emissions will comply with the terms and conditions of the permit; and

(f) Must meet all applicable requirements and requirements of this division.

(10) Terms and conditions, if the permit applicant requests them, for the trading of emissions increases and decreases in the permitted facility, to the extent that the applicable requirements provide for trading such increases and decreases without a case-by-case approval of each emission trade. Such terms and conditions:

(a) Must include all terms required under OAR 340-218-0050 and OAR 340-218-0080 to determine compliance;

(b) Must extend the permit shield described in OAR 340-218-0110 to all terms and conditions that allow such increases and decreases in emissions; and

(c) Must meet all applicable requirements and requirements of this division.

(11) Terms and conditions allowing for off-permit changes, OAR 340-218-0140(2).

(12) Terms and conditions allowing for section 502(b)(10) changes, OAR 340-218-0140(3).

[Publications: The publications referenced in this rule are available from the agency.]

Stat. Auth.: ORS 468.020 & ORS 468A.310
Stats. Implemented: ORS 468.020 & ORS 468A.310

DIVISION 220

OREGON TITLE V OPERATING PERMIT FEES

340-220-0010

Purpose, Scope a~~A~~nd Applicability

(1) The purpose of this division is to provide owners and operators of Oregon Title V Operating Permit program sources and the Department with the criteria and procedures to determine emissions and fees based on air emissions and specific activities.

(2) This division applies to Oregon Title V Operating Permit program sources as defined in OAR 340-200-0020.

(3) The owner or operator may elect to pay emission fees for each regulated pollutant ~~assessable emission~~ on either actual emissions or permitted emissions.

~~(4) If the assessable emission is of a regulated air pollutant listed in OAR 340-244-0040 and there are no applicable methods to demonstrate actual emissions, the owner or operator may propose that the Department approve an emission factor based on the best representative data to demonstrate actual emissions for fee purposes.~~

(4~~5~~) Sources subject to the Oregon Title V Operating Permit program defined in OAR 340-200-0020, are subject to both an annual base fee established under OAR 340-220-0030 and an emission fee calculated pursuant to OAR 340-220-0040.

(5~~6~~) Sources subject to the Oregon Title V Operating Permit program may also be subject to user fees (OAR 340-220-0050 and 340-216-0090).

(6~~7~~) The Department will credit owners and operators of new Oregon Title V Operating Permit program sources for the unused portion of paid Annual Fees. The credit will begin from the date the Department receives the Title V permit application.

Stat. Auth.: ORS 468 & ORS 468A
Stats. Implemented: ORS 468 & ORS 468A

340-220-0020

Definitions

The definitions in OAR 340-200-0020 and this rule apply to this division. If the same term is defined in this rule and OAR 340-200-0020, the definition in this rule applies to this division.

(1) Regulated pollutant. For purposes of this rule, regulated pollutant means particulates, volatile organic compounds, oxides of nitrogen and sulfur dioxide.

(2) Particulates. For purposes of this rule, particulates mean those currently regulated by the Title V permit.

Stat. Auth.: ORS 468.020
Stats. Implemented: ORS 468A.025

340-220-0030

Annual Base Fee

(1) The Department will assess an annual base fee of $ ~~3,379~~ 4,390 for each source subject to the Oregon Title V Operating Permit program. ~~The fee covers~~ for the period ~~from~~ of November 15, 2007 ~~of the current calendar year~~ to November 14, 2008 ~~of the following year~~.

(2) The Department will assess an annual base fee of $ 4,715 for each source subject to the Oregon Title V Operating Permit program for the period of November 15, 2008 to November 14, 2009.

Stat. Auth.: ORS 468 & 468A
Stats. Implemented: ORS 468 & 468A

340-220-0040

Emission Fee

(1) The Department will assess an emission fee of $ ~~39.38~~43.90 per ton of each regulated pollutant emitted during calendar year 2006 to each source subject to the Oregon Title V Operating Permit Program.

(2) The Department will assess an emission fee of $ 47.15 per ton of each regulated pollutant emitted during calendar year 2007 to each source subject to the Oregon Title V Operating Permit Program.

(~~2~~3) The emission fee will be applied to emissions ~~from the previous calendar year~~ based on the elections made according to OAR 340-220-0090.

Stat. Auth.: ORS 468 & 468A
Stats. Implemented: ORS 468 & 468A

340-220-0050

Specific Activity Fees

The Department will assess specific activity fees for an Oregon Title V Operating Permit program source as follows:

(1) Existing Source Permit Revisions:

(a) Administrative* -- $ 406~~338~~;

(b) Simple -- $ 1,626~~1,352~~;

(c) Moderate -- $ 12,194~~10,137~~;

(d) Complex -- $ 24,387~~20,273~~.

(2) Ambient Air Monitoring Review -- $ 3,252~~2,703~~.

*includes revisions specified in OAR 340-218-0150(1) (a) through (g). Other revisions specified in OAR 340-218-0150 are subject to simple, moderate or complex revision fees.

Stat. Auth.: ORS 468 & 468A
Stats. Implemented: ORS 468 & 468A

340-220-0060

Pollutants Subject to Emission Fees

(1) The Department will assess emission fees on ~~assessable~~ emissions of regulated pollutants up to and including 4,000 tons per year for each regulated pollutant.

~~(2) If the emission fee on PM_{10} emissions is based on the permitted emissions for a source that does not have a PSEL for PM_{10}, the Department will assess the emission fee on the permitted emissions for particulate matter (PM).~~

(~~3~~2) The owner or operator must pay emission fees on ~~all assessable~~ emissions of all regulated pollutants.

~~(4) The Department will assess emission fees only once for a regulated pollutant that the permittee can demonstrate, using procedures approved by the Department, is accounted for in more than one category of assessable emissions (e.g., a Hazardous Air Pollutant that is also demonstrated to be a Criteria Pollutant).~~

~~(5) Fees for newly regulated pollutants are effective on the date the pollutant becomes regulated. During the first year that the pollutant is regulated, the fee may be prorated according the number of months that the pollutant is regulated.~~

Stat. Auth.: ORS 468.020
Stats. Implemented: ORS 468A.025

340-220-0070

Exclusions

(1) The Department will not assess emission fees on newly permitted major sources that have not begun initial operation.

(2) The Department will not assess emission fees on carbon monoxide. However, sources that emit or are permitted to emit 100 tons or more per year of carbon monoxide are subject to the emission fees on all other regulated air pollutants pursuant to OAR 340-220-0010.

(3) The Department will not assess emission fees on any device or activity that did not operate at any time during the calendar year.

(4) If an owner or operator of an Oregon Title V Operating Permit program source operates a device or activity for less than 5% of the permitted operating schedule, the owner or operator may elect to report emissions based on a proration of the permitted emissions for the actual operating time.

(5) The Department will not assess emission fees on emissions categorized as credits or unassigned emissions~~PSELs~~ within an Oregon Title V Operating Permit.

(6) The Department will not assess emission fees on categorically insignificant emissions as defined in OAR 340-200-0020.

~~(7) The Department will not assess emission fees on Hazardous Air Pollutants that are also Criteria Pollutants.~~

Stat. Auth.: ORS 468.020
Stats. Implemented: ORS 468A.025

340-220-0090

Election for Each Regulated Pollutant~~Assessable Emission~~

(1) The owner or operator must elect to pay emission fees on either actual emissions, permitted emissions, or a combination of both for the previous calendar year for ~~each assessable~~ emissions of each regulated pollutant and notify the Department in accordance with OAR 340-220-0110.

~~(2) The owner or operator may elect to pay emission fees on permitted emissions for hazardous air pollutants. An owner or operator may elect a Hazardous Air Pollutant PSEL in accordance with OAR 340-222-0060. The HAP PSEL will only be used for fee purposes.~~

(2~~3~~) If an owner or operator fails to notify the Department of the election for ~~an assessable~~ emissions of a regulated pollutant, the Department will assess emission fees ~~for the assessable emission~~ based on permitted emissions.

(43) If the permit or review report does not identify permitted emissions for ~~an assessable~~ emissions of a regulated pollutant, the Department will develop representative assessable~~permitted~~ emissions ~~representative of the assessable emissions~~.

(~~5~~4) An owner or operator may elect to pay emission fees on the aggregate limit for insignificant emissions that are not categorically exempt insignificant emissions.

Stat. Auth.: ORS 468.020
Stats. Implemented: ORS 468A.025

340-220-0100

Emission Reporting

(1) Using a form(s) developed by the Department the owner or operator must report the following ~~for each assessable emission or group of assessable~~ emissions:

(a) ~~PM_{10}, or if a permit specifies Particulate Matter (PM), then PM~~Particulates;

(b) Sulfur Dioxide as SO_2;

(c) Oxides of Nitrogen (NO_x) as Nitrogen Dioxide (NO_2);

~~(d) Total Reduced Sulfur (TRS) as H_2S in accordance with OAR 340-234-0010;~~

(e~~d~~) Volatile Organic Compounds as:

(A) VOC for material balance emission reporting; or

(B) Propane (C_3H_8), unless otherwise specified by permit, OAR Chapter 340, or a method approved by the Department, for emissions verified by source testing.

~~(f) Fluoride as F;~~

~~(g) Lead as Pb;~~

~~(h) Hydrogen Chloride as HCl;~~

~~(i) Estimate of Hazardous Air Pollutants as specified in a Department approved method.~~

(2) The owner or operator must report emissions in tons per year and as follows:

(a) Round up to the nearest whole ton for emission values 0.5 and greater; and

(b) Round down to the nearest whole ton for emission values less than 0.5.

(3) The owner or operator electing to pay emission fees on actual emissions must:

(a) Submit complete information on the forms including all ~~assessable~~ emissions of regulated pollutants; and

(b) Submit documentation necessary to support emission calculations.

(4) The owner or operator electing to pay on actual emissions must report total emissions, including those emissions in excess of 4,000 tons for ~~each assessable~~ emissions of each regulated pollutant.

(5) The owner or operator electing to pay on permitted emissions for a regulated pollutant ~~n assessable emission~~ must identify such an election on the form(s) developed by the Department.

(6) If more than one permit is in effect for a calendar year for an Oregon Title V Operating Permit program source, the owner or operator electing to pay on permitted emissions must pay on the most current permitted or actual emissions.

Stat. Auth.: ORS 468.020
Stats. Implemented: ORS 468A.025

340-220-0110

Emission Reporting and Fee Procedures

(1) The owner or operator must submit the required form(s), including the election for emissions of each regulated pollutant~~assessable emission~~, to the Department with the annual permit report in accordance with annual reporting procedures.

(2) The owner or operator may request that information, other than emission information, submitted pursuant to this division be exempt from disclosure in accordance with OAR 340-214-0130.

(3) Records developed in accordance with these rules are subject to inspection and entry requirements in OAR 340-218-0080. The owner or operator must retain records for at least five years in accordance with OAR 340-218-0050(3)(b)(B).

(4) The Department may accept the information submitted or request additional information from the owner or operator. The owner or operator must submit additional actual emission information requested by the Department within 30 days of the date of the request. The Department may approve a request for additional time, up to 30 days, to submit the requested information.

(5) If the Department determines the actual emission information submitted for emissions of any regulated pollutant ~~assessable emission~~ does not meet the criteria in this division, the Department will assess the emission fee on the permitted emission for that regulated pollutant.~~assessable emission.~~

(6) The owner or operator must submit emission fees payable to the Department by the later of:

(a) August 1 for emission fees from the previous calendar year; or

(b) Thirty days after the Department mails the fee invoice.

(7) Department acceptance of emission fees does not indicate approval of data collection methods, calculation methods, or information reported on Emission Reporting Forms. If the Department determines initial emission fee assessments were inaccurate or inconsistent with this division, the Department may assess or refund emission fees up to two years after emission fees are received by the Department.

(8) The Department will not revise a PSEL solely due to an emission fee payment.

(9) Owners or operators operating sources pursuant to OAR 340 division 218 must submit the emission reporting information with the annual permit report.

Stat. Auth.: ORS 468 & ORS 468A
Stats. Implemented: ORS 468A.025

340-220-0120

Actual Emissions

An owner or operator electing to pay on actual emissions must obtain emission data and determine regulated pollutant ~~assessable~~ emissions using one of the following methods:

(1) Continuous monitoring systems used in accordance with OAR 340-220-0130;

(2) Verified emission factors developed for that particular source in accordance with OAR 340-220-0170 for:

(a) Emissions of ~~E~~each regulated pollutant ~~assessable emission~~; or

(b) A combination of regulated pollutant~~assessable~~ emissions if there are multiple devices or activities venting to the atmosphere through one common emission point (e.g., stack). The owner or operator must have a verified emission factor plan approved by the Department before conducting the source testing in accordance with OAR 340-220-0170.

(3) Material balances determined in accordance with OAR 340-220-0140, OAR 340-220-0150, or OAR 340-220-0160; or

(4) Verified emission factors for source categories developed in accordance with OAR 340-220-0170(11).

~~(5) For specific assessable emissions of regulated air pollutants listed under OAR 340-244-0040 but not subject by permit to a Plant Site Emission Limit, and where the Department determines there are not applicable methods to demonstrate actual emissions, the owner or operator must use the best representative data to develop an emission factor, subject to Department approval.~~

Stat. Auth.: ORS 468.020
Stats. Implemented: ORS 468A.025

340-220-0150

Determining VOC Emissions Using Material Balance

The owner or operator may determine the amount of VOC emissions for emissions of a regulated pollutant~~an assessable emission~~ by using material balance. The owner or operator using material balance to calculate VOC emissions must determine the amount of VOC added to the process, the amount of VOC consumed in the process, and the amount of VOC recovered in the process, if any, by testing in accordance with **40 Code of Federal Regulations (CFR) Part 60 Appendix A EPA Method 18, 24, 25**, a material balance method, or an equivalent plant specific method specified in the Oregon Title V Operating Permit using the following equation: [Equation not included. See ED. NOTE.]

[ED. NOTE: The equation referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

[Publications: The publication(s) referenced in this rule is available from the agency.]

Stat. Auth.: ORS 468 & ORS 468A

Stats Implemented: ORS 468.020, ORS 468A.025, and ORS 468A.315.

340-220-0170

Verified Emission Factors

(1) The owner or operator must verify emission factors before using them to determine emissions of regulated pollutants~~assessable emissions~~. To verify emission factors, the owner or operator must perform either source testing in accordance with the Department's

Source Sampling Manual or use other methods approved by the Department for source tests. Source tests must be conducted in accordance with testing procedures on file at the Department and the Department approved pretest plan which must be submitted at least 15 days before the testing. All test data and results must be submitted for review to the Department within 30 days after testing, unless the Department approves otherwise or a different time period is specified in a permit.

[**NOTE:** DEQ recommends that the owner or operator notify the Department and obtain pre-approval of the emission factor source testing program before or as part of the first source test notification.]

(2) The owner or operator must conduct or have conducted at least three compliance source tests. Each test must consist of at least three individual test runs for a total of at least nine test runs.

(3) The owner or operator must monitor and record applicable process and control device operating data.

(4) The owner or operator must perform a source test either:

(a) In each of three quarters of the year with no two successive source tests performed any closer than 30 days apart; or

(b) At equal intervals over the operating period if the owner or operator demonstrates and the Department agrees that the device or activity operates or has operated for part of the year; or

(c) At any time during the year if the owner or operator demonstrates, and the Department agrees, that the process is or was not subject to seasonal variations.

(5) The owner or operator must conduct the source tests to test the entire range of operating levels. At least one test must be conducted at minimum operating conditions, at normal or average operating levels, and at anticipated maximum operating levels. If the process rate is constant, all tests must be conducted at that rate. The owner or operator must submit documentation to the Department demonstrating a constant process rate.

(6) The owner or operator must determine an emission factor for each source test by dividing each test run, in pounds of emission per hour, by the applicable process rate during the source test run. At least nine emission factors must be plotted against the respective process rates and a regression analysis performed to determine the best fit equation and the correlation coefficient. If the correlation coefficient is less than 0.50, which indicates that there is a relatively weak relationship between emissions and process rates, the arithmetic average and standard deviation of at least nine emission factors must be determined.

(7) The owner or operator must determine the Emissions Estimate Adjustment Factor (EEAF) as follows:

(a) If the correlation coefficient (R^2) of the regression analysis is greater than 0.50, the EEAF will be $1+(1-R^2)$.

(b) If the correlation coefficient (R^2) is less than 0.50, the EEAF will be: [Equation not included. See ED. NOTE.]

(8) The owner or operator must determine actual emissions for emission fee purposes using one of the following methods:

(a) If the regression analysis correlation coefficient is less than 0.50, the actual emissions is the average emission factor determined from at least nine test runs multiplied by the EEAF multiplied by the total production for the entire year; or [Equation not included. See ED. NOTE.]

(b) If the regression analysis correlation coefficient is greater than 0.50, perform the following calculations :

(A) Determine the average emission factor (EF) for each production rate category (maximum = EF_{max}, normal = EF_{norm}, and minimum = EF_{min});

(B) Determine the total annual production and operating hours, production time (PT_{tot}), for the calendar year;

(C) Determine the total hours operating within the maximum production rate category (PT_{max}). The maximum production rate category is any operation rate greater than the average of at least three maximum operating rates during the source testing plus the average of at least three normal operating rates during the source testing divided by 2;

(D) Determine the total hours while operating within the normal production rate category (PT_{norm}). The normal production rate category is defined as any operating rate less than the average of at least three maximum operating rates during the source testing plus the average of at least three normal operating rates during the source testing divided by 2 and any operating rate greater than the average of at least three minimum operating rates during the source testing plus the average of at least three normal operating rates during the source testing divided by 2;

(E) Determine the total hours while operating within the minimum production rate category (PT_{min}). The minimum production rate category is defined as any operating rate less than the average of at least three minimum operating rates during the source testing plus the average of at least three normal operating rates during the source testing divided by 2;

(F) Actual emissions equals EEAF x ((PT_{max}/PT_{tot}) x EF_{max} + (PT_{norm}/PT_{tot}) x EF_{norm} + (PT_{min}/PT_{tot}) x EF_{min}.)

(9) The owner or operator must determine emissions during startup and shutdown, and for emissions greater than normal, during conditions that are not accounted for in the procedure(s) otherwise used to document actual emissions. The owner or operator must apply 340-220-0170(9)(a) or 340-220-0170(9)(b), (c) and (d) in developing emission factors. The owner or operator must apply the emission factor obtained to the total time the device or activity operated under these conditions.

(a) All emissions during startup and shutdown, and emissions greater than normal are assumed equivalent to operation without an air pollution control device, unless the owner or operator accurately demonstrates otherwise in accordance with OAR 340-220-0170(9)(b), (9)(c), (9)(d), and (9)(e), and approved by the Department. The emission factor plus the EEAF must be adjusted by the air pollution control device collection efficiency as follows: [Equation not included. See ED. NOTE.]

(b) During process startups a Department approved source test may be performed to determine an average startup factor. The average of at least three tests runs plus the standard deviation will be used to determine actual emissions during startups.

(c) During process shutdowns a Department approved source test may be performed to determine an emission factor for shutdowns. The average of at least three test runs plus the standard deviation will be used to determine actual emissions during shutdowns.

(d) During routine maintenance activity the owner or operator may:

(A) Perform routine maintenance activity during source testing for verified emission factors; or

(B) Determine emissions in accordance with Section (a) of this rule.

(e) The emission factor need not be adjusted if the owner or operator demonstrates to the Department that the pollutant emissions do not increase during startup and shutdown, and for conditions that are not accounted for in the procedure(s) otherwise used to document actual emissions (e.g. NO_x emissions during an ESP failure).

(10) A verified emission factor developed pursuant to this division and approved by the Department can not be used if a process change occurs that would affect the accuracy of the verified emission factor.

(11) The owner or operator may elect to use verified emission factors for source categories if the Department determines the following criteria are met:

(a) The verified emission factor for a source category must be based on verified emission factors from at least three individual sources within the source category;

(b) Verified emission factors from sources within a source category must be developed in accordance with this rule;

(c) The verified emission factors from the sources must not differ from the mean by more than twenty percent; and

(d) The source category verified emission factor must be the mean of the source verified emission factors plus the average of the source emission estimate adjustment factors.

[Publications: The publication(s) referenced in this rule is available from the agency.]

[ED. NOTE: The equation(s) referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 468.020
Stats. Implemented: ORS 468A.025

DEPARTMENT OF ENVIRONMENTAL QUALITY
STATEMENT OF NEED AND JUSTIFICATION
A Certificate and Order for Filing Temporary Administrative Rules accompanies this form.

Department of Environmental Quality
Agency and Division

OAR Chapter 340, Divisions 200, 218, 220
Administrative Rules Chapter Number

In the Matter of: Title V Permit Fee Increase, OAR Chapter 340, Divisions 200, 218, 220

Statutory Authority: ORS 468.020, 468A.025, ORS 468.065, ORS 468A.040, ORS 468A.310, and ORS 468A.315

Other Authority: N/A

Statutes Implemented: ORS 468A.315

Need for the Temporary Rule(s):

Temporary rules are needed to eliminate conflict between new statutory requirements and existing administrative rules and to maintain a single, timely Title V billing in 2007. Without a temporary rule, Title V fees increased by Senate Bill (SB) 107, which became effective upon passage on June 20, 2007, will conflict with current fees specified in OAR 340-220-0030 through 0070. A temporary rule authorizing increased Title V fees will allow the Department to meet its customary schedule for assessing Title V fees, including the fee increase required by SB 107, codified in ORS 468A.315. Without temporary rules, the Department would need to invoice Title V sources in August 2007 for the fees currently specified in OAR 340-220-0030 through 0070, and after adoption of new fees several months later, send a supplemental invoice based on the difference between the current fees and the newly increased fees. Two invoices for permit fees will cause confusion, potential budgeting difficulties for fee payers, and additional work for the Department and regulated community. The temporary rule also changes definitions for regulated pollutants to conform to new statutory requirements of SB 107.

Background

Title V of the Federal Clean Air Act requires the nation's highest-emitting facilities to have federally enforceable operating permits. In 1991, the Oregon Legislature established Oregon's Title V Permitting program, an important part of the Department's strategy to maintain clean air. The purpose of the program is to ensure a high level of compliance with air quality regulations by Oregon's highest-emitting facilities. Title V facilities in Oregon include power generation, paper and other wood products and fiberglass production. Title V permits include all applicable emission limits, require monitoring to verify compliance with each limit, and require permit holders to certify compliance every six months. An effective Title V Program helps reduce the number of unhealthy air days and risk from toxic air pollution while supporting vibrant economies and accommodating rapid population growth.

Both federal and state laws require the Title V program to be entirely funded by permit fees. Federal law also requires the fees to be set at a level sufficient to cover all reasonable direct and indirect costs of the program. Like many states, Oregon's Title V program is funded mainly with a fee per ton of emissions. A smaller part of the funding comes from a base fee per permit and specific fees for activities such as permit modifications. The fees pay for permitting, technical assistance, inspections, enforcement, rule and policy development, data management and reporting to EPA. Title V fees also support a portion of air quality monitoring, planning and program management costs. ORS 468A.315 authorizes the Environmental Quality Commission (EQC) to annually increase the fees by up to the amount that the Consumer Price Index (CPI) increases. This provision is an attempt to comply with the federal requirement that Title V fee revenue fully fund the program.

For the first time since Title V Program authorization in 1993, the Department requested that the 2007 Oregon Legislature increase Title V fees by approximately 24%. This fee increase beyond yearly Consumer Price Index (CPI) increases is necessary to keep up with cost increases and to maintain federal approval of Oregon's Title V Permitting program. Title V fees are specifically set in statute and rule, so both legislative and rule changes are necessary to modify them. This increase would affect approximately 120 businesses with Title V Permits in Oregon.

As a result of the Department's request, SB 107 was passed to ensure adequate funding for Oregon's Title V Program. SB 107 authorizes a fee increase of 24 percent to be phased in over three years: 2007, 2008 and 2009. The fee increase will restore the Department's ability to issue timely permits, ensure compliance, and provide information to the public.

SB 107 creates new statutory requirements for regulated pollutants. It requires the EQC to establish by rule the size fraction of total particulates subject to emission fees. Implementing this change in Title V fee rules will provide for DEQ to assess emission fees on particulates based on new federal particulate standards. SB 107 changes the definition of regulated pollutant to simplify billing of emission fees. Currently, there are several regulated pollutants in the Title V fee rules that fall under more than one pollutant category in Title V permits. This creates extra work for DEQ to prevent double billing of emission fees on these pollutants. Implementing the definition change in Title V fee rules will reduce DEQ resources needed to bill on emission fees.

SB 107 requires the EQC to provide more information to the public when adopting, amending or repealing rules that apply to Title V facilities. If the EQC proposes rules in addition to federal requirements, the bill requires the public notice to describe the differences, the reasons for the differences, the alternatives considered, and the reasons the alternatives were rejected. Persons affected by the additional rules can request a public hearing before the Environmental Quality Commission to express their views directly to the Commission rather than indirectly through the Department. Because the additional information and hearing requirements are adequately addressed in SB 107 and there are no directly conflicting administrative rules, it is not necessary to adopt this provision as a temporary rule.

Documents Relied Upon:
Senate Bill 107 (a Public Law number is not yet available) and ORS 468A.315. Documents relied upon are available by contacting DEQ or online as follows:

- SB 107 is available at: http://www.leg.state.or.us/07reg/measpdf/sb0100.dir/sb0107.en.pdf
- ORS 468A.315 is available at: http://www.leg.state.or.us/ors/468a.html

Justification of Temporary Rule(s):
The Commission finds that failure to adopt the temporary rule will result in serious prejudice to the public interest because it will have the following consequences:

SB 107, which requires increased Title V permitting fees, will directly conflict with the fees in OAR 340-220-0030 through 0070. The Department must revise its regulations so that they comply with statute. It must do so immediately because the Department invoices Title V permit holders for fees no later than August of each year, and thus if it did not immediately revise its rules, the invoices might not comply with applicable law. Alternatively, if the Department proceeded with a permanent rulemaking, the rulemaking would not be complete before the August 2007 invoices were sent. In that case, the Department would be required to invoice the 2007 Title V permit fees twice - the typical invoice in August, and a supplemental invoice at the conclusion of permanent rulemaking. The supplemental invoice would cause additional cost and budgeting difficulties for the Department and Title V permit holders. It would likely produce errors, confusion and additional non-productive work for the Department and regulated community.

Housing Cost Impacts:
The Department has determined that the proposed rulemaking may have a negative impact on the development of a 6,000 square foot parcel and the construction of a 1,200 square foot detached single family dwelling on that parcel because increased permit fees could be passed along in the form of slightly higher costs for development and construction (such as building products and utilities). The Department is not able to quantify the impact of the proposed rulemaking due to a lack of available information, but expects the impact to be minimal.

Stephanie Hallock — 7-25-07

Stephanie Hallock, Director
On Behalf of the Commission

Date Signed

Enrolled
Senate Bill 107

Printed pursuant to Senate Interim Rule 213.28 by order of the President of the Senate in conformance with presession filing rules, indicating neither advocacy nor opposition on the part of the President (at the request of Governor Theodore R. Kulongoski for Department of Environmental Quality)

CHAPTER .....

AN ACT

Relating to emission fees for major sources; creating new provisions; amending ORS 468A.315; and declaring an emergency.

Be It Enacted by the People of the State of Oregon:

SECTION 1. ORS 468A.315 is amended to read:

468A.315. [*(1)(a)*] **(1)** [*Beginning one year after the date of submittal of the federal operating permit program to the Administrator of the United States Environmental Protection Agency,*] The fee schedule required under ORS 468.065 (2) for a source subject to the federal operating permit program shall be based on a schedule established **every two years** by rule by the Environmental Quality Commission in accordance with this section. Except for the additional fee under subsection [*(2)(f)*] **(2)(e)** of this section, this fee schedule shall be in lieu of any other fee for a permit issued under ORS 468A.040, 468A.045 or 468A.155. The fee schedule shall cover all reasonable direct and indirect costs of implementing the federal operating permit program and shall consist of:

[*(A)*] **(a)** An emission fee [*of $25*] per ton of **each** regulated pollutant emitted during the prior calendar year as determined under subsection (2) of this section**, subject to annual fee increases as set forth in paragraph (d) of this subsection. The following emission fees apply:**

(A) $27 per ton emitted during the 2006 calendar year.

(B) $29 per ton emitted during the 2007 calendar year.

(C) $31 per ton emitted during the 2008 calendar year and each calendar year thereafter.

[*(B)*] **(b)** Fees for the following specific elements of the federal operating permit program:

[*(i)*] **(A)** Reviewing and acting upon applications for modifications to federal operating permits.

[*(ii)*] **(B)** Any activity related to permits required under ORS 468A.040 other than the federal operating permit program.

[*(iii)*] **(C)** Department of Environmental Quality activities for sources not subject to the federal operating permit program.

[*(iv)*] **(D)** Department review of ambient monitoring networks installed by a source.

[*(v)*] **(E)** Other distinct department activities created by a source or a group of sources if the [*Environmental Quality*] commission finds that the activities are unique and specific and that additional rulemaking is necessary and will impose costs upon the department that are not otherwise covered by federal operating permit program fees.

[*(C)*] **(c)** A base fee for a source subject to the federal operating permit program. This base fee shall be no more than [*$2,500,*] **the fees set forth in subparagraphs (A) to (D) of this paragraph,**

subject to increases as set forth in [*subparagraph (D) of this paragraph*] **paragraph (d) of this subsection:**

(A) $2,700 for the period of November 15, 2007, through November 14, 2008.

(B) $2,900 for the period of November 15, 2008, through November 14, 2009.

(C) $3,100 for the period of November 15, 2009, through November 14, 2010.

(D) $4,100 for the period of November 15, 2010, through November 14, 2011, and for each annual period thereafter.

[*(D)*] **(d)** An annual increase **in the fees set forth in paragraphs (a) to (c) of this subsection** by the percentage, if any, by which the Consumer Price Index exceeds the Consumer Price Index for the calendar year 1989 if the commission determines by rule that the increased [*fee is*] **fees are** necessary to cover all reasonable direct and indirect costs of implementing the federal operating permit program.

[*(b) If the administrator grants interim or partial approval of the federal operating permit program and the commission determines the interim or partial approval results in a reduction in the reasonable direct and indirect costs of developing and administering the program to less than the level supported by the fee, the commission shall reduce the emission fee established by this section commensurate with the reduction in the department's responsibilities under Title V of the Clean Air Act. The reduced fee shall apply until the commission determines that the cause for the interim or partial approval has been eliminated.*]

(2)(a) The fee on emissions of regulated pollutants required under this section shall be based on the amount of each regulated pollutant emitted during the prior calendar year as documented by information provided by the source in accordance with criteria adopted by the commission or, if the source elects to pay the fee based on permitted emissions, the fee shall be based on the emission limit for the plant site of the major source.

[*(b) If the fee on PM10 emissions is based on the plant site emission limit for a source that does not have a plant site emission limit for PM10, the department may assess the fee on the plant site emission limit for total suspended particulates in lieu of PM10.*]

[*(c)*] **(b)** The fee required by [*this*] **subsection (1)(a) of this** section [*shall*] **does** not apply to any emissions [*of any regulated pollutant or total suspended particulates, whether permitted or documented,*] in excess of 4,000 tons per year of [*that pollutant*] **any regulated pollutant through calendar year 2010 and in excess of 7,000 tons per year of all regulated pollutants for each calendar year thereafter.** [*There shall be no revision of*] **The department may not revise** a major source's plant site emission limit due solely to payment of the fee on the basis of documented emissions.

[*(d)*] **(c)** The commission shall establish by rule criteria for the acceptability and verifiability of information related to emissions as documented, including but not limited to the use of:

(A) Emission monitoring;

(B) Material balances;

(C) Emission factors;

(D) Fuel use;

(E) Production data; or

(F) Other calculations.

[*(e)*] **(d)** The department shall accept reasonably accurate information that complies with the criteria established by the commission as documentation of emissions.

[*(f)*] **(e)** The rules adopted under this section shall require an additional fee for failure to pay, substantial underpayment **of** or late payment of emission fees.

(3) The commission shall establish by rule the size fraction of total particulates subject to emission fees as particulates under this section.

[*(3)*] **(4)** As used in this section:

(a) "Regulated pollutant" [*has the meaning given in section 502(b) of the Clean Air Act*] **means particulates, volatile organic compounds, oxides of nitrogen, and sulfur dioxide**; and

(b) "Consumer Price Index" has the meaning given in [*section 502(b) of the Clean Air Act.*] **42 U.S.C. 7661a(b), as in effect on the effective date of this 2007 Act.**

SECTION 2. Section 3 of this 2007 Act is added to and made a part of ORS 468A.300 to 468A.330.

SECTION 3. (1) Prior to the adoption, amendment or repeal of any rule pursuant to ORS chapter 183 that applies to any facility required to pay fees under ORS 468A.315, the Environmental Quality Commission shall include with the notice of intended action required under ORS 183.335 (1) a statement of whether the intended action imposes requirements in addition to the applicable federal requirements and, if so, shall include a written explanation of:

(a) The commission's scientific, economic, technological, administrative or other reasons for exceeding applicable federal requirements; and

(b) Any alternatives the commission considered and the reasons that the alternatives were not pursued.

(2) The statement provided by the commission under subsection (1) of this section shall be based upon information available to the commission at the time the commission prepares the written explanation.

(3) Notwithstanding ORS 183.335 (3), an opportunity for an oral hearing before the commission regarding the statement specified in subsections (1) and (2) of this section shall be granted only if:

(a) The request for a hearing is received, within 14 days after the commission issues the notice of intended action required under ORS 183.335 (1), from 10 persons or from an association having no fewer than 10 members; and

(b) The request describes how the persons or association that made the request will be directly harmed by the adoption, amendment or repeal of a rule under subsection (1) of this section.

(4) If an oral hearing is granted under subsection (3) of this section, the commission shall give notice of the hearing at least 14 days before the hearing to the persons or association requesting the hearing, to any persons who have requested notice pursuant to ORS 183.335 (8) and to the persons specified in ORS 183.335 (15).

(5) Subsection (3) of this section does not apply if the commission includes with the notice of intended action required under ORS 183.335 (1) a notice that an oral hearing will be held before the commission.

(6) The provisions of this section do not apply to temporary rules adopted by the commission under ORS 183.335 (5).

SECTION 4. (1) The amendments to ORS 468A.315 (1)(a) by section 1 of this 2007 Act apply only to emission fees assessed for calendar years beginning on or after January 1, 2006.

(2) The amendments to ORS 468A.315 (1)(c) by section 1 of this 2007 Act apply only to base fees assessed on or after July 1, 2007.

(3) If this 2007 Act becomes effective after July 1, 2007, the Department of Environmental Quality shall issue a supplemental billing for the additional fees owing under ORS 468A.315 (1)(a) and (c), as amended by section 1 of this 2007 Act, for fees assessed between July 1, 2007, and the effective date of this 2007 Act.

SECTION 5. This 2007 Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this 2007 Act takes effect on its passage.

Passed by Senate May 14, 2007

.....
Secretary of Senate

.....
President of Senate

Passed by House June 5, 2007

.....
Speaker of House

Received by Governor:

.....M.,....., 2007

Approved:

.....M.,....., 2007

.....
Governor

Filed in Office of Secretary of State:

.....M.,....., 2007

.....
Secretary of State

CURTIS Andrea Handed out

From: GINSBURG Andy
Sent: Wednesday, August 15, 2007 8:26 PM
To: CURTIS Andrea
Cc: PAPISH Uri
Subject: Fw: Motion for Agenda Item H

Andrea, please print and bring this to EQC. Thanks.

Andy Ginsburg, DEQ Air Quality Administrator

Sent from my wireless handheld

-----Original Message-----
From: Knudsen Larry <larry.knudsen@doj.state.or.us>
To: GINSBURG Andy <Andy.Ginsburg@state.or.us>
CC: LOTTRIDGE Helen <Helen.Lottridge@state.or.us>; Logan Paul S <paul.s.logan@doj.state.or.us>
Sent: Wed Aug 15 14:41:27 2007
Subject: Motion for Agenda Item H

Andy,

Commissioner Blosser recently reminded Stephanie that he wants staff recommendations to be sufficient to serve as complete motions for approval. I noticed that the staff recommendation for Agenda Item H (Title V Fees) does not include Commission adoption of the findings required a temporary rule. (The findings are set out in Attachment B of the Staff Report, but the recommendation doesn't address findings and only incorporates Attachment A.) It might be a good idea to point this out at the conclusion of your staff presentation. Specifically, I would suggest adding: "Adoption of the Justification for Temporary Rules that is set out in Attachment B of the Staff Report."

Larry Knudsen, Assistant Attorney General
Department of Justice
1515 SW Fifth Ave. Ste 410
Portland, OR 97201
Phone: (971) 673-1880
Fax: (971) 673-1886
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Handout Item H

EQC – August 16, 2007

Department of Environmental Quality
Proposal for Temporary Rule Amendments

Oregon Title V Operating Permit Program Fee Increase

Title V Program

- Prevents air pollution
- Required by Clean Air Act
- Funded by permit fees

Need for temporary rule amendments

- Senate Bill 107 increased Title V fees
- Align rule with revised statute
- Insufficient time for permanent rulemaking
- Issue 2007 invoices
- Avoid second billing
- Cover increases in program costs
- Maintain federal approval of the program
- Fund Fiscal Year 2008

Effect of temporary rule amendments

- Increase fees by 2006 consumer price index (CPI)
- Implement fees in statute for 2007 billing
- Correct CPI formula

Proposed increase to fees

Fee Categories	**From:**	**To:**	**Difference:**
Base Fee	$3,379	$4,390	$1,011
Emission Fee (per ton)	$39.38	$43.90	$4.52
Specific Activity Fees:			
Permit Revision			
Administrative	$338	$406	$68
Simple	$1,352	$1,626	$274
Moderate	$10,137	$12,194	$2,057
Complex	$20,273	$24,387	$4,114
Ambient Review	$2,703	$3,252	$549

Please Sign In

Environmental Quality Commission Meeting
Portland, Oregon August 16 9:30AM - 4:30PM

for perm record Aug 07

Name	Organization	
Carolyn Higgins		541
Loric Higgins		" " "
Karyn Jones	GASP et al	541-567-6579
Tom Wood	Stoel Rives	503 294 9346
Doug Drake	ODEQ	503-229-5350
Janet Gillaspie	ACWA	503/236.6722
Gene Foster	DEQ	503 229 5325
CLAIRE TONRY	NEDC	541.510.9412
Perrin de Jong	CWWG	503-232-5221
Diane Lynch		503-855-3239
Don Gulpen	WELC	541 485 2471
Larry Tuttle	CSE	(503) 221-1683
Carla Harvest		(541) 688-5903
Bob Carolan	Oregon Lung Specialists	541-687-1712
J. Byers	ODA	503-986-4718
Greg Aldrich	DEQ	503-229-6345
JOHN LEDGER	AOI	503-588-0050
Paul Holvey	State representative	503-986-1408
Brian White	DEQ-Communications	
ROB ROCKSTROH	LANE COUNTY	541 682-4035
Katie Fast	Farm Bureau	503.399.1701
Tom Silberstein	OSU Extension	503-373-3756
Mitch Lies	Capital Press	503-364-4431
BRYAN OSTLUND	ORE RYEGRASS COMMISSION	503-364-2944
GARY CROSSAN		
Mike Hayes	Oregon RyeGrass Comission Seed Grower	541-979-0645

K:\EQC\Meeting Materials\Sign-in sheet.doc

Please Sign In

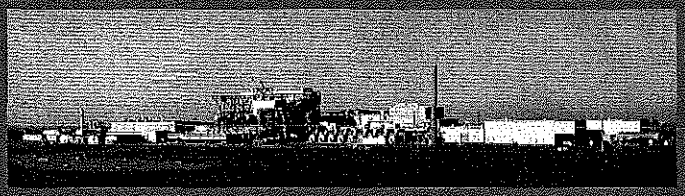
Environmental Quality Commission Meeting
Portland, Oregon August 16 9:30AM - 4:30PM

Name	Organization	Phone
Ray Wilkeson	OFIC	503-371-2942
Dave Nelson	OSE	503 585-1157
Don Haagensen	Cable Huston et al.	503-224-3092
Jack Pimm	Farmer	541-491-3732
Bonny Pimm	" "	541-491-3732
Betty Fieber	" "	541-491-3732
Leroy Spurlin	Farmer	541-466-5847
Eric Bowers	Farmer	541-995-8108
Ronald J. Jogh	Farmer	
Brenda Wilson	City of Eugene	541-682-8441

ITEM B-1

Department of Environmental Quality

Best Available Technology for Secondary Waste at the Umatilla Chemical Agent Disposal Facility



Department of Environmental Quality

Statement of Purpose

- Purpose:
  - GASP I remand requires Best Available Technology determination for technologies in lieu of DUN
- Objective:
  - Define secondary wastes
  - Identify wastes originally intended for the DUN
  - Identify technologies available for treatment of secondary wastes
- Summary:
  - The DUN is not the BAT for processing secondary wastes
  - Technologies are already in place at the UMCDF to successfully treat secondary wastes
  - *The technologies in place are more timely, cost effective, and technologically superior to the construction and operation of a DUN*

Department of Environmental Quality

Secondary Wastes

- **Definition**
- **Examples include:**
  - Laboratory operations
  - Protection of personnel or the environment
  - Facility maintenance
- **Regulatory requirements**

Department of Environmental Quality

The Six Major Secondary Waste Streams at the UMCDF

- Spent activated carbon
- Brine solutions or brine salts
- Dunnage
- Metal from munitions or ton containers
- Other miscellaneous solid wastes
- Spent decontamination solutions

Department of Environmental Quality

UMCDF Secondary Waste Treatment Parameters

- Secondary waste characterization
- On-site treatment
- Viability of incineration

Department of Environmental Quality

Secondary Waste Obstacles

- Permit requirements and process limitations
- Accumulation of secondary wastes
- Maintaining compliance with all applicable laws
- Time consuming

Department of Environmental Quality

Secondary Wastes Originally Intended for the DUN

- Dunnage
- Spent Activated Carbon
- Miscellaneous Solid Wastes

Department of Environmental Quality

Spent Activated Carbon

- Rates of generation
- Present management practices

Department of Environmental Quality

Dunnage

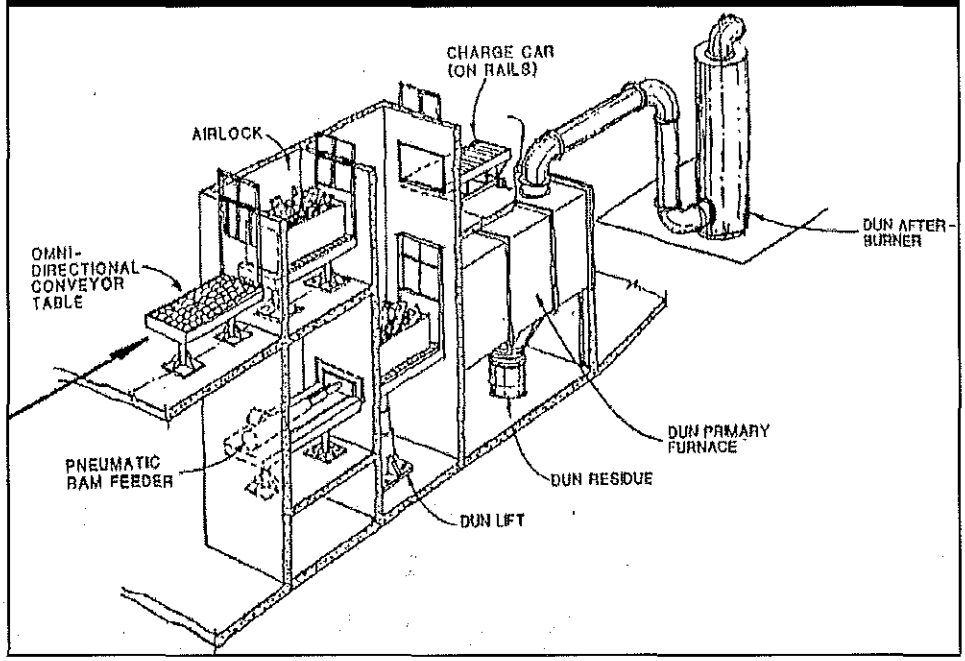
- Composition
- Types
  - Non-hazardous
  - Hazardous
- Present management practices

Department of Environmental Quality

Miscellaneous Solid Wastes

- Composition
  - Laboratory solids
  - Rags
  - Paper
  - Clean-up material
  - TAP Gear
- Does not include Demilitarization Protective Ensemble

Dunnage Incinerator



Department of Environmental Quality

DEQ

Dunnage Incinerator Operational Experience

- Johnston Atoll Chemical Agent Disposal System (JACADS)
- Tooele Chemical Agent Disposal Facility (TOCDF)
- Anniston Chemical Agent Disposal Facility (ANCDF)
- Pine Bluff Chemical Agent Disposal Facility (PBCDF)
- Umatilla Chemical Agent Disposal Facility (UMCDF)

Department of Environmental Quality

JACADS Operational Experience

- Constructed
- Operational history
  - Operated between June 1989 and March 1996
- Utilization
  - Limited primarily to wood and cardboard
  - Trial burn

Department of Environmental Quality

JACADS DUN Operational Experience (Cont)

- Problems
  - Operational difficulties
  - Abandoned in place
- Alternatives Chosen
  - CMS for spent carbon
  - Deactivation Furnace System and Metal Parts Furnace
- Lessons Learned

Department of Environmental Quality

TOCDF DUN Operational Experience

- Constructed
- Operational History
- Problems
- Alternative Chosen

Department of Environmental Quality

ANCDF DUN Operational Experience

- Constructed
- Operational History
- Problems
- Alternative Chosen

Department of Environmental Quality

UMCDF/PBCDF Dunnage Incinerators

- Constructed – N/A
- Operated – N/A
- Problems – N/A

Department of Environmental Quality

UMCDF Applicable Secondary Waste Permit Modification Requests

- **Pre-Agent Operations:**
  - 02-013 DFS Secondary Waste Treatment
  - 02-014 MPF Secondary Waste Treatment
  - 02-016 Addition of the Wood Pallet Waste Stream to the WAP
  - 03-035 Depot Secondary Waste
- **Post Start-Up:**
  - 05-034 DUN/CMS
  - 06-020 MPF Post-Trial Burn and Secondary Waste Feed Rate Clarifications
  - 06-033 MPF Secondary Waste Trial Burn Plan

Department of Environmental Quality

UMCDF Secondary Waste Alternatives

- With the exception of agent contaminated spent carbon, all waste streams originally intended for the DUN are currently permitted for other existing furnaces:
  - Spent activated carbon
    - CMS/DFS
    - Under consideration
  - Dunnage
    - Agent-contaminated permitted for the MPF
  - Plastics, particularly used demilitarization protective equipment
    - Contaminated DPE slated for the MPF
    - Secondary waste trial burn conducted January 2007

Department of Environmental Quality

Sample of Select Criteria Pollutant Emissions from the Metal Parts Furnace Secondary Waste Trial Burn

Parameter	Units	Run 1	Run 2	Run 3	Run 4	Average	RCRA Permit Limit/ MACT Standard
Carbon Monoxide	ppmv	5.94	9.54	6.90	8.28	7.92	100 ROHA
Oxygen	%	11.86	11.89	12.02	11.84	11.86	4.8 (2MRA) to 14
Oxygen	%	12.1	11.9	12.2	12.2	12.05	---
Total Hydrocarbons	ppmv	7.51	5.45	6.83	5.67	6.21	10 ROHA

Department of Environmental Quality

Sample of Select Criteria Pollutant Emissions from the Metal Parts Furnace Secondary Waste Trial Burn (cont)

Parameter	Units	Run 1	Run 2	Run 4	Average	RCRA Permit Limit/MACT Standards
Hydrogen Chloride						
Emission Rate	g/s	< 2.66E-04	< 2.52E-04	< 2.70E-04	< 2.63E-04	8.16E-03
Chlorine						
Emission Rate	g/s	< 4.61E-04	< 4.39E-04	< 4.52E-04	< 4.50E-04	2.57E-02
Combined HCl/Cl_2 (Expressed as HCl equivalents)						
Concentration	ppm @ 7% O_2	< 0.26 [ND]	< 0.25 [ND]	< 0.26 [ND]	< 0.26 [ND]	21
Hydrogen Fluoride						
Emission Rate	g/s	< 2.71E-04	< 2.58E-04	< 2.75E-04	< 2.68E-04	1.93E-02
Particulate Matter						
Emission Rate	g/s	6.18E-03	5.49E-03	6.50E-03	6.06E-03	5.04E-02

Department of Environmental Quality

Available Options for Treatment of Secondary Waste Originally Intended for the DUN

- Installation and operation of the DUN
- Discontinuation of secondary waste processing until the end of agent campaigns
- Off-site treatment
- Utilization of the MPF and DFS to treat secondary wastes

Department of Environmental Quality

DEQ

Installation and Operation of the DUN

- Costs
- Technology
- Operational History

Department of Environmental Quality

DEQ

Discontinue Processing of Secondary Waste Until the End of Agent Operations

- Inefficient use of existing furnaces
- Increased risk to workers
- Lessons learned at JACADS
- Extends the life of the project

Department of Environmental Quality

Off-Site Treatment of Secondary Wastes

- Two industrial facilities available
  - Utah
  - Texas
- Increased risk to workers
- Inherent risks in transportation
- High stakeholder opposition

Department of Environmental Quality

Utilization of the DFS and MPF

- Requires no additional resources
- Technology
- Operational History

Department of Environmental Quality

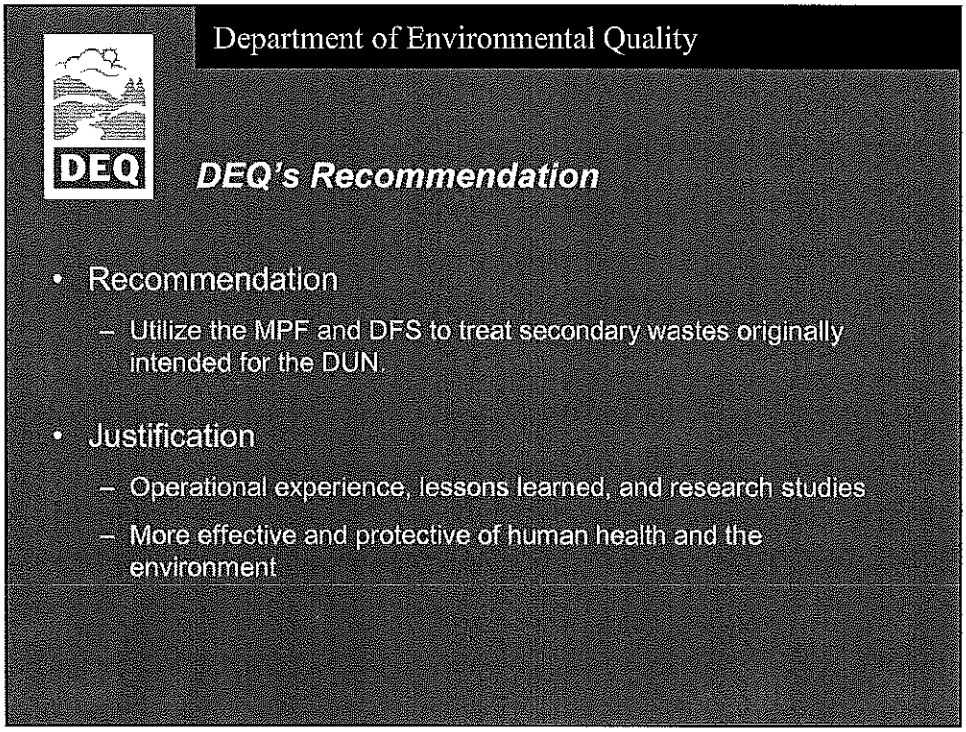
Stakeholder Interest

- **Public Comments**
  - Umatilla County
  - City of Hermiston
  - Private citizens
  - GASP

Department of Environmental Quality

Stakeholder Interest

- Confederated Tribes of the Umatilla Indian Reservation concerns:
  - Opposes the transfer of waste across their land
  - Interested in an expedient end to UMCDF operations
- Supports the use of the DFS/MPF


Department of Environmental Quality
DEQ
DEQ's Recommendation
• Recommendation
– Utilize the MPF and DFS to treat secondary wastes originally intended for the DUN.
• Justification
– Operational experience, lessons learned, and research studies
– More effective and protective of human health and the environment

Please Sign In

Environmental Quality Commission Meeting
Portland, Oregon August 16 9:30AM - 4:30PM

Name	Organization	Phone
Carolyn Higgins		541-955-8060
Loric Higgins		" " "
Karyn Jones	HASP et al	541-567-6579
Tom Wood	Steel Rivers	503 299 9396
Doug Drake	ODEQ	503-229-5350
Janet Gillaspie	ACWA	503/236.6722
Gene Foster	DEQ	503 229 5325
Claire Tonry	NEDC	541.510.9412
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Diane Lynch		503-855-3239
Don Gulpen	WELC	541 485 2471
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J. Byers	ODA	503-986-4718
Greg Aldrich	DEQ	503-229-6345
John Ledger	AOI	503-588-0050
Paul Holvey	State representative	503-986-1408
Brian White	DEQ-Communications	
Rob Rockstroh	Lane County	541 682-4035
Katie Fast	Farm Bureau	503.399.1701
Tom Silberstein	OSU Extension	503-373-3756
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Bryan Ostlund	Ore Ryegrass Commission	503-364-2944
Gary Crossan		
Mike Hayes	Oregon RyeGrass Comission Seed Grower	541-979-0645