UTAH STATE DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
AIR QUALITY BOARD

REQUEST TO MAKE COMMENTS

NAME:	Carol Dalley
ORGANIZATION OR AFFILIATION:	Stansbury Citizens for Clean Air
GENERAL AREA OF COMMENT:	Stake Pavers
AMOUNT OF TIME REQUESTED:	2 min
WILL A WRITTEN COMMENT BE SUBMITTED?	

UTAH STATE
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY

9

UTAH AIR QUALITY BOARD MEETING

January 3, 2001

PLEASE PRINT

NAME	AFFILIATION
BRIAN HARDY	MAG
Emily Hall	Clean Air Coalition
Scott Widmer	CHEVRON
Blaine Zwahlen	Inland Refining
[illegible]	Inland Refining
Dan Nelson	MAG
Mike Strong	EG&G
Dick Snell	EG+G
James Chapman	DAQ
Bryce Bird	DAQ
Jason Groenewold	FAIR
Lydia Salmon	Kennecott Utah Copper
Tim Harris	UAPCA
Mike Peter	ATK
Myrl Bunsen	
Carol L Heckler	citizen
Darcell Cook	MAG
Delane McGarvey	Davis County Env. Health
Kal Wilde	Mayor Oakley & Hall

UTAH STATE
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY

UTAH AIR QUALITY BOARD MEETING

January 3, 2001

PLEASE PRINT

NAME	AFFILIATION
Richard Bath	WES
Kathy VanDam	WCNC

State of Utah

Utah Air Quality Board

150 North 1950 West
P.O. Box 144820
Salt Lake City, Utah 84114-4820
(801) 536-4000
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AIR QUALITY BOARD MEETING

FINAL AGENDA

January 3, 2001
1:30 P.M.

168 N. 1950 W. (Building #2) Room 101

There will be a work session of the Board from noon until 1:30. The session will focus on how DAQ can improve the approval order process and background information on the current energy shortage.

I. Call to Order
II. Date of Next Meeting
III. **Appointment of Executive Secretary**
IV. **Approval of Minutes of the December 6, 2000, Board meeting**
V. **Propose for Final Adoption:** R307-204, Emission Standards: Smoke Management **(Frances Bernards)**
VI. **Propose for public comment:** Modify R307-103-2(2)(b), Administrative Procedures, to change date of issuance of initial orders **(Lenore Epstein)**
VII. **Request for Variance:** Foreland Refining Corporation **(Tim DeJulis)**
VIII. **Request for Variance:** Inland Refining Company **(John Jenks)**
IX. Information Items
  A. Compliance activities for November 2000 **(Marv Maxell)**
  B. HAPS compliance activities for November 2000 **(Bryce Bird)**
  C. Monitoring data for November 2000 **(Bob Dalley)**
  D. SIPs Update **(Jan Miller)**
X. Miscellaneous

In compliance with the Americans with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Charlene Lamph, Office of Human Resources, at 536-4413 (TDD 536-4414) at least five working days prior to the scheduled meeting/hearing.

- MINUTES -
UTAH AIR QUALITY BOARD MEETING
JANUARY 3, 2001

I. CALL TO ORDER

Howard Van Boerum called the meeting to order at 1:40 p.m.

Board members present:

David B. George	Shelly Cordon Teuscher	John M. Veranth
Wayne M. Samuelson	J. Howard Van Boerum	Dianne R. Nielson
Joseph D. Thompson	Dannie R. McConkie	JoAnn Seghini
Richard R. Olson	Karl F. Brooks	

Executive Secretary: Richard W. Sprott

II. DATE OF THE NEXT AIR QUALITY BOARD MEETING

The next Air Quality Board meeting will be held Wednesday, February 7, 2001, at 1:30 p.m.

III. APPOINTMENT OF EXECUTIVE SECRETARY

Dianne Nielson, Board member and Executive Director of the Department of Environmental Quality, made the motion to designate Richard W. Sprott as the Executive Secretary of the Air Quality Board. Richard Olson seconded the nomination. The voting was unanimous.

IV. APPROVAL OF THE MINUTES OF THE DECEMBER 6, 2000, BOARD MEETING

Joseph Thompson made the motion to approve the minutes of the December Air Quality Board meeting. Dannie McConkie seconded the motion. The motion carried.

V. PROPOSE FOR FINAL ADOPTION: R307-204, EMISSION STANDARDS: SMOKE MANAGEMENT

Presenter: Frances Bernards, Environmental Scientist

As requested by the Board, a meeting was held with affected land managers to discuss the proposed rule. This meeting was held on October 17, 2000, and a public hearing was held on November 1. Several changes were proposed as a result of comments received. The rule now states that it does not apply to agricultural activities that are regulated by the general burning rules, and it doesn't apply to activities that are permitted in other places in the [DAQ] rules. Also, the land managers are no longer required to notify the executive secretary when small prescribed fires are ignited (less than 20 acres in size and generate less than ½ ton of particulate matter). The rule requires that ignition of those fires can only occur when the clearing index is greater than 500.

Staff recommendation is that the smoke management rule be adopted with the aforementioned changes.

Oxyfuel inspections have increased due to the fact that it's the oxyfuel season. At this time of the year, most complaints deal with odor problems. Mr. Maxell explained the reasons behind the Notices of Violation issued in November.

B. HAPS Compliance Activities - Bryce Bird

No questions or comments.

C. Monitoring Data - Bob Dalley

Mr. Dalley reviewed monitoring data for November. Based on the criteria for PM2.5, the Division called some "yellow" and "red" burn days during December. Health advisories were also called based on PM2.5 criteria.

D. SIPs Update - Dave McNeill

At present, DAQ is working on three SIPs: PM10, SO2, and Ozone. On January 17, there will be a PM10 SIP inventory workgroup meeting to discuss the UAM-AERO model, MOBIL6, status of the actual SIP, emissions inventory, and SIP controls for industry.

SO2: A redesignation request has been submitted to EPA for SO2 for Salt Lake and Tooele Counties. EPA responded stating they needed more information, so work is ongoing to obtain the requested information.

Ozone: Ozone levels were elevated throughout the entire Wasatch Front, as far north as Logan. It's believed that the high ozone levels were exacerbated by the fires in the area. The data submitted to EPA was flagged for these fires and hopefully EPA will take the fires into account when evaluating the data and prevent the Wasatch Front from becoming nonattainment for ozone.

X. MISCELLANEOUS

Comments from Carol Gallup of Stansbury Citizens for Clean Air regarding Staker Paving

Ms. Gallup stated that the citizen's group is frustrated with this issue and feels Jon Black (DAQ environmental engineer) presented faulty information at last month's Board meeting and did not conduct a thorough search regarding best available control technology (Ms. Gallup discovered that an afterburner is used to help control odors in the Los Angeles area). The citizens of Stansbury feel, in this particular instance, that DAQ is looking for a "win" situation for Staker, not for the people.

Rick Sprott, Executive Secretary, commented that Jon Black communicated directly with a number of permitting engineers, not only in Southern California, but in other states, in order to fulfill the Board's request to research control technology for asphalt plants. The information found by Ms. Gallup and others on a web site about an afterburner deals with a nuisance rule and zoning regulations that are effective in

California. From information received from engineers in California, afterburners are not typically installed in asphalt plants. It was not Mr. Black's intent to provide misleading information.

Mr. Sprott expressed concern over the perception that DAQ is not doing an adequate job of research for this issue. DAQ's first and foremost interest is public health. Absent of a solid health finding in terms of concentrations of the pollutants and the impacts they might have on health, DAQ does not have the regulatory power to demand further controls from Staker. Based on research and DAQ's power and statutes, there are limits as to what DAQ can do. Mr. Sprott commended Ms. Gallup and Robin Jenkins for their research and expressed sympathy for the situation.

Jon Black commented that in his research, especially in California, he concentrated on the South Coast district area. He spoke with permitting engineers and also representatives from that air quality board. It was that information that he reported to the Board last month. Mr. Black stated that he evidently missed some information on the web site and discovered that this area of California does suggest an afterburner as a control technology. The cost of an afterburner is very high. In considering an afterburner, there would be a reduction of 9-10 tons of VOC emissions, but the emission rate could increase due to the combustion of natural gas or alternate fuels. The NOx and CO emission rates would elevate higher than the reduction received in a VOC reduction. Out of 21 asphalt plants operating in the Bay area, only one is required to use an afterburner as a control device. The best available control technology analysis is done on a case-by-case basis.

Mr. Black expressed appreciation for the efforts of Robin Jenkins and Carol Gallup in bringing this information to DAQ. Unfortunately, it does not fall within the DAQ guidelines.

With no further business, the meeting adjourned at 3:57 p.m.

State of Utah
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
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MEMORANDUM

TO: Air Quality Board DAQ-109-00

THROUGH: Richard W. Sprott, Acting Executive Secretary

FROM: Frances Bernards, Environmental Scientist

DATE: December 22, 2000

SUBJECT: Propose for final adoption: R307-204, Emission Standards: Smoke Management

Attached is a summary of the comments received for R307-204, Emission Standards: Smoke Management and the associated responses. The document includes a section, titled Specific Comments, that summarizes comments pertaining to a certain section of the proposed rule, and a section that summarizes comments that are general in nature, titled General Comments. The summary of the comments made during the public hearing that was conducted on November 1, 2000, is included in the General Comments section. The comment period was from October 1 through November, 15, 2000.

During the August 2, 2000, Air Quality Board meeting a request was made to schedule a meeting with the affected land managers to discuss the proposed rule. The meeting was held on October 17, 2000, as requested.

Several changes were made to the rule as a result of the comments received. Several commenters noted that the applicability section of R307-204-2 should be clarified so activities that are regulated under R307-202, Emission Standards: General Burning are not also regulated under R307-204. The applicability section now states that R307-204 does not apply to the agricultural activities that are specified in 19-2-114, and to those regulated under R307-202, or to activities that are otherwise permitted under R307. This language change should clear up the confusion between the different rules.

Several commenters suggested that R307-204-6(1) be dropped due to the minimal emissions that are being addressed. This section of the rule requires that the land managers notify the executive secretary when small prescribed fires that are less than 20 acres in size and generate less than .5 tons of particulate matter are ignited. R307-204-6(1) has been deleted from the rule, since ignition can only occur when the clearing index is 500 or greater. Ignition during optimal dispersion conditions should ensure that public health is protected.

Staff Recommendation: Staff recommends that R307-204, Emission Standards, Smoke Management, be adopted with the changes as indicated.

R307. Environmental Quality, Air Quality.
R307-204. Emission Standards: Smoke Management.
R307-204-1. Purpose and Goals.

(1) The purpose of R307-204 is to establish by rule procedures that mitigate the impact on public health[~~, public safety~~] and visibility of prescribed fire and wildland fire.

R307-204-2. Applicability.

(1) R307-204 applies to all persons using prescribed fire or wildland fire on land they own or manage.

(2) R307-204 does not apply to agricultural activities specified in 19-2-114 and to those regulated under R307-202, or to activities otherwise permitted under R307.

R307-204-3. Definitions.

The following additional definitions apply only to R307-204.

"Burn Plan" means the plan required for each fire ignited by managers or allowed to burn.

"Burn Window" means the period of time during which the prescribed fire is scheduled for ignition.

"Class I Area" means Zion National Park, Bryce National Park, Capitol Reef National Park, Arches National Park, Canyonlands National Park.

"Fire Prescription" means the measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

"Land Manager"means any federal, state, local or private entity that owns, administers, directs, oversees or controls the use of public or private land, including the application of fire to the land.

"Maintenance Area" means an area that has been redesignated by EPA from nonattainment to attainment of any National Ambient Air Quality Standard.

"Prescribed Fire or Prescribed Burn" means any fire ignited by management actions to meet specific objectives, such as achieving resource benefits.

"Particulate Matter" means the liquid or solid particles such as dust, smoke, mist, or smog found in air emissions.

"Smoke Sensitive Receptors" means population centers such as towns and villages, campgrounds and trails, hospitals, nursing homes, schools, roads, airports, Class I areas, nonattainment and maintenance areas, areas whose air quality monitoring data indicate pollutant levels that are close to health standards, and any other areas where smoke and air pollutants can adversely affect public health, safety and welfare.

"Wildland" means an area in which development is essentially non-existent, except for pipelines, power lines, roads, railroads, or other transportation or conveyance facilities.

"Wildland Fire" means any non-structure fire, other than prescribed fire, that occurs in the wildland.

"Wildland Fire Used for Resource Benefits (WFURB)" means naturally ignited wildland fire that is managed to accomplish specific prestated resource management objectives in predefined geographic areas.

R307-204-4. General Requirements.

(1) Management of On-Going Fires. If, after consultation with the land manager, the executive secretary determines that a prescribed fire, wildland fire used for resource benefits, wildland fire, or any smoke transported from other locations, is degrading air quality to levels that could violate the National Ambient Air Quality Standards or burn plan conditions, the land manager shall promptly stop igniting[~~ignition actions on existing prescribed fires, curtail the ignition of~~] additional prescribed fires[~~ and suppress wildland fires~~].

(2) Emissions Calculations. In calculating emissions information required under R307-204, each land manager shall use emission factors approved by the executive secretary.

R307-204-5. Burn Schedule.

(1) Any land manager planning prescribed fire[~~ and wildland fire~~] burning more than 50 acres per year shall submit the burn schedule to the executive secretary on forms provided by the Division of Air Quality, and shall include the following information for all fires including those smaller than 50 acres:

(a) Project number and project name;

(b) Air Quality Basin, UTM coordinate for the central point of the prescribed fire, project elevation, and county;

(c) Total project acres, description of major fuels, type of burn, and ignition method;

(d) Earliest burn date and burn duration.

(2) Each land manager shall submit each year's burn schedule no later than March 15 of that year.

(3) Any land manager who makes changes to the burn schedule shall submit an amendment to the burn schedule within 10 days after the change.

R307-204-6. Small Prescribed Fires.

[~~(1) For a prescribed fire that covers less than 20 acres per burn and results in air emissions less than 0.5 tons of particulate matter per day, the land manager shall notify the executive secretary by fax, electronic mail or phone on the morning of the prescribed burn.~~

~~(2)~~]A prescribed fire that covers less than 20 acres per burn and results in air emissions less than 0.5 tons of particulate matter per day shall be ignited only when the clearing index is 500 or greater.

R307-204-7. Large Prescribed Fires.

(1) Burn Plan. For a prescribed fire that covers 20 acres or more per burn or results in air emissions of 0.5 tons or more of particulate matter per day, the land manager shall submit to the executive secretary a burn plan, including a fire prescription, two weeks before the beginning of the burn window.

(2) Pre-Burn Information. For a prescribed fire that covers 20 acres or more per burn or results in air emissions of 0.5 tons or more of particulate matter per day, the land manager shall submit pre-burn information to the executive secretary at least two weeks before the beginning of the burn window. The pre-burn information shall be submitted to the executive secretary on the form provided by the Division of Air Quality by fax, electronic mail or postal mail and shall include the following information:

(a) The three-letter ID, project number, date submitted, name of person submitting the form, burn manager, and phone numbers;

(b) Summary of burn objectives;

(c) Any Class I or Non-attainment Area within 15 miles;

(d) Any sensitive receptor and distance and direction in degrees from the project site;

(e) Planned mitigation methods;

(f) The smoke dispersion model used and results;

(g) The estimated amount of total particulate matter anticipated;

(h) A description of how the public will be notified;

(i) A map, preferably with a scale of 1:62,500, depicting both the daytime and nighttime smoke path and down-drainage flow for a minimum of 15 miles from the burn site with smoke-sensitive areas delineated;

(j) Safety and contingency plans for addressing any smoke intrusions; and

(k) If the fire is in a nonattainment or maintenance area and is subject to general conformity (42 U.S.C. 7506(c)), a copy of the conformity demonstration showing that the fire meets the requirements of the Clean Air Act and[~~, including the provision of 42 U.S.C. 7506(c), indicating that the fire~~] conforms with the applicable State Implementation Plan.

(3) Burn Request.

(a) The land manager shall submit to the executive secretary a burn request on the form provided by the Division of Air Quality by 10:00 a.m. at least two business days before the planned ignition time. The form may be submitted by fax or electronic mail, and must include the following information:

(i) The three-letter identification and project number consistent with the annual burn schedule required in R307-204-5(1) above;

(ii) The date submitted and by whom; and

(iii) The burn manager conducting the burn and phone numbers.

(b) No prescribed fire requiring a burn plan shall be ignited before the executive secretary approves or conditionally approves the burn request.

(c) If a prescribed fire is delayed, changed or not completed

following burn approval, any significant changes in the burn plan shall be submitted to the executive secretary before the burn request is submitted. If a prescribed fire is not carried out, the land manager shall list the reasons on the burn request form provided by the Division of Air Quality and shall submit the form by fax or electronic mail to the executive secretary by 8:00 a.m. the following business day.

(4) Daily Emissions Report. By 8:00 a.m. on the day following the prescribed burn, for each day of prescribed fire activity covering 50 acres or more, the land manager shall submit to the executive secretary a daily emission report on the form provided by the Division of Air Quality including the following information:

(a) The three-letter identification and project number consistent with the annual burn schedule required in R307-204-5(1) above;

(b) The date submitted and by whom;

(c) The start and end dates and times of the burn;

(d) Emission information including black acres, tons fuel consumed per acre, and tons particulate matter produced;

(e) Public interest regarding smoke;

(f) Daytime ventilation;

(g) Nighttime smoke behavior;

(h) Evaluation of whether the fire has met the criteria of the fire prescription; and

(i) Emission reduction techniques applied.

(5) Emission Reduction and Dispersion Techniques. Each land manager shall take measures to prevent smoke impacts. Such measures may include best management practices such as dilution, emission reduction or avoidance in addition to others described in the pre-burn information form provided by the Division of Air Quality. An evaluation of the techniques shall be included in the daily emissions report required by (4) above.

(6) Monitoring. Land managers shall monitor the effects of the prescribed fire on smoke sensitive receptors and on visibility in Class I areas, as directed by the burn plan. Hourly visual monitoring and documentation of the direction of the smoke plume shall be recorded on the form provided by the Division of Air Quality or on the land manager's equivalent form. Complaints from the public shall be noted in the project file. Records shall be available for inspection by the executive secretary for six months following the end of the fire.

R307-204-8. Requirements for Wildland Fire with Potential for Use for Resource Benefits.

(1) Burn Approval Required.

(a) The land manager shall notify the executive secretary by the close of business of the first day of any wildland fire that covers 20 acres or more. The notification shall include the following information:

(i) UTM coordinate of the fire;

(ii) Active burning acres;
(iii) Probable fire size and daily anticipated growth in acres;
(iv) Types of wildland fuel involved;
(v) An emergency telephone number that is answered 24 hours a day; and
(vi) Wilderness or Resource Natural Area designation, if applicable.
(b) The following information shall be submitted to the executive secretary 48 hours after submittal of the information required by (1)(a) above:
(i) Burn plan and anticipated emissions;
(ii) A map, preferably with a scale of 1:62,500, depicting both the daytime and nighttime smoke path and down-drainage flow for a minimum of 15 miles from the burn site with smoke-sensitive areas delineated; and
(iii) Additional computer smoke modeling, if requested by the executive secretary.
(c) The executive secretary's approval of the smoke management element of the burn plan shall be obtained before managing the fire as a wildland fire used for resource benefits.
(2) Daily Emission Report for Wildland Fire Used for Resource Benefits. By 8:00 a.m. on the business day following fire activity covering 50 acres or more, the land manager shall submit to the executive secretary the daily emission report on the form provided by the Division of Air Quality, including the following information:
(a) The three-letter identification, project number, Air Quality Basin, and name of the burn manager;
(b) UTM coordinate;
(c) Dates and times of the start and end of the burn;
(d) Black acres by wildland fuel type;
(e) Estimated proportion of wildland fuel consumed by wildland fuel type;
(f) Proportion of moisture in the wildland fuel by size class;
(g) Emission estimates;
(h) Level of public interest or concern regarding smoke; and
(i) Conformance to the burn plan.
(3) Monitoring. The land manager shall monitor the effects of smoke on smoke sensitive receptors and visibility in Class I areas as directed by the burn plan. Complaints from the public shall be recorded in the project file. Records shall be available for inspection by the executive secretary for six months following the end of the fire.

KEY: air quality, fire*, smoke*, land manager*
2000 **19-2-104(1)(a)**

Final Adoption:
R307-204
Emission Standards: Smoke Management

This document includes a section, titled Specific Comments, that summarizes comments pertaining to a certain section of the proposed rule, and a section that summarizes comments that are general in nature, titled General Comments. The summary of the comments made during the public hearing that was conducted on November 1, 2000, is included in the General Comments section. Attached is a list of individuals that submitted comments to the Division of Air Quality.

Specific Comments

R307-204-1. Purpose and Goals.

Comment:

Delete "public safety" from this section and throughout the proposed rule. The DAQ does not have any enforcement authority to regulate public safety. **(Commenter #7)**

Response: R307-204-1(1) has been changed as suggested.

R307-204-2. Applicability.

Comments:

R307-202, Emission Standards: General Burning rules should be consolidated with this rule to ensure consistency and ease of compliance. **(Commenter #3)**

The applicability clauses of both R307-202, Emission Standards: General Burning, and R307-204 need to be revised so that activities regulated under one rule are not also be regulated under the other. The proposed R307-204 will regulate many types of burning that are already regulated by R307-202. **(Commenter #4)**

The proposed rule could be construed to include the set of activities regulated under R307-202-4, R307-202-5, and, in special cases, the activities permitted by approved orders and operating permits. The applicability section could be restricted by adding the following language to R307-204-2:

> (3) R307-204 does not apply to open burning activities specified in R307-202-4 and R307-202-5, nor to any fire ignited in compliance with conditions contained in an approval order issued under R307-401-5, nor to any fire ignited in compliance with

conditions contained in an operating permit issued under R307-415. **(Commenter #6)**

Response: Staff agrees that the applicability section needs to be clarified by stating that R307-204 does not apply to the agricultural activities that are specified in 19-2-114, activities that are regulated under R307-202, and other activities that are otherwise permitted under R307.

Comment:

Delete the term "wildland fire" in R307-204-2(1). **(Commenter #2)**

Response: The term "wildland fire", as defined in R307-204-3, refers to any non-structure fire, other than prescribed fire, that occurs in the wildland. "Wildland" means an area in which development is essentially non-existent. According to these definitions, "wildland fire used for resource benefits" is considered a wildland fire. The proposed rule uses the same definitions for these terms as the Utah Smoke Management Plan (SMP). To avoid confusion, it is important that the proposed rule and the operating plan, SMP, remain as consistent as possible. Therefore, the term "wildland fire" will remain in the proposed rule.

R307-204-3. Definitions.

Comment:

Change "Smoke Sensitive Receptor" to "Smoke Sensitive Area". **(Commenter #1)**

Response: The term "smoke sensitive receptor" is consistent with the language in the Utah Smoke Management Plan (SMP). In order to avoid confusion, the language in the proposed rule mimics the SMP as closely as possible.

Comments:

The definitions of "prescribed fire or prescribed burn" and "wildland fire" in R307-204-3 are broad in scope, therefore apply to any fire, burning any fuel whatsoever, that is deliberately set for any specific objective. The definition of "prescribed fire" should be narrowed to cover only what the Division intends. It should cover the burning vegetation only, not other materials. The "specific objectives" should be defined in more detail. **(Commenter #4)**

The definition of "prescribed fire" in R307-204-3 is overly broad in scope. A suggested rewrite could be:

> "Prescribed Fire or Prescribed Burn" means any fire ignited by management actions for the purpose of burning living or dead vegetation, to meet specific objectives such as

achieving resource benefits." **(Commenter #6)**

Response: The applicability section, R307-204-2, was expanded to clarify the scope of the rule, therefore, no changes are required in the definitions section.

R307-204-4. General Requirements.

Comments:

Strike the references to "wildland fire" in R307-204-4(1) as it applies to unplanned ignitions. **(Commenter #1)**

We propose to strike the references to "wildland fire" and suppression thereof in R307-204-4(1). Safety, resource capabilities, and sound tactics sometimes dictate that appropriate management actions other than direct suppression be taken on wildland fires. In addition, Utah Department of Environmental Quality (UDEQ) does not have the authority to direct land management agencies to suppress wildland fires. **(Commenter #3)**

R307-204-4(1) needs to be clarified to address various types of fires. The section gives the impression that the use of prescribed fire, wildland fire used for resource benefits, and wildland fires are all being executed at the same time.

This is a mistaken assumption. Land Managers normally do not utilize prescribed fire during periods of high risk wildland fire. Also, wildland fires are not just left to burn, so having the executive secretary direct the suppression of wildfires is incomprehensible. It is also hard to conceive that prescribed fires would be authorized if there were a remote risk of a National Ambient Air Quality Standard (NAAQS) violation. **Recommendation:** Delete the term "wildland fire" in R307-204-4(1) and replace with "wildland fire used for resource benefits". **(Commenter #2)**

In R307-204-4(1), land management agencies are directed to "promptly stop ignition actions on existing prescribed fires" and "curtail the ignition of additional prescribed fires" when air quality is degraded to levels that would violate the NAAQS. While additional ignitions can be curtailed, ignitions on on-going prescribed fires cannot always be quickly stopped for safety reasons. Additional ignitions may be required to safely bring a prescribed firing operation to a conclusion. We propose to replace the above clauses with "...safely curtail ignition actions on existing prescribed fires, postpone the ignition of additional prescribed fires..." **(Commenter #3)**

Response: The purpose of R307-204-4(1) is to ensure that public health and visibility in Class I Areas are protected from smoke impacts from prescribed fires and wildland fires when multiple fires are burning at the same time. The language in R307-204-4(1) was changed to clarify the intent of the section and address the concerns of commenters. The section now states that the

land manager shall promptly stop igniting additional prescribed fires if air quality is being degraded to levels that could violate the NAAQS or burn plan conditions.

The Utah Division of Air Quality (UDAQ) recognizes that on-going prescribed fires cannot always be quickly stopped and fire suppression techniques, such as backing fires are sometimes used to manage prescribed fires. The language changes were made to address firefighter safety concerns.

R307-204-5. Burn Schedule

Comments:

Strike the words "and wildland fire" in R307-204-5(1) as this term applies to unplanned ignitions. **(Commenter #1)**

Delete reference to wildland fire in R307-204-5(1). Wildland fire is not a planned event and an act of nature. **(Commenter #2)**

We propose that the term "wildland fire" be stricken here, as this term is defined by fire management agencies as unplanned ignitions. **(Commenter #3)**

Delete references made to "wildland fire" in this section, since wildland fires are not a planned ignition. **(Commenter #7)**

Response: The clause "and wildland fire" has been deleted in R307-204-5(1) as suggested.

R307-204-6. Small Prescribed Fires.

Comments:

We suggest that paragraph R307-204-6(1) be dropped due to the minimal emissions that are being addressed. **(Commenter #1)**

Prescribed fires that are less than 20 acres in size and generate less than .5 tons of particulate matter, known as small prescribed fires, are allowed only when the clearing index is 500 or greater. These fires should not require notification to the executive secretary. There are no determined impacts from a fire of this size, if ignition occurs when the clearing index is 500 or greater. **(Commenter #2)**

We propose that R307-204-6(1) be dropped, as burns of this size with emissions at this level

have no more effect on air quality than residential chimneys or campfires. These burns should be listed on the burn schedule with no further reporting requirements. **(Commenter #3)**

Response: R307-204-6(1) has been deleted since ignition can only occur when the clearing index is 500 or greater. Land managers are subject to the burn schedule requirements in R307-204-5, if they plan to burn more than 50 acres per year.

R307-204-7. Large Prescribed Fires.

Comment:

Add the words "and results" in R307-204-7(2)(f), so the line reads, "The smoke dispersion model used and results". This will ensure that the executive secretary will receive a copy of the modeling results from private landowners. The state/federal land managers include the modeling runs with their burn plans, but this may not be true for private landowners. **(Commenter #7)**

Response: R307-204-7(2)(f) has been changed as suggested.

Comments:

Add the words "into smoke sensitive areas" after smoke intrusions in R307-204-7(2)(j) to better address the needs of the program. **(Commenter #1)**

Safety and contingency plans as proposed in R307-204-7(2)(j) should only be required when the smoke could intrude into smoke sensitive receptor areas. The proposed rule requires safety and contingency plans for any large prescribed fire, regardless of distance to smoke sensitive receptors. **(Commenter #2)**

Response: In order to protect public health, safety and contingency plans should be prepared for all fires in case smoke sensitive receptors are impacted by smoke from prescribed fires. At this time, criteria have not been established to define a "smoke intrusion". When criteria is established, this issue can be evaluated again.

Comment:

The proposed rule would require modeling before the burn for controlled burns over 20 acres or 0.5 tons of estimated particulate emissions per day. This seems like a lot of work for results that may be meaningless or are only as good as the assumptions and data available for the site. Most sites won't have specific meteorological data to plug into a model, making the results very questionable. What is the purpose of the modeling? If it is to predict where the smoke is likely to go, a more useful tool may be a wind rose. The proposed rule would require the model results

to be submitted two weeks before the burn. We are aware of no way to accurately predict wind direction or speed two weeks in advance, so at best one could only predict probabilities. Smoke modeling for controlled burns two weeks in advance appears to us to be too inaccurate to be useful. **(Commenter #4)**

Response: Modeling is used to estimate emissions from the fire, how the emissions will disperse, smoke duration, etc., in addition to smoke direction for a given set of burning parameters. The prescribed fire is only ignited if the pre-determined meteorological conditions, such as humidity, wind direction, and wind speed occur. Ranges are used as model inputs for each of the meteorological and site specific (fuel moisture, slope, etc.) conditions. The measurable criteria that defines the conditions under which a prescribed fire may be ignited is known as a fire prescription and is always included by state and federal agencies in their burn plans. The fire prescription is an essential part of the burn plan, which is required under R307-204-7(1). In order to clarify this requirements for private landowners, R307-204-7(1) has been changed to state that a fire prescription must be included in the burn plan that is submitted to the executive secretary two weeks before the beginning of the burn window.

Comment:

Under the proposed rule a small prescribed fire (less than 20 acres and 0.5 tons of particulate matter per day) shall be ignited only when the clearing index is 500 or less. This requirement should be specifically spelled out for large prescribed burns as well, rather than leaving it to the executive secretary's discretion. **(Commenter #4)**

Response: Burn approval or denial decisions are based on burn plan information or other information from the land manager, forecast meteorological information from the National Weather Service, Utah Division of Air Quality (UDAQ), and others, in addition to air quality data from the UDAQ's Air Monitoring Center. All of this information is used to schedule prescribed fire projects in order to mitigate impacts from fire activities on Utah airsheds. Although the clearing index is a valuable tool to ensure that fires are ignited during optimum dispersion periods, the process used to schedule large prescribed fires is even more sophisticated.

Comments:

Burn plans are approved by land managers and then submitted to the Smoke Program Coordinator (SPC) for transmittal to the Utah Division of Air Quality (UDAQ). The SPC does not approve plans, but coordinates land management actions and presents them to the executive secretary or designee as stated in R307-204-7(3)(b). **(Commenter #2)**

The Utah Smoke Management Plan (SMP) requires that burn plans, reports, etc. will be submitted to the SPC. This individual will forward this information to the UDAQ. **(Commenter #2)**

Response: Under the operating plan, known as the SMP, land managers are required to submit the burn plan and associated paperwork to the SPC at the UDAQ. Using the burn plan and other information, forecast meteorological conditions, and existing air quality information, the SPC makes burn approval or denial decisions after consulting with the UDAQ.

The purpose of the proposed rule is to codify the requirements of the SMP. The Utah Statute authorizes the Air Quality Board (AQB) to promulgate rules regarding air pollution and gives the executive secretary and the Director of the UDAQ the authority to implement such rules.

Comments:

Change the first sentence in R307-204-7(3)(c) to "prescribed fires that are delayed or not completed following burn approval do not need to be resubmitted to the executive secretary or designee unless there are substantial changes related to increased smoke production and or smoke transport." Such language will significantly reduce unneeded paperwork without a reduction of air quality protection. **(Commenter #1)**

We propose changing R307-204-7(3)(c) as follows, "Prescribed fires that are delayed or not completed following burn approval do not need to be resubmitted to the executive secretary (or designee) unless substantial changes related to increased smoke production and/or smoke transport are made to the plan. If a prescribed fire is not carried out, the land manager shall notify the Division of Air Quality using the burn request form and shall submit the form by fax or electronic mail to the executive secretary (or designee) by 8:00 a.m. the following day." **(Commenter #3)**

Recommend that R307-204-7(3)(c) be changed to state that the burn plan should be resubmitted to the Executive Secretary only when changes occur that alter the smoke trajectory or the quantity of smoke being produced. **(Commenter #5)**

Response: R307-204-7(3)(c) was changed to state that if a prescribed fire is delayed, changed or not completed following burn approval, any significant changes in the burn plan shall be submitted to the executive secretary before the burn request is submitted.

Comment:

Insert the word "business" in the second sentence of R307-204-7(3)(c), so the sentence will read,

"If a prescribed fire is not carried out, the land manager shall list...the following business day. **(Commenter #7)**

Response: R307-204-7(2)(f) has been changed as suggested.

Comment:

The proposed rule requires daily emission reports during a controlled burn covering 50 acres or more. One requirement of the emission report is to calculate the amount of particulate matter released. Form 5 provides some emission coefficients for this purpose, which use some broad assumptions. Not all fuel types burn the same. Humidity in the air and moisure content of the fuel all make a difference that does not appear to have been taken into account. What will the Division use the estimated emissions for? Will the land manager be required to include the estimated emission in annual emission inventories? **(Commenter #4)**

Response: Fuels do not burn the same. But, considerable field research was conducted in order to develop the various fuel models. Fuel models and emission factors do make some assumptions. The alternative to using fuel models is to conduct extensive on-site measurements prior to ignition, which is extremely expensive. Since fuel moistures are responsive to changes in humidity, the fuel models have unique moistures of extinction. In other words, the fire won't burn when the fuel moisture is above the moisture of extinction. Typically, fires are not ignited outside of the moisture of extinction for that particular fuel model, which improves the accuracy of the fuel model. Fuel moisure is an important measurement, since fuel moisture determines how a fuel burns.

The information from the daily emissions report, as required by R307-204-7(4) is used for inventory purposes. Emission information is based on black acres, which is determined at the end of the fire activity, to improve the accuracy of the emission inventory.

R307-204-8. Requirements for Wildland Fire with Potential for Use for Resource Benefits.

Comment:

Change title of section to "Requirements Wildland Fire for Resource Benefits" in R307-204-8. **(Commenter #2)**

Response: The title should remain the same, since the section specifies the requirements that land managers must follow if a fire may be managed as a wildland fire used for resource benefits.

Comment:

In addition, replace "wildland fire" with "wildland fire used for resource benefits" in R307-204-8. **(Commenter #2)**

Response: As defined, the term "wildland fire" refers to wildland fire used for resource benefits. The section title, "Requirements for Wildland Fire with Potential for Use for Resource Benefits" implies that the requirements of R307-204-8 apply to wildland fire used for resource benefits.

Comment:

Change "wildfire" to "wildland fire" in R307-204-8(1)(c). **(Commenter #7)**

Response: R307-204-8(1)(c) was changed as suggested.

Comment:

Insert the word "business" in R307-204-8(2), so sentence reads, "By 8:00 a.m. on the business day following fire activity..." **(Commenter #7)**

Response: R307-204-8(2) was changed as suggested.

General Comments

Comment:

We have reviewed the proposed Utah Air Quality Rule R307-204 and have the following comments. We believe that the rule as proposed with a few changes will help maintain both the health and welfare of Utah citizens and healthy, safe forest and rangeland ecosystems within the State. We realize that due to its small diameter, smoke from both wildfire and prescribed fire has the potential to impact both visibility and the health of sensitive individuals. Therefore, we look at this rule and the Utah Smoke Management Plan as guidance that will help us do our job better. **(Commenter #1)**

Response: Noted.

Comment:

The Department of Environmental Quality, Utah Division of Air Quality (UDAQ), and State and Federal land managers entered into a cooperative agreement on March 30, 2000, for the coordination of monitoring smoke from prescribed fires and wildland fires used for resource benefits. The interagency group provides a Smoke Program Coordinator (SPC) to facilitate and

coordinate the prescribed fire program. This individual has no delegated authority from the agencies as a regulatory position. The SPC was created to gather information, and coordinate with the land managers and the UDAQ to ensure that activities utilizing fire will not impact air quality. The UDAQ retains all regulatory responsibility and the SPC is not to be the carrier of this task. The Notice of Proposed Rules excludes the position of SPC in any form. It identifies a direct relationship with the executive secretary and the land managers that are responsible for fire activity. The position of the SPC seems to disappear. **(Commenter #2)**

Response: The SPC does not have any regulatory authority, therefore, no reference is made to the SPC in the proposed rule. The Air Quality Board (AQB) has the authority to promulgate rules and the executive secretary, with the assistance of the UDAQ, implements such rules. Under the proposed rule, the coordination, scheduling, and burn approval or denial decision duties are conducted by the executive secretary with assistance from the UDAQ and SPC. The term "executive secretary" implies that technical assistance will be provided by the UDAQ and the SPC.

Comment:

It is our opinion that rulemaking is not necessary at the present time. During the very active fire seasons of 1996 and the summer of 2000, there were no smoke impacts on ambient air quality from wildland fire identified. Due to a lack of impact on ambient air quality from wildland fire, the need for the rulemaking is doubtful. It was the federal agencies that proposed the Smoke Program Coordinator (SPC) position. The voluntary agreement between the land managers and the Utah Division of Air Quality (UDAQ) on the use of fire to reduce hazardous fuel build-up is of importance to all. We encourage the UDAQ to reconsider the proposed rulemaking and continue with the voluntary program. These actions are not mandatory until 2016. It appears that the proposed rule does not supplement the Smoke Management Plan (SMP), but codifies it and brings into question for the need of the agreement. **(Commenter #2)**

Response: The purpose of the proposed rule is to codify the operating plan, known as the SMP. The rule establishes the authority of the Air Quality Board (AQB) to promulgate rules concerning air pollution and the authority of the executive secretary to implement such rules. The SMP is still an important document for state and federal land managers. For example, it provides more details on the duties of the SPC, lists the emission reduction and dispersion techniques that are considered best smoke management practices, and outlines the role of the Utah Airshed Group and the Utah Airshed Oversight Group, which serve as advisory boards.

The UDAQ is in the process of determining what effects the wildland fires had on air quality during the summer of 2000. Our preliminary data shows several exceedances of both the one-hour and the eight-hour ozone

standard at monitoring stations throughout Davis, Salt Lake, Utah, and Weber counties during the July 29, 2000, through August 3, 2000, time period. It appears that the numerous wildland fires that were burning in the same area during this time period did have an effect on air quality. No particulate exceedances were monitored during the summer of 2000, but preliminary data show elevated levels for PM_{10} and $PM_{2.5}$ during the July 24, 2000, through August 4, 2000, time period at monitoring stations located in Lindon, Salt Lake City, and North Provo. Again several large wildland fires were burning in the area at that time.

Comment:

The rulemaking should remove all reference to wildland fire. Wildland fire is suppressed by all agencies that have the responsibility to protect life, property, and natural resources. The rulemaking includes wildland fire and it is outside the scope of the programs that are being managed. The rule suggests that the Utah Division of Air Quality (UDAQ) would direct the federal agencies to do something they are already doing. Again, even during high levels of wildfire activity, up to five times the numbers of acres proposed to be burned under prescribed fire projects, the National Ambient Air Quality Standards (NAAQS) were not exceeded in smoke sensitive receptor areas. **(Commenter #2)**

Response: The term "wildland fire" should be included in the rule, since the term refers to any non-structure fire, other than prescribed fire, that occurs in the wildland. R307-204-4 applies to managed natural fire as well as naturally ignited fires, therefore, the term "wildland fire" is appropriate. See previous response regarding smoke impacts on the NAAQS.

Comments:

We also suggest adding the words "or designee" after executive secretary where it is used in the rule. **(Commenter #1)**

The term "executive secretary" should be replaced by "executive secretary (or designee)" wherever it appears in the rule. This is to provide a reference to the Smoke Program Coordinator (SPC), the person most likely to serve as an air quality contact for anyone preparing to conduct any prescribed fire activities. **(Commenter #3)**

The term "or designee" should be placed in the rule where the term "executive secretary" is used. This will permit the role of the SPC to be the designated individual to carry out the executive secretary's role. **(Commenter #5)**

Response: R307-204 will be implemented by the executive secretary with the assistance of the Utah Division of Air Quality (UDAQ). The term

"executive secretary" implies that technical assistance will be provided by the UDAQ and the SPC.

Comment:

The draft rule was only printed in the Salt Lake area newspapers. This rule should have been distributed statewide to the print media for public review. **(Commenter #3)**

Response: The most stringent notice requirement applicable to this rule is found in the Utah Administrative Rulemaking Act, 63-46-4 and 5, that is applicable to rules for all state agencies. It requires that the rule be published in the *Utah State Bulletin*; it was published on October 1, 2000. The Administrative Rulemaking Act requires that a 30-day public comment be held, but it does not require a public hearing or a notice in newspapers. However, the comment period was 45 days long, a hearing was held on November 1, and a notice was published on October 2, 2000 in the *Salt Lake Tribune*, the only newspaper of general circulation in Utah, and in the *Deseret News*. The notice was scheduled for publication again on October 18, though we do not yet have confirmation that occurred. In addition, the notice was mailed to the mayor of every city and the chairperson of each county council or commission in the state. We cannot identify every private landowner who may be affected by the rule, but every affected state and federal agency was notified while the rule was being drafted and received the rule text and hearing information by mail and email, as well as phone calls requesting their comments both formally and informally. We hoped that they would notify their contacts as well.

Comment:

Prescribed fire (and wildfire that land managers "let burn") can do both harm and good. It may lessen damage to air quality and other values in the long term by preventing the build-up of dry vegetation that leads to larger, smokier, more devastating, and impossible-to-control future wildfires. However, prescribed fires set by federal land managers got out of control earlier this year in Utah and New Mexico, causing harm to people and property, and seriously degrading air quality and visibility over large areas. Large wildland fires are, in our experience, usually the main cause of the worst instances of haziness in the West. **(Commenter #4)**

Response: Noted.

Comment:

According to the notice in the Utah State Bulletin, most of the paperwork required by this rule is already used by governmental land managers. If it is to be extended to private entities, information on the calculational techniques to be used should be made readily available to all. **(Commenter #4)**

Response: Agreed.

Comment:

The proposed rules for controlled burns seem to be in part a reaction to some unfortunate controlled burns that became uncontrolled. Yet the proposed rule does not seem to address this problem. Prescribed fire should not be ignited, and wildland fire should usually be suppressed if possible, when there are, or are expected to be, high winds, or when the vegetation in the area to be burned is very dry. These simple requirements would do more to prevent preventable excessive smoke, as well as damage to wildlands and other values, than the paperwork required by the proposal as written. **(Commenter #4)**

Response: Under the proposed rule, land managers are required to submit a burn plan and associated paperwork to the executive secretary. The burn plan information, forecast meteorological information from the National Weather Service, Utah Division of Air Quality (UDAQ), and others, in addition to air quality data from the UDAQ's Air Monitoring Center, will be used to schedule prescribed fires during times of optimal dispersion. This process will help reduce the impacts of smoke on public health while maintaining healthy forest and rangeland ecosystems.

Comments:

In general, the rule needs to be as flexible as possible. We believe that there will be significant improvements in our ability to predict, monitor, and inventory the emissions generated from prescribed fire in the West. As such, the rule should be broad enough to incorporate operational improvements in our smoke management program without having to delay implementation for lengthy hearings. **(Commenter #1)**

Many changes in the forms and operating plan, known as the Utah Smoke Management Plan (SMP), are anticipated during the next year since the program is still going through a break-in period. How will changes be made to the forms and operating plan when the rule is in place? **(Commenter #5)**

Response: The operating plan, known as the SMP, and associated forms can be modified as needed. If the changes to the operating plan or forms are consistent with the rule, then no changes to the rule will be required. In some circumstances, rule changes will be required. Rule changes can usually be made within four months.

List of Commenters

Commenter #1:	Tom Harbor, Director, Fire, Aviation and Air Managment United States Department of Agriculture, Forest Service
Commenter #2:	Sheldon Wimmer, Utah State Fire Management Officer and John Shive, Utah State Fuel Management Specialist United States Department of Interior, Bureau of Land Management
Commenter #3:	Art Latterell, Utah Group Fire Management Officer Ross Wilmore, Utah Group Fuels Management Specialist Cyndi Sidles, Zion National Park Prescribed Fire Technician Zion National Park
Commenter #4:	Paula Doughty, Manager, Environmental Compliance Kennecott Utah Copper Corporation
Commenter #5:	Greg Zschaechner, Utah Interagency Smoke Program Coordinator
Commenter #6:	J.D. Thompson, Director, Environmental, Fire, Security and Medical Services Thiokol Propulsion
Commenter #7:	Frances Bernards, Environmental Health Scientist Utah Department of Environmental Quality, Division of Air Quality

Public Comments
Hearing
November 1, 2000
R307-204. Emissions Standards: Smoke Management

Hearing Officer:	John Veranth
DAQ staff:	Frances Bernards, Jan Miller, Greg Zschaechner
Others:	Dennis Haddow, USDA Forest Service Regs 2 and 4
	Kathy Van Dame, Wasatch Clean Air Coalition
	Nina Dougherty, Sierra Club

Need for the Rule
The single source of air pollution in the West with the most chance to affect the public is fire. There is a definite need for the Smoke Management Plan, the Memorandum of Understanding that specifies how agencies work together, and for this rule. The particulates from fires are inhaled deeply into the lungs and contribute to respiratory problems for sensitive populations. At levels well below the public health standards, smoke creates a nuisance for citizens and interferes with visibility. We must do more than other polluters whose emissions are less harmful. In our role of managing fire, we are

a polluter and we value the state's role in helping us do a better job. The rule is not in conflict with our internal management policies--they also require us to protect air quality. We expect the Smoke Management Plan and the rule will be improved as we work together and learn more, but this is a start. We will have a few specific comments about the rule, but nothing in this rule in unfair. It will make more work for us, but it is necessary, especially as we increase fuel treatment and use of fire. (Haddow, USDA Forest Service)

Increase in Burning

Congress has appropriated nearly $2 billion additional funding for fuel treatment this year, and we are hiring and training more crews and buying more equipment. The program will continue for multiple years. We burn only when the ventilation is good. Unfortunately, much of the areas most in need of treatment are on the urban interface. Much of the material to be cleared is small and currently unusable; we are trying to find markets to sell it. Burn projects on the urban interface will be small, one-day projects, though projects elsewhere may last longer. (Haddow, USDA Forest Service)

Monitoring and Reporting

We need a better reporting system and improved monitoring systems. This rule is fairly prescriptive, and we need information from other states as well, so that Utah will know what is happening in upwind states to better schedule burns here. The Forest Service has just purchased 10 new portable monitors, and will coordinate with DAQ in locating monitors when there is a need. (Haddow, USDA Forest Service)

Question and Answer session

Van Dame: Does any of the monitoring address volatile organic compounds? Haddow: Not at this time, but expect to do so in the future. There is some data indicating that ozone increases as the size of fires increases.

Van Dame: Certain agricultural activities are exempted under the Utah statute--is agricultural smoke any different from other smoke from vegetation? Haddow: This is being investigated by the US Dept of Agriculture and also by the Fire Emissions Joint Forum of the Western Regional Air Partnership (WRAP). So far there is no indication that there is any difference. The Forest Service would prefer that the Utah rule address all agricultural activities, but we will do our part whether everyone else is covered or not.

Van Dame: Do agricultural sources that are exempt from this rule have to get permits? Bernards: During the state's closed fire season (June through October), they get permits from the Division of State Lands and Forestry in the Dept of Natural Resources; they issue about 200 - 300 permits each year. Their primary concern is safety, and they provide backup to ensure fires do not get out of control.

Veranth: Does this proposal fit with the National Fire Plan? Haddow: You can read that at www.fs.fed.us.

Veranth: Will this rule provide much better emissions inventory information? Bernards: Yes. Presently we inventory the amount permitted, but the rule focuses on the actual vegetation burned. Haddow: Many years we burn only 30-40% of what is planned, because weather conditions aren't right.

Van Dame: In R307-204-8, there is a requirement that the land manager using wildfire for resource benefit project smoke impacts for 15 miles. Is that far enough? Zschaechner: I look at a much wider area than that when reviewing the plan.

Veranth: Why require maps to be at a scale of 1:62,500? That is not a standard scale used for maps, and is not readily available. Zschaechner: Agencies are using GIS systems that allow generating maps at any scale we need. Veranth: That scale allows getting a 15-mile area on to one large sheet of paper for easy review. Bernards: The rule says that scale is preferable, not required, and we will work with private land who do not have the capability for that scale.

Dougherty: What are other states doing? Haddow: Oregon, Washington, Montana, Wyoming, Colorado, and Arizona all have Smoke Management Plans and/or rules; they vary in exactly what is required. In California, there is variety among the local air districts. Nevada is just getting started. The Forest Service hopes for something fairly uniform from state to state.

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
Richard W. Sprott
Director

State of Utah

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MEMORANDUM

TO: Air Quality Board DAQ-108-00

FROM: Lenore Epstein, DAQ Legal Counsel
Laura Lockhart, Attorney General's Office

DATE: December 22, 2000

SUBJECT: Propose for public comment: Modify R307-103-2(2)(b), Administrative Procedures, to change date of issuance of initial orders

On December 6, 2000, you adopted R307-103, a new Administrative Procedures rule. During the comment period, a commenter requested that the issuance date of an initial order be changed from the date it is signed to the date it is mailed by the Division of Air Quality. The purpose of the change would be to eliminate unfairness due to delays in mailing of signed orders.

Staff agrees with this commenter, and recommends modifying the rule to accommodate it. However, because of various unforeseen administrative rulemaking deadlines and expiration dates, if the change in the rule had been made at the December Board meeting, the result would have been a period of uncertainty in which no administrative procedures were in place for many agency actions. Therefore, the Board adopted the Administrative Procedures rule as it was proposed, with the understanding that the modification of the issuance date would be proposed for public comment at its next meeting.

Staff recommendation: Staff recommends that the Air Quality Board propose the modification of R307-103-2(2)(b) for public comment, to change the issuance date for initial orders from date of signing to date of mailing.

R307. Environmental Quality, Air Quality.
R307-103. Administrative Procedures.
R307-103-2. Initial Proceedings.

(1) Initial Proceedings Exempt from Utah Administrative Procedures Act. Initial orders and notices of violation include, but are not limited to, initial proceedings regarding:

(a) approval, denial, termination, modification, revocation, reissuance or renewal of permits, plans, or approval orders;

(b) notices of violation and orders associated with notices of violation;

(c) orders to comply and orders to cease and desist;

(d) certification for tank vapor tightness testing under R307-342;

(e) certification of asbestos contractors under R307-801;

(f) fees imposed for major source reviews under R307-414;

(g) assessment of other fees except as provided in R307-103-14(7);

(h) eligibility of pollution control equipment for tax exemptions under R307-120, R307-121, and R307-122;

(i) requests for variances, exemptions, and other approvals;

(j) requests or approvals for experiments, testing or control plans; and

(k) certification of individuals and firms who perform lead-based paint activities and accreditation of lead-based paint training providers under R307-840.

(2) Effect of Initial Orders and Notices of Violation.

(a) Unless otherwise stated, all initial orders or notices of violation are effective upon issuance. All initial orders or notices of violation shall become final if not contested within 30 days after the date issued.

(b) The date of issuance of an initial order or notice of violation is the date the initial order or notice of violation is [~~signed~~]mailed.

(c) Failure to timely contest an initial order or notice of violation waives any right of administrative contest, reconsideration, review, or judicial appeal.

KEY: air pollution, administrative procedure, hearings*
200[~~0~~]1 **63-46b**

- **MOTION**

Shelly Teuscher made the motion to adopt R307-204. The motion was seconded. The motion carried.

VI. PROPOSE FOR PUBLIC COMMENT: MODIFY R307-103-2(2)(b), ADMINISTRATIVE PROCEDURES, TO CHANGE DATE OF ISSUANCE OF INITIAL ORDERS

Presenter: Lenore Epstein, DAQ Legal Counsel

Last month the Board adopted R307-103, a new Administrative Procedures rule. A commenter requested that the issuance date of an initial order be changed from the date it is signed to the date it is mailed by the Division of Air Quality. Staff recommends modifying the rule to accommodate the change.

- **MOTION**

Richard Olson made the motion to take this item to public comment. David George seconded the motion. The motion carried.

VII. REQUEST FOR VARIANCE: FORELAND REFINING CORPORATION

Presenters: Mark McSwain, president of Foreland Refining; Chris Hadley, director of the asphalt plant

The company is asking for a variance from its existing AO to allow (1) the use of alternate fuels (used, #2, #4, #6, and/or LPG) during natural gas curtailments, and (2) with the price of natural gas increasing, the company is also asking to burn fuel oils in preference to natural gas at any time in the next six months for economic reasons. Natural gas is in short supply and costs could increase to as much as $33,800/mo. for the asphalt plant.

The decision was made to treat each request separately.

Tim DeJulis, environmental engineer representing DAQ staff, recommended approval for the variance, providing the following conditions are met:

1. LPG shall be used as back-up fuel to natural gas.
2. Any fuel oils shall only be used during periods of natural gas curtailment.
3. Any fuel oil used shall contain less than or equal to 0.50% sulfur by weight.
4. Each separate load of fuel oil shall be certified as to the constituent composition either by the fuel supplier or by Cowboy Asphalt Terminal's own testing as per ASTM Method D2880-71 or D-4294-89 or approved equivalent.
5. Fuel certification reports shall be supplied to the DAQ each week of the variance period or upon arrival of each load of fuel oil--whichever is sooner.

6. Receipt of a complete Notice of Intent addressing the above intended changes, including a full, top-down BACT analysis of all possible control strategies before the end of the proposed variance period.

After a lengthy discussion, a motion was presented dealing with the use of alternate fuels during natural gas curtailment.

- **MOTION**

Shelly Teuscher made the motion to grant the variance, adopting staff recommendation, with the following changes to the conditions:

* Strike item 1 completely.
* Item 2 should be changed to state "LPG, fuel oils #2, #4, #5, and #6 may be used during periods of natural gas curtailment."

The other conditions remain the same.

John Veranth seconded the motion. The motion carried.

Discussion on the second part of the variance request empathized with the company about the rising costs of natural gas. Issues of BACT were also discussed. Members of the Board expressed concern that more information and research are needed before an informed decision could be made.

- **MOTION**

Dianne Nielson made the motion to disapprove the second request to burn fuel oils as primary fuels in preference to natural gas at any time in the next six months. John Veranth seconded the motion.

Joseph Thompson commented that it would make sense for DAQ staff to re-evaluate what is BACT. John Veranth added that he would like staff to prepare an estimate of the impact on air quality projections if all the sources that had dual fuel capabilities came before the Board with economic requests to change to fuel oil.

The motion carried.

VIII. REQUEST FOR VARIANCE: INLAND REFINING COMPANY

Presenters: Gil Higham, plant manager, Inland; Dave Kopta, DMK Engineering

Inland Refining Company is requesting a variance from its existing approval order to use fuel oils #2, #4, #5, #6, and used oil as primary fuels at all times in lieu of natural gas. Natural gas costs amount to 68% of operating costs at this plant. The refinery is currently shut down due to the high cost of natural gas.

Dave Kopta commented that Inland is a specific source in the PM10 SIP and was given emission allowances that were representative of the reasonably available control technology (RACT) requirement. Those levels were set for sulfur dioxide for routine emissions of approximately 165 tons per year. Language in the SIP also states that RACT has been determined to be the burning of natural gas for the oil refineries. However, it did mention some qualifying statements that the SIP envisioned the need for flexibility and emissions trading concept if a refinery did want to burn oil as a fuel rather than natural gas. As long as the refinery could offset those emissions with decreases either in NOx or in SO2, that was allowable under the SIP. This is the exact situation the refinery is in. They are required by the SIP to install a 95% efficient sulfur recovery unit, and the unit that was installed went far beyond the level of efficiency–actually an average of 99.9% efficiency. That difference is more than enough to make up the room that it would take for the amount of increased emissions that would be generated by burning oil.

Rick Sprott stated that this is a variance from a specific RACT requirement in the SIP. This action would amount to a SIP revision. DAQ has pledged (to EPA) to refrain from revising the SIP until the PM10 SIP maintenance plan is dealt with.

At this point in the meeting, Mayor Seghini asked if Wil Jeffries of the Wasatch Front Regional Council (WFRC) could address the Board on the status of the PM10 SIP. WFRC has the challenge of making the use of the transportation system comply with the provisions of the SIP. Through money awarded for the PM10 SIP project, WFRC has been able to find the answer to transportation conformity. A letter from federal agencies state that EPA and the U.S. Department of Transportation concurred WFRC's conformity finding, and there's no longer a risk (for a year) that highway and transportation facilities will not be built.

At least 20 years into the future, the State has to show that by building the proposed system, highway and transit components, that the use to that system will keep PM10 emissions under a specific limit. It's appropriate that DAQ should complete the PM10 analysis before making too many changes to what could amount to a SIP revision. It's good that the present control strategies are working.

- **MOTION**

John Veranth made a motion to deny the variance request. Dannie McConkie seconded the motion.

Shelly Teuscher proposed a substitute motion to not take action on this request and suggested that this issue come back to the Board next month with further information from the company and from staff.

John Veranth withdrew his motion. The substitute motion was seconded by Joseph Thompson. The substitute motion passed.

IX. INFORMATION ITEMS

A. Compliance Activities - Marv Maxell

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
Richard W. Sprott
Director

State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY

150 North 1950 West
P.O. Box 144820
Salt Lake City, Utah 84114-4820
(801) 536-4000 Voice
(801) 536-4099 Fax
(801) 536-4414 T.D.D.

MEMORANDUM

TO: Air Quality Board DAQ-001-01

THROUGH: Richard W. Sprott, Acting Executive Secretary

FROM: Timothy DeJulis, Environmental Engineer

DATE: January 3, 2001

SUBJECT: Approval Order Variance Request: Foreland Refining Corporation - Cowboy Asphalt Terminal

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Foreland Refining Corporation - Cowboy Asphalt Terminal has requested a variance from the existing Approval Order (AO) (DAQE-0840-99, dated October 20, 1999) addressed to the plant site located at 1710 West 2600 South, Woods Cross. The current AO limits Foreland Refining Corporation - Cowboy Asphalt Terminal to using only natural gas in its combustion equipment items. The following changes were requested to the plant location as part of a recently submitted variance request:

- Allow fuel oils (used, #2 , #4, #6 and/or LPG) to be burned during periods of natural gas curtailment at this site
- Allow fuel oils (used, #2 , #4, #6 and/or LPG) to be burned as primary fuels in preference to natural gas at any time in the next six months

The preceding changes will have the following impact on the quantity and/or quality of emissions from Foreland Refining Corporation - Cowboy Asphalt Terminal's Woods Cross site, assuming the conditions and stipulations contained within the submitted variance request:

Pollutant	Current Emissions tons/year	Emission Increases tons/year	Total Emissions tons/year
PM_{10}	3.81	+0.89	4.70
SO_2	0.06	+6.74	6.80
NO_x	7.53	+3.62	11.15
CO	3.87	+0.00	3.87
VOC	7.69	+0.00	7.69
Total HAPs	0.00	+0.04	0.04

The total net potential emission change is an increase of 11.29 tons per year (22,580 lbs/year) of pollutants. The estimates in this proposal are based on existing levels of production, applicable AP-42 emission factors(Chapters 1.3 and 1.4), and assumptions on the weight percent sulfur in the fuel oils being less than or equal to 0.50 %.

The staff recommends at this time that the requested variance be granted provided the following conditions are satisfied.

1. LPG shall be used as back-up fuel to natural gas.
2. Any fuel oils ~~shall only~~ be used during periods of natural gas curtailment. fuel oils LPG, #2, #4, #6 oils may be used
3. Any fuel oil used shall contain less than or equal to 0.50% sulfur by weight.
4. Each separate load of fuel oil shall be certified as to the constituent composition either by the fuel supplier or by Cowboy Asphalt Terminal's own testing as per ASTM Method D2880-71 or D-4294-89 or approved equivalent.
5. Fuel certification reports shall be supplied to the DAQ each week of the variance period or upon arrival of each load of fuel oil - whichever is sooner.
6. Receipt of a complete Notice of Intent addressing the above intended changes, including a full, top-down BACT analysis of all possible control strategies before the end of the proposed variance period.

These staff recommendations differ from the intent expressed in the variance request. The following reasons account for these differences:

- The request to be allowed to use alternate fuels during periods of natural gas curtailments is sound and acceptable when based on the idea of preserving a plant's capital equipment, which would be lost if heating service is lost. LPG is recommended for this purpose as it is the cleanest burning option amongst all the proposed alternative fuels.

- Foreland Refining Corporation - Cowboy Asphalt Terminal's variance request identifies several grades of fuel oil for potential use (#2, #4, #6, Used). Only the #2 fuel grade satisfies the weight percent sulfur limitation used as the basis for calculating emissions impacts, and which serves as the basis for the Best-Available-Control-Technology (BACT) economic analysis. The submitted BACT analysis does not include the costs of additional control equipment items or strategies which would be required to be implemented if the proposed fuels oils were to be allowed. As a result, the estimated economic impact of using alternate fuels, contained in the variance request, is exaggerated.

- According to information contained in the submitted variance request, Foreland Refining Corporation - Cowboy Asphalt Terminal manufactures no percentage of its total annual production during the winter months. Therefore, fuel usage during the winter season is at its lowest, largely for inventory maintenance only.

- Utah state rule R307-102-4 (b) indicates that a variance of the second type requested is only allowed if there were no other control technologies available. Natural gas is the best control technology in this situation, when available (ie. not being curtailed).

- The documentation identifying the basis for the requested variance did not provide sufficient detail with respect to pollution control, nor was there adequate analysis of potential outcomes.

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
Richard W. Sprott
Director

State of Utah
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY

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MEMORANDUM

TO: Air Quality Board

THROUGH: Richard W. Sprott, Acting Executive Secretary DAQ-111-00

FROM: Rusty Ruby, Manager, New Source Review Section

DATE: December 22, 2000

SUBJECT: Variance Request: Foreland Refining Corp.

Attached is a variance request for the Foreland Refining Corp. It is for the use of alternate fuels at the Cowboy Asphalt terminal during periods when a natural gas curtailment is involuntary and beyond the control of the company. Foreland requests this variance for six months or until the approval order is modified to include the use of alternate fuels.

DAQ received this request on December 20, 2000; not enough time for staff review. Staff recommendation will follow upon review.

ENVIRONMENTAL ENGINEERING, INC
4609 South 2300 East, Suite 102 Holladay, UT 84117
Phone: 801-278-5133 FAX: 801-278-5170
E-mail: dmk@xmission.com

Date: **December 20, 2000**

To: **Hannie Moeller**
Utah Division of Air Quality
Phone: 801-536-4000
Fax: 801-536-4099

From: **Kathy Garrett**
Phone: (801) 278-5133
Fax: (801) 278-5170

Number of pages including cover sheet: 19

REMARKS: ☐ **Urgent** ☒ **For your review** ☐ **Reply ASAP** ☐ **Please Comment**

Subject:

Hannie –

Per our conversation earlier, here is the Variance Request. It is for Foreland Refining Corporation for the use of alternate fuels during a natural gas curtailment.

Thank you for passing this along to the correct person.

Please let me know if you have any questions.

Thanks

Kathy

ENVIRONMENTAL ENGINEERING, INC.
4609 South 2300 East, Suite 102 Holladay, UT 84117
Phone: 801-278-5133 FAX: 801-278-5170
E-mail: dmk@Xmission.com

December 20, 2000

Rick Sprott
Director
Utah Division of Air Quality
PO Box 144820
Salt Lake City, UT 84114-4820

Re: Alternate Fuel Variance Request for Foreland Refining Corporation

Dear Mr. Sprott:

On behalf of Foreland Refining Corporation, DMK Environmental Engineering, Inc. submits this variance request for the use of alternate fuels at the Cowboy Asphalt Terminal. A Notice of Intent is being submitted for the use of the alternate fuels at the site. Foreland requests this variance for six months or until the Approval Order is modified to include the use of alternate fuels.

Currently, Foreland's Approval Order only allows natural gas to be used as a fuel for their boilers, furnace, and tank heaters. Foreland would like to be permitted to use alternate fuels (such as fuel oil #2, fuel oil #4, fuel oil #6, used oil, and LPG) during periods when a natural gas curtailment is involuntary and beyond the control of Foreland Refining Corporation.

We would like to be scheduled for the January Air Board to discuss this variance request.

Should you have any questions, please do not hesitate to call.

Sincerely,

Kathy Garrett

Kathy Garrett

Enclosures (Variance Request Form, Emissions Calculations)

VARIANCE REQUEST

STATE OF UTAH
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
(801) 536-4000

INSTRUCTIONS: Complete each item below. Use additional pages if necessary. If there is a change in any of the information listed below, report the changes to the Utah Division of Air Quality immediately. You will be notified of the date, place, and time of the hearing or the determination made by the Executive Secretary. Phone:

Submit form to: Rick Sprott, Director
Utah Division of Air Quality
150 North 1950 West
PO Box 144820
Salt Lake City, Utah, 84114-4820

Foreland Refining Corporation
Business Name

2600 South 1710 West
Street Address (Location of Business)

Woods Cross — Davis County
City — **County**

84087
Zip Code

2561 South 1560 West, Suite 200
Mailing Address

Woods Cross — UT
City — **State**

84087
Zip Code

Mark McSwain
Contact - Name of the person authorized to receive notices

(801)298-9866
Contact Telephone Number

Applicant is:
( ) Individual
( ) Partnership
(X) Corporation
( ) Government
( ) Other Entity

List names and addresses of all partners, officers, or other persons in control.

Mark McSwain
2561 South 1560 West, Suite 200
Woods Cross, UT 84087

Chris Hadley
2561 South 1560 West, Suite 200
Woods Cross, UT 84087

1. (X) Initial variance ( ) Renewal

2. The purpose of variance request (check one):

A. ( ) no practicable means known or available for the adequate prevention, abatement, or control of the air pollution involved.

B. ( ) compliance with the requirements from which variance is sought will require that measures, because of their extent of cost, must be spread over a long period of time.

C. (X) to relieve or prevent hardship of a kind other than provided for in 2A or 2B.

3. Describe the business or activity for which the variance is requested. List all past, present, and future businesses and activities.

Asphalt Blowing Still that produces roofing tar.

4. Describe the article, machine, equipment, or contrivance involved in the request.

One (1) Kewanee Manufacturing H3S40-G02 Boiler (3 Million Btu/hr)
Two (2) Asphalt Tank Heaters (0.5 Million Btu/hr)
One (1) Born Engineering Upflow Heater 1340A Asphalt Furnace (12 Million Btu/hr)

5. State the rule(s) or approval order condition(s) from which the applicant seeks relief.

Approval Order DAQE-840-99, Condition #12:

Condition #12 states that Foreland Refining Corporation – Cowboy Asphalt Terminal shall only use natural gas as fuel in the boiler, furnace, and tank heaters. Foreland would like to be able to use alternate fuels (fuel oil #2, fuel oil #4, fuel oil #6, used oil, and LPG) during periods when a natural gas curtailment is involuntary and beyond the control of Foreland Refining Corporation.

6. State the specific time period(s) for which the variance is requested.

Any time during the next six months or until the Approval Order is modified that a natural gas curtailment is involuntary and beyond the control of Foreland Refining Corporation.

7. State why compliance with the rule or approval order from which variance is sought would produce serious hardship without equal or greater benefits to the public. If financial hardship, include itemized and total costs of compliance.

Under the current Approval Order Condition #12, Foreland must shut down all sources of heat when Mountain Fuel orders a curtailment. This can cause loss of product and equipment damage from frozen pipes.

8. List all possible alternatives in lieu of obtaining a variance. Discuss the advantages and disadvantages of each alternative. A cost estimate for each alternative must be included.

Foreland's only option in lieu of obtaining a variance is to shut the plant down. Mountain Fuel is not giving Foreland the option to continue to use gas during curtailments. Only two hours of warning is given before a curtailment. This is not enough time to shut down and drain the lines to protect the plant equipment.

The cost estimate for shut down for one week is as follows:

$15,000	to replace steam trace lines
$10,000	to reheat tanks of asphalt
$35,000	lost production time (7 days @ $15,000/day)
$60,000	

9. State the advantages and disadvantages to nearby residents if the variance is granted.

The amount of emissions generated by burning the alternate fuels (fuel oil #2, fuel oil #4, fuel oil #6, used oil, LPG) during curtailments is so small that granting a variance will have no disadvantages or advantages to nearby residents.

10. State how the applicant will reduce excess emissions to the maximum extent feasible during the period the variance is in effect.

All oil burning equipment will be maintained properly and alternate fuels will be burned only during periods of mandatory curtailment of natural gas.

11. State the facts showing why operations under such variance are not likely to cause a nuisance, as defined in 76-10-803, Utah Code Annotated.

Burning oil is routinely allowed under the Approval Orders issued by the Utah Department of Air Quality. The emissions are small enough as to be indistinguishable from normal operation.

12. The source is located in: (X) a non-attainment area
( ) an attainment area

If located in a non-attainment area, will emissions resulting from approval of the variance cause a new violation of the National Ambient Air Quality Standards? Include all supporting data and calculations, such as emission estimates and modeling data. Give the exact location of the activity or business for which variance is sought.

Emissions for using the alternate fuels are so low as to be indiscernible to impacts on NAAQS. They are at least 49 times lower than modeling trigger levels.

Site Address:
Foreland Refining Corporation – Cowboy Asphalt Terminal
1710 West 2600 South
Woods Cross, Utah 84087

If located in an attainment area, give the exact location of the activity or business for which variance is sought.

13. Is the source located within a Class I area, as defined by Utah Air Conservation Rules, R307-405-2?
( ) Yes (X) No

If yes, has compliance with the requirements of and within the increments provided in Section 165 of the Federal Clean Air Act increments (42 United States code 7475), or in the case of PM10 increments, only after compliance with the Title 40 of the Code of Federal Regulations, Section 51.166 (p)(4) (as amended – see the June 3, 1993 Federal Register notice, 58 FR 31637) been achieved? Include all supporting data and calculations.

14. Is the variance request considered an emergency situation? (X) Yes ( ) No

If yes, explain in detail.

Plant equipment could be damaged the next time Mountain Fuel calls a curtailment.

15. Are other regulatory agencies or permit authorities involved with the variance request? ( ) Yes (X) No

If yes, state the agency name(s), contact person(s), phone number(s), and reasons for their involvement.

Mark E Mc[illegible]
Signature of Responsible Person

12/19/00
Date

EXCESS EMISSIONS CALCULATIONS

Business Name: Foreland Refining Corporation

The following emission information must be provided by the applicant and filed with the variance application. Include a description of the methodology used to calculate emissions.

EQUIPMENT DESCRIPTION	AIR CONTAMINANT	EMISSION LIMIT	ACTUAL EMISSIONS[1]	EXCESS EMISSIONS[1]	EXCESS EMISSIONS FOR PERIOD OF VARIANCE[2]
Kewanee Boiler, Asphalt Furnace, 2 Tank Heaters	PM_{10}	0.023 lb/hr	0.62 lb/hr	0.59 lb/hr	0.11 tons/16 day period
	SO_x	0.0042 lb/hr	4.19 lb/hr	4.18 lb/hr	0.80 tons/16 day period
	NO_x	0.71 lb/hr	2.71 lb/hr	2.01 lb/hr	0.39 tons/16 day period
	CO	0.59 lb/hr	0.28 lb/hr	0 lb/hr	0 tons/16 day period
	VOC	0.016 lb/hr	0.024 lb/hr	0.0077 lb/hr	0.0015 tons/16 day period

[1] Express actual emissions and excess emissions in units of pounds per hour

[2] Express total excess emissions for period of variance in pounds per hour or tons per year

Emissions given in the above table were calculated assuming there would be 4 natural gas curtailments per year, each lasting 4 days (i.e. 384 hours). The emissions in the "Emission Limit" column represent the emissions that would be produced when natural gas (current conditions) is used as the fuel for the same time period (16 days). The amount (gallons) of alternate fuel needed for the 16 days was calculated from the equipment fuel requirements (Btu/hr) as reported in the 1999 Emission Inventory. The fuel requirement was multiplied by the length of the natural gas curtailment (384 hrs/yr) and divided by the Heating Value of each alternate fuel (Btu/gal):

Alternate Fuel Needed (gal/yr) = (Equipment Fuel Requirement (Btu/hr)) * (Length of Curtailment (hrs/yr)) / (Heating Value (Btu/gal))

The above emissions represent the worst case scenario (the maximum increase in emissions) for the alternate fuels. Only calculations for fuel oil #6 and used oil are included because these two fuels produce the largest increase in emissions (largest increase in NOx for fuel oil #6, and largest increase in all other pollutants for used oil). A Notice of Intent (NOI) is being submitted. This NOI includes complete calculations for all of the alternate fuels (fuel oil #2, fuel oil #4, fuel oil #6, used oil, and LPG).

Table 1. Comparison of emissions for alternate fuels used during periods of natural gas curtailment (based on 4 curtailments per year, each lasting 4 days) to natural gas usage for the same time period (16 days). Reported in tons/16 day period.

Pollutant	Emissions for 16 Days of Natural Gas Use (tons/16 day period)	Emissions for 16 Days of Fuel Oil #6 Use (tons/16 day period)	Emissions for 16 Days of Used Oil Use (tons/16 day period)	Maximum Increase (tons/yr)
PM_{10}	0.0044	0.02	0.12	0.11
SO_X	0.0008	0.67	0.80	0.80
NO_X	0.14	0.52	0.21	0.39
CO	0.11	0.05	0.05	-0.06
VOC	0.0032	0.0045	0.0046	0.0015

Table 2. Comparison of emissions for alternate fuels used during periods of natural gas curtailment (based on 4 curtailments per year, each lasting 4 days) to natural gas usage for the same time period (16 days). Reported in lbs/hr (emissions reported in Table 1 were converted to lbs/hr by the following:
(Emissions lb/hr) = (Emissions ton/16 day period)*(2000 lb/1 ton)*(16 days/384 hours).

Pollutant	Emissions for 16 Days of Natural Gas Use (lbs/hr)	Emissions for 16 Days of Fuel Oil #6 Use (lbs/hr)	Emissions for 16 Days of Used Oil Use (lbs/hr)	Maximum Increase (lbs/hr)
PM_{10}	0.023	0.10	0.62	0.59
SO_X	0.0042	3.50	4.19	4.18
NO_X	0.71	2.71	1.08	2.01
CO	0.59	0.25	0.28	-0.31
VOC	0.016	0.024	0.024	0.0077

Note: The tables above only give a comparison of fuel oil #6 and used oil because these two fuels represent the worst case scenerio for increased emissions (i.e. the maximum increase in emissions).

Criteria Pollutants	EF	Boiler		Heaters		Asphalt Furnace		Totals	
	lb/10^6 scf	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
PM_{10}	7.6	0.013	0.00	0.010	0.00	--	--	**0.023**	**0.0044**
SOx	0.6	0.001	0.00	0.001	0.00	0.002	0.00	**0.0042**	**0.0008**
NOx	100	0.17	0.03	0.13	0.03	0.41	0.08	**0.71**	**0.14**
CO	84	0.14	0.03	0.11	0.02	0.34	0.07	**0.59**	**0.11**
VOC	5.5	0.009	0.00	0.007	0.00	--	--	**0.016**	**0.0032**

PM_{10} and VOC emissions for the Asphalt Furnace are counted in the Asphalt Blowing Still.

HAPS	EF	Boiler		Heaters		Asphalt Furnace		Totals	
	lb/10^6 scf	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
2-Methylnaphthalene	2.4E-05	4.02E-08	7.71E-09	3.17E-08	6.08E-09	9.74E-08	1.87E-08	**1.69E-07**	**3.25E-08**
3-Methylchloranthrene	< 1.8E-06	< 3.0E-09	< 5.8E-10	< 2.4E-09	< 4.6E-10	< 7.3E-09	< 1.4E-09	**< 1.27E-08**	**< 2.44E-09**
7,12-Dimethylbenz(a)anthracene	< 1.6E-05	< 2.7E-08	< 5.1E-09	< 2.1E-08	< 4.1E-09	< 6.5E-08	< 1.2E-08	**< 1.13E-07**	**< 2.17E-08**
Acenaphthene	< 1.8E-06	< 3.0E-09	< 5.8E-10	< 2.4E-09	< 4.6E-10	< 7.3E-09	< 1.4E-09	**< 1.27E-08**	**< 2.44E-09**
Acenaphthylene	< 1.8E-06	< 3.0E-09	< 5.8E-10	< 2.4E-09	< 4.6E-10	< 7.3E-09	< 1.4E-09	**< 1.27E-08**	**< 2.44E-09**
Anthracene	< 2.4E-06	< 4.0E-09	< 7.7E-10	< 3.2E-09	< 6.1E-10	< 9.7E-09	< 1.9E-09	**< 1.69E-08**	**< 3.25E-09**
Benz(a)antrhacene	< 1.8E-06	< 3.0E-09	< 5.8E-10	< 2.4E-09	< 4.6E-10	< 7.3E-09	< 1.4E-09	**< 1.27E-08**	**< 2.44E-09**
Benzene	2.1E-03	3.51E-06	6.75E-07	2.77E-06	5.32E-07	8.52E-06	1.64E-06	**1.48E-05**	**2.84E-06**
Benzo(a) pyrene	< 1.2E-06	< 2.0E-09	< 3.9E-10	< 1.6E-09	< 3.0E-10	< 4.9E-09	< 9.4E-10	**< 8.46E-09**	**< 1.62E-09**
Benzo(b)fluoranthene	< 1.8E-06	< 3.0E-09	< 5.8E-10	< 2.4E-09	< 4.6E-10	< 7.3E-09	< 1.4E-09	**< 1.27E-08**	**< 2.44E-09**
Benzo(g,h,I)perylene	< 1.2E-06	< 2.0E-09	< 3.9E-10	< 1.6E-09	< 3.0E-10	< 4.9E-09	< 9.4E-10	**< 8.46E-09**	**< 1.62E-09**
Benzo(k)fluoranthene	< 1.8E-06	< 3.0E-09	< 5.8E-10	< 2.4E-09	< 4.6E-10	< 7.3E-09	< 1.4E-09	**< 1.27E-08**	**< 2.44E-09**
Chrysene	< 1.2E-06	< 2.0E-09	< 3.9E-10	< 1.6E-09	< 3.0E-10	< 4.9E-09	< 9.4E-10	**< 8.46E-09**	**< 1.62E-09**
Dibenzo(a,h)anthracene	< 1.2E-03	< 2.0E-06	< 3.9E-07	< 1.6E-06	< 3.0E-07	< 4.9E-06	< 9.4E-07	**< 8.46E-06**	**< 1.62E-06**
Dichlorobenzene	3.0E-06	5.02E-09	9.64E-10	3.96E-09	7.60E-10	1.22E-08	2.34E-09	**2.12E-08**	**4.06E-09**
Fluoranthene	2.8E-06	4.69E-09	9.00E-10	3.69E-09	7.09E-10	1.14E-08	2.18E-09	**1.97E-08**	**3.79E-09**
Fluorene	7.5E-02	1.26E-04	2.41E-05	9.90E-05	1.90E-05	3.04E-04	5.84E-05	**5.29E-04**	**1.02E-04**
Formaldehyde	1.8E+00	3.01E-03	5.78E-04	2.38E-03	4.56E-04	7.30E-03	1.40E-03	**1.27E-02**	**2.44E-03**
Hexane	1.8E-06	3.01E-09	5.78E-10	2.38E-09	4.56E-10	7.30E-09	1.40E-09	**1.27E-08**	**2.44E-09**
Indeno(1,2,3-cd)pyrene	< 6.1E-04	< 1.0E-06	< 2.0E-07	< 8.0E-07	< 1.5E-07	< 2.5E-06	< 4.8E-07	**< 4.30E-06**	**< 8.26E-07**
Naphthalene	1.7E-05	2.84E-08	5.46E-09	2.24E-08	4.31E-09	6.90E-08	1.32E-08	**1.20E-07**	**2.30E-08**
Phenanthrene	1.7E-05	2.84E-08	5.46E-09	2.24E-08	4.31E-09	6.90E-08	1.32E-08	**1.20E-07**	**2.30E-08**
Pyrene	5.0E-05	8.37E-08	1.61E-08	6.60E-08	1.27E-08	2.03E-07	3.90E-08	**3.53E-07**	**6.77E-08**
Toluene	3.4E-03	5.69E-06	1.09E-06	4.49E-06	8.61E-07	1.38E-05	2.65E-06	**2.40E-05**	**4.60E-06**

Metallic Pollutants	EF	Boiler		Heaters		Asphalt Furnace		Totals	
	lb/10^6 scf	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
Arsenic*	2.0E-04	3.35E-07	6.43E-08	2.64E-07	5.07E-08	8.12E-07	1.56E-07	**1.41E-06**	**2.71E-07**
Barium	4.4E-03	7.36E-06	1.41E-06	5.81E-06	1.11E-06	1.79E-05	3.43E-06	**3.10E-05**	**5.96E-06**
Beryllium*	< 1.2E-05	< 2.0E-08	< 3.9E-09	< 1.6E-08	< 3.0E-09	< 4.9E-08	< 9.4E-09	**< 8.46E-08**	**< 1.62E-08**
Cadmium*	1.1E-03	1.84E-06	3.53E-07	1.45E-06	2.79E-07	4.46E-06	8.57E-07	**7.76E-06**	**1.49E-06**
Chromium*	1.4E-03	2.34E-06	4.50E-07	1.85E-06	3.55E-07	5.68E-06	1.09E-06	**9.87E-06**	**1.90E-06**
Cobalt*	8.4E-05	1.41E-07	2.70E-08	1.11E-07	2.13E-08	3.41E-07	6.55E-08	**5.92E-07**	**1.14E-07**
Copper	8.5E-04	1.42E-06	2.73E-07	1.12E-06	2.15E-07	3.45E-06	6.62E-07	**5.99E-06**	**1.15E-06**
Lead*	0.0005	8.37E-07	1.61E-07	6.60E-07	1.27E-07	2.03E-06	3.90E-07	**3.53E-06**	**6.77E-07**
Manganese*	3.8E-04	6.36E-07	1.22E-07	5.01E-07	9.63E-08	1.54E-06	2.96E-07	**2.68E-06**	**5.14E-07**
Mercury*	2.6E-04	4.35E-07	8.35E-08	3.43E-07	6.59E-08	1.06E-06	2.03E-07	**1.83E-06**	**3.52E-07**
Molybdenum	1.1E-03	1.84E-06	3.53E-07	1.45E-06	2.79E-07	4.46E-06	8.57E-07	**7.76E-06**	**1.49E-06**
Nickel*	2.1E-03	3.51E-06	6.75E-07	2.77E-06	5.32E-07	8.52E-06	1.64E-06	**1.48E-05**	**2.84E-06**
Selenium*	< 2.4E-05	< 4.0E-08	< 7.7E-09	< 3.2E-08	< 6.1E-09	< 9.7E-08	< 1.9E-08	**< 1.69E-07**	**< 3.25E-08**
Vanadium	2.3E-03	3.85E-06	7.39E-07	3.04E-06	5.83E-07	9.33E-06	1.79E-06	**1.62E-05**	**3.11E-06**
Zinc	2.9E-02	4.85E-05	9.32E-06	3.83E-05	7.35E-06	1.18E-04	2.26E-05	**2.04E-04**	**3.93E-05**

* Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.

INPUT DATA:

Unit	Unit ID #	Fuel Type	Fuel Usage F		Operating Hours OP
			10^6 scf/hr	10^6 scf/yr	hrs/yr
Boiler	--	Natural Gas	0.0017	0.64	384
Heaters	--	Natural Gas	0.0013	0.51	384
Asphalt Furnace	--	Natural Gas	0.0041	1.56	384

Example Calculations

Emission Rates:

			Source of Data or Equation:
1. Emissions $_{lbs/hr}$ = (EF-lb/10^6 scf)(F-10^6 scf/yr)(1/OP-hr/yr) =	0.013	lbs/hr	Calculated by DMK. Example for PM10.
EF = Emission Factor	7.6	lb/10^6 scf	AP-42, Tables 1.4-1, 1.4-2, 1.4-3, 1.4-4 [7/98]
F = Fuel Usage	0.64	10^6 scf/yr	Based on Foreland records
OP = Operating Hours	384	hrs/yr	Hours per year
2. Emissions $_{tons/yr}$ = (Emissions $_{lbs/hr}$)(OP-hr/yr)(1ton/2,000lbs) =	0.002	tons/yr	Calculated by DMK. Example for PM10.
Emissions $_{lbs/hr}$	0.013	lbs/hr	Calculated by DMK, see example calculation #1
OP = Operating Hours	384	hrs/yr	Hours per year

Criteria Pollutants	EF	Boiler		Heaters		Asphalt Furnace		Totals	
	lb/10^3 gal	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
[1] PM-10	4.81	5.63E-02	1.08E-02	4.44E-02	8.53E-03	--	--	**0.10**	**0.019**
[2] SOx	71	8.32E-01	1.60E-01	6.56E-01	1.26E-01	2.02E+00	3.87E-01	**3.50**	**0.67**
NOx	55	6.44E-01	1.24E-01	5.08E-01	9.75E-02	1.56E+00	3.00E-01	**2.71**	**0.52**
CO	5	5.86E-02	1.12E-02	4.62E-02	8.87E-03	1.42E-01	2.73E-02	**0.25**	**0.05**
VOC	1.13	1.32E-02	2.54E-03	1.04E-02	2.00E-03	--	--	**0.02**	**0.005**

PM_{10} and VOC emissions for the Asphalt Furnace are counted in the Asphalt Blowing Still.

HAPS	EF	Boiler		Heaters		Asphalt Furnace		Totals	
	lb/10^3 gal	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
Formaldehyde	0.061	7.15E-04	1.37E-04	5.63E-04	1.08E-04	1.73E-03	3.33E-04	**3.01E-03**	**5.78E-04**
POM	0.0013	< 1.5E-05	< 2.9E-06	< 1.2E-05	< 2.3E-06	< 3.7E-05	< 7.1E-06	**< 6.42E-05**	**< 1.23E-05**
Nitrous Oxide	0.53	< 6.2E-03	< 1.2E-03	< 4.9E-03	< 9.4E-04	< 1.5E-02	< 2.9E-03	**< 2.62E-02**	**< 5.02E-03**

Metallic Pollutants	EF	Boiler		Heaters		Asphalt Furnace		Totals	
	lb/10^{12} Btu	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
Antimony	5.25E-03	8.43E-09	1.62E-09	6.64E-09	1.28E-09	2.04E-08	3.92E-09	**3.55E-08**	**6.82E-09**
*Arsenic	1.32E-03	2.12E-09	4.07E-10	1.67E-09	3.21E-10	5.14E-09	9.86E-10	**8.93E-09**	**1.71E-09**
Barium	2.57E-03	4.12E-09	7.92E-10	3.25E-09	6.24E-10	1.00E-08	1.92E-09	**1.74E-08**	**3.34E-09**
*Beryllium	2.78E-05	4.46E-11	8.57E-12	3.52E-11	6.75E-12	1.08E-10	2.08E-11	**1.88E-10**	**3.61E-11**
*Cadmium	3.98E-04	6.39E-10	1.23E-10	5.04E-10	9.67E-11	1.55E-09	2.97E-10	**2.69E-09**	**5.17E-10**
Chloride	3.47E-01	5.57E-07	1.07E-07	4.39E-07	8.43E-08	1.35E-06	2.59E-07	**2.35E-06**	**4.51E-07**
*Chromium	8.45E-04	1.36E-09	2.60E-10	1.07E-09	2.05E-10	3.29E-09	6.31E-10	**5.71E-09**	**1.10E-09**
*Chromium VI	2.48E-04	3.98E-10	7.64E-11	3.14E-10	6.03E-11	9.65E-10	1.85E-10	**1.68E-09**	**3.22E-10**
*Cobalt	6.02E-03	9.66E-09	1.86E-09	7.62E-09	1.46E-09	2.34E-08	4.50E-09	**4.07E-08**	**7.82E-09**
Copper	1.76E-03	2.82E-09	5.42E-10	2.23E-09	4.28E-10	6.85E-09	1.32E-09	**1.19E-08**	**2.29E-09**
Fluoride	3.73E-02	5.99E-08	1.15E-08	4.72E-08	9.06E-09	1.45E-07	2.79E-08	**2.52E-07**	**4.84E-08**
*Lead	1.51E-03	2.42E-09	4.65E-10	1.91E-09	3.67E-10	5.88E-09	1.13E-09	**1.02E-08**	**1.96E-09**
*Manganese	3.00E-03	4.81E-09	9.24E-10	3.80E-09	7.29E-10	1.17E-08	2.24E-09	**2.03E-08**	**3.90E-09**
*Mercury	1.13E-04	1.81E-10	3.48E-11	1.43E-10	2.75E-11	4.40E-10	8.44E-11	**7.64E-10**	**1.47E-10**
Molybdenum	7.87E-04	1.26E-09	2.43E-10	9.96E-10	1.91E-10	3.06E-09	5.88E-10	**5.32E-09**	**1.02E-09**
*Nickel	8.45E-02	1.36E-07	2.60E-08	1.07E-07	2.05E-08	3.29E-07	6.31E-08	**5.71E-07**	**1.10E-07**
*Phosphorous	9.46E-03	1.52E-08	2.92E-09	1.20E-08	2.30E-09	3.68E-08	7.07E-09	**6.40E-08**	**1.23E-08**
*Selenium	6.83E-04	1.10E-09	2.10E-10	8.64E-10	1.66E-10	2.66E-09	5.10E-10	**4.62E-09**	**8.87E-10**
Vanadium	3.18E-02	5.10E-08	9.80E-09	4.02E-08	7.73E-09	1.24E-07	2.38E-08	**2.15E-07**	**4.13E-08**
Zinc	2.91E-02	4.67E-08	8.97E-09	3.68E-08	7.07E-09	1.13E-07	2.17E-08	**1.97E-07**	**3.78E-08**

* Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.

INPUT DATA:

Unit	Unit ID #	Fuel Type	Fuel Usage F		Operating Hours OP	Heat Input HI		Heating Value HV
			gal/hr	gal/yr	hrs/yr	10^{12} Btu/hr	10^{12} Btu/yr	Btu/gal
Boiler	--	Fuel Oil #6	11.71	4,498.4	384	1.60E-06	6.16E-04	150,000
Heaters	--	Fuel Oil #6	9.24	3,547.2	384	1.27E-06	4.86E-04	150,000
Asphalt Furnace	--	Fuel Oil #6	28.41	10,908.5	384	3.89E-06	1.49E-03	150,000

Example Calculations

Emission Rates (for pollutants with Emission Factor in lb/10^3 gal):

Source of Data or Equation:

1. Emissions $_{lbs/hr}$ = (EF-lb/10^3 gal)(F-10^6 gal/yr)(1/OP-hr/yr) = 0.056 lbs/hr — Calculated by DMK. Example for PM10.

EF = Emission Factor	4.81 lb/10^3 gal	AP-42, 1.3 Tables 1.3-1, 1.3-3, 1.3-7, 1.3-8 [9/98]
F = Fuel Usage	4,498 gal/yr	Calculated by DMK (see Appendix A - 'Fuel Requirements')
OP = Operating Hours	384 hrs/yr	Calculated by DMK (see Appendix A - 'Fuel Requirements')

2. Emissions $_{tons/yr}$ = (Emissions $_{lbs/hr}$)(OP-hr/yr)(1ton/2,000lbs) = 0.01 tons/yr — Calculated by DMK. Example for PM10.

Emissions $_{lbs/hr}$	0.056 lbs/hr	Calculated by DMK (see example calculation 1)
OP = Operating Hours	384 hrs/yr	Calculated by DMK (see Appendix A - 'Fuel Requirements')

Emission Rates (for pollutants with Emission Factor in lb/10^{12} Btu):

Source of Data or Equation:

3. Emissions $_{lbs/hr}$ = (EF-lb/10^{12} Btu)(HI-10^{12} Btu/hr) = 4.67E-08 lbs/hr — Calculated by DMK. Example for PM10.

EF = Emission Factor	0 lb/10^3 gal	AP-42, 1.3 Tables 1.3-1, 1.3-3, 1.3-7, 1.3-8 [9/98]
HI = Heat Input	1.60E-06 10^{12} Btu/hr	Calculated by DMK (see example calculation 5)

4. Emissions $_{tons/yr}$ = (EF-lb/10^{12} Btu)(HI-10^{12} Btu/yr)(1 ton/2000 lbs) = 8.97E-09 tons/yr — Calculated by DMK. Example for PM10.

EF = Emission Factor	0 lb/10^3 gal	Calculated by DMK (see example calculation 1)
HI = Heat Input	6.16E-04 10^{12} Btu/yr	Calculated by DMK (see example calculation 6)

Heat Input (HI):

			Source of Data or Equation:
5. $HI_{Btu/hr}$ = (F-gal/hr)(HV-Btu/gal) =	1.60E-06	10^{12} Btu/hr	Calculated by DMK
F = Fuel Usage	11.7146	gal/hr	Calculated by DMK (see Appendix A - 'Fuel Requirements')
HV = Heating Value	150,000	Btu/gal	AP-42 Appendix A, page A-5 (9/85)
6. $HI_{Btu/yr}$ = (F-gal/yr)(HV-Btu/gal) =	6.16E-04	10^{12} Btu/yr	Calculated by DMK
F = Fuel Usage	4,498.4	gal/yr	Calculated by DMK (see Appendix A - 'Fuel Requirements')
HV = Heating Value	150,000	Btu/gal	AP-42 Appendix A, page A-5 (9/85)

Notes

[1] The emission factor for PM_{10} was calculated using AP-42 Table 1.3-1(9/98) assuming a sulfer weight percent of 0.5%:
(5.17)((1.12(0.5))+0.37) lb/10^3 gal = 4.81 lb/10^3 gal

[2] The emission factor for SO_X was calculated using AP-42 Table 1.3-1(9/98) assuming a sulfer weight percent of 0.5%:
(157)(0.5) lb/10^3 gal = 78.5 lb/10^3 gal

Criteria Pollutants	EF	Boiler		Heaters		Asphalt Furnace		Totals	
	lb/10^3 gal	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
[1] PM-10	25.5	3.45E-01	6.62E-02	2.72E-01	5.22E-02	--	--	**0.62**	**0.118**
[2] SOx	73.5	9.93E-01	1.91E-01	7.83E-01	1.50E-01	2.41E+00	4.63E-01	**4.19**	**0.80**
NOx	19	2.57E-01	4.93E-02	2.03E-01	3.89E-02	6.23E-01	1.20E-01	**1.08**	**0.21**
CO	5	6.76E-02	1.30E-02	5.33E-02	1.02E-02	1.64E-01	3.15E-02	**0.28**	**0.05**
VOC	1	1.35E-02	2.60E-03	1.07E-02	2.05E-03	--	--	**0.02**	**0.005**

PM_{10} and VOC emissions for the Asphalt Furnace are counted in the Asphalt Blowing Still.

HAPS	EF	Boiler		Heaters		Asphalt Furnace		Totals	
	lb/10^3 gal	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
[3] Hydrogen Chloride	33.0	4.46E-01	8.56E-02	3.52E-01	6.75E-02	1.08E+00	2.08E-01	**1.88E+00**	**3.61E-01**

Metallic Pollutants	EF	Boiler		Heaters		Asphalt Furnace		Totals	
	lb/10^3 gal	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
Arsenic	1.1E-01	1.49E-03	2.85E-04	1.17E-03	2.25E-04	3.61E-03	6.92E-04	**6.26E-03**	**1.20E-03**
Cadmium	9.3E-03	1.26E-04	2.41E-05	9.91E-05	1.90E-05	3.05E-04	5.85E-05	**5.30E-04**	**1.02E-04**
Chromium	2.0E-02	2.70E-04	5.19E-05	2.13E-04	4.09E-05	6.56E-04	1.26E-04	**1.14E-03**	**2.19E-04**
Cobalt	2.1E-04	2.84E-06	5.45E-07	2.24E-06	4.30E-07	6.88E-06	1.32E-06	**1.20E-05**	**2.30E-06**
[4] Lead	2.8E+01	3.72E-01	7.14E-02	2.93E-01	5.63E-02	9.01E-01	1.73E-01	**1.57E+00**	**3.01E-01**
Manganese	6.8E-02	9.19E-04	1.76E-04	7.25E-04	1.39E-04	2.23E-03	4.28E-04	**3.87E-03**	**7.44E-04**
Nickel	1.1E-02	1.49E-04	2.85E-05	1.17E-04	2.25E-05	3.61E-04	6.92E-05	**6.26E-04**	**1.20E-04**

INPUT DATA:

Unit	Unit ID #	Fuel Type	Fuel Usage		Operating Hours OP
			gal/hr	gal/yr	hrs/yr
Boiler	--	Used Oil	13.52	5,190.5	384
Heaters	--	Used Oil	10.66	4,092.9	384
Asphalt Furnace	--	Used Oil	32.78	12,586.7	384

Example Calculations

Emission Rates:			**Source of Data or Equation:**
1. Emissions $_{lbs/hr}$ = (EF-lb/10^3 gal)(F-10^6 gal/yr)(1/OP-hr/yr) =	0.345	lbs/hr	Calculated by DMK. Example for PM10.
EF = Emission Factor	25.50	lb/10^3 gal	AP-42, 1.11 Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4 [10/96]
F = Fuel Usage	5,190	gal/yr	Calculated by DMK (see Appendix A - 'Fuel Requirements')
OP = Operating Hours	384	hrs/yr	Calculated by DMK (see Appendix A - 'Fuel Requirements')
2. Emissions $_{tons/yr}$ = (Emissions $_{lbs/hr}$)(OP-hr/yr)(1ton/2,000lbs) =	0.07	tons/yr	Calculated by DMK. Example for PM10.
Emissions $_{lbs/hr}$	0.345	lbs/hr	Calculated by DMK (see example calculation 1)
OP = Operating Hours	384	hrs/yr	Calculated by DMK (see Appendix A - 'Fuel Requirements')

Notes

[1] The emission factor for PM_{10} was calculated using AP-42 Table 1.11-1(10/96) assuming a ash weight percent of 0.5%:
[2] The emission factor for SO_X was calculated using AP-42 Table 1.11-2(10/96) assuming a sulfer weight percent of 0.5%:
[3] The emission factor for Hydrogen Chloride was calculated using AP-42 Table 1.11-3(10/96) assuming a sulfer weight percent of 0.5%:
[4] The emission factor for Lead was calculated using AP-42 Table 1.11-1(10/96) assuming a lead weight percent of 0.5%:

Equipment	Required Energy Input (Btu/hr) EI	Alternate Fuel Hours of Usage (hrs/yr) AF OP	Natural Gas Hours of Usage (hrs/yr) NG OP	Fuel Oil #2 As Alternate Fuel: Fuel Oil #2 Needed (gal/yr) AF FU	Fuel Oil #2 As Alternate Fuel: Natural Gas Needed (10^6 scf/yr) NG FU	Fuel Oil # 4 As Alternate Fuel: Fuel Oil #4 Needed (gal/yr) AF FU	Fuel Oil # 4 As Alternate Fuel: Natural Gas Needed (10^6 scf/yr) NG FU	Fuel Oil # 6 As Alternate Fuel: Fuel Oil #6 Needed (gal/yr) AF FU	Fuel Oil # 6 As Alternate Fuel: Natural Gas Needed (10^6 scf/yr) NG FU	Used Oil As Alternate Fuel: Used Oil Needed (Gal/yr) AF FU	Used Oil As Alternate Fuel: Natural Gas Needed (10^6 scf/yr) NG FU	LPG As Alternate Fuel: LPG Needed (gal/yr) AF FU	LPG As Alternate Fuel: Natural Gas Needed (10^6 scf/yr) NG FU
Boiler	1.76E+6	384	8,376	4,925	14.02	4,925	14.02	4,498	14.02	5,190	14.02	7,178	14.02
Tank Heaters	1.39E+6	384	8,376	3,884	11.05	3,884	11.05	3,547	11.05	4,093	11.05	5,660	11.05
Asphalt Furnace	4.26E+6	384	8,376	11,944	33.99	11,944	33.99	10,908	33.99	12,587	33.99	17,407	33.99

Natural Gas Heating Value NG HV		Fuel Oil #2 Heating Value AF HV		Fuel Oil #4 Heating Value AF HV		Fuel Oil #6 Heating Value AF HV		Used Oil Heating Value AF HV		LPG Heating Value AF HV	
1,050	Btu/scf	137,000	Btu/gal	137,000	Btu/gal	150,000	Btu/gal	130,000	Btu/gal	94,000	Btu/gal

Equipment	Now # Gas Used to Operate Equipment 8760 hrs per year (scf/yr)
Boiler	14.66E+6
Tank Heaters	11.56E+6
Asphalt Furnace	35.55E+6

Example Calculations

Required Energy Input (EI):

			Source of Data or Equation:
1.	$EI_{Btu/hr}$ = (Amount of Natural Gas Used)(NG HV)/(Hours per year) =	1.76E+06 Btu/hr	Calculated by DMK
	Amount of Natural Gas Used	14.66E+6 scf/yr	Amount of natural gas required to operate equipment 8,760 hours per year (based on Foreland records)
	NG HV = Natural Gas Heating Value	1,050 Btu/scf	AP-42 Appendix A, page A-5 (9/85)
	Hours per Year	8760 hrs/yr	Hours in one year

Alternate Fuel Hours of Usage (DF OP):

			Source of Data or Equation:
2.	$AF\ OP_{hrs/yr}$ = (Curtailments/Year)(Days/Curtailment)(24hrs/Day) =	384 hrs/yr	Calculated by DMK
	Number of Natural Gas Curtailments per Year	4 #/yr	DMK Estimate
	Days per Curtailment	4 days/#	DMK Estimate
	Hours per Day	24 hrs/day	Hours in one day

Natural Gas Hours of Usage (NG OP):

			Source of Data or Equation:
3.	$NG\ OP_{hrs/yr}$ = (Hours/Year) - (DF OP) =	8,376 hrs/yr	Calculated by DMK
	Hours in one Year	8,760 hrs/yr	Hours in one year
	DF OP = Diesel Fuel Hours of Usage	384 hrs/yr	Calculated by DMK (see calculation #2)

		Source of Data or Equation:
Diesel Fuel Needed (D FU):		
4. D FU $_{gal/yr}$ = (EI)(DF OP)(DF HV) =	4,925 gal/yr	Calculated by DMK
EI = Required Energy Input	1.76E+06 Btu/hr	Calculated by DMK (see calculation #1)
DF OP = Diesel Fuel Hours of Usage	384 hrs/yr	Calculated by DMK (see calculation #2)
DF HV = Diesel Fuel Heating Value	137,000 Btu/gal	AP-42 Appendix A, page A-5 (9/85)
		Source of Data or Equation:
Natural Gas Needed (NG FU):		
5. NG FU $_{10^6 scf/yr}$ = (EI)(NG OP)/(NG HV) =	14.02 10^6 scf/yr	Calculated by DMK
EI = Required Energy Input	1.76E+06 Btu/hr	Calculated by DMK (see calculation #1)
NG OP = Natural Gas Hours of Usage	8,376 hrs/yr	Calculated by DMK (see calculation #3)
Natural Gas HV = Natural Gas Heating Value	1,050 Btu/scf	AP-42 Appendix A, page A-5 (9/85)

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State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY

150 North 1950 West
P.O. Box 144820
Salt Lake City, Utah 84114-4820
(801) 536-4000 Voice
(801) 536-4099 Fax
(801) 536-4414 T.D.D.

MEMORANDUM

TO: Air Quality Board DAQ-002-01

THROUGH: Richard Sprott, Executive Secretary

FROM: John Jenks, Environmental Engineer

DATE: January 3, 2001

SUBJECT: Approval Order Variance Request: Inland Refining Incorporated

Inland Refining Incorporated has requested a variance, dated December 27, 2000, from their existing Approval Order (AO) (DAQE-0868-94, dated October 7, 1994) addressed to the plant site located at 2355 South, 1100 West, Woods Cross. The current AO limits Inland Refining Inc. to using only natural gas as a fuel, except during periods of natural gas curtailment. The request asks that Inland Refining Inc. be able to use other fuels, specifically fuel oils #2, #4, #5, #6 and used oil, to be used as primary fuels.

This change will have no impact on Inland Refining's allowable emissions, but will result in increases in actual emissions during this time period. These changes are as follows:

Actual Emissions Increase During Variance Period

Pollutant	tons/year
PM10	5.16
SO2	39.0
NOx	20.96
CO	-3.66
VOC	0.26
Total HAPs	0.21

The estimates in this proposal are based on existing levels of production, applicable AP-42 emission factors, and assumptions on the weight percent sulfur in the fuel oils being less than or equal to 0.50%.

While Inland Refining Incorporated is operating under an AO for their Woods Cross plant, this plant is also listed in the Salt Lake County portion of the PM10 SIP under the name of Crysen Refining. This document details specific requirements of control strategies, and control equipment (known hereafter as Reasonably Achievable Control Technology - RACT). RACT was determined and applied to both source categories and specific sources as part of the overall maintenance plan for Salt Lake County.

Both the general RACT provisions for refineries and the source specific requirements of Section IX, Part H of the SIP require Inland Refining Inc. (Crysen Refining) to use only natural gas as fuel except during periods of natural gas curtailment.

Therefore, the staff recommends that this variance request not be granted because the change will affect the RACT determinations of the SIP, which may have an impact on the maintenance plan for Salt Lake County.

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
Richard W. Sprott
Director

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MEMORANDUM

TO: Air Quality Board DAQC-1772-00

FROM: Richard W. Sprott, Acting Executive Secretary

DATE: December 8, 2000

SUBJECT: COMPLIANCE ACTIVITIES - November 2000

Annual Inspections Conducted:

A	6
SM	3
B	19

Initial Compliance Inspections Conducted:

A	0
SM	1
B	5

On-Site stack test audits conducted: 13
Stack test report reviews: 21

On-site CEM audits conducted: 12
Emission reports reviewed: 10

Oxy fuels inspections conducted: 51

* Miscellaneous inspections conducted: 9

Complaints received: 27

VOC inspections:

Tankers	0
Degreasers	0
Paint Booths	0

* Miscellaneous inspections include, e.g., surveillance, level I inspections, complaints, onsite training, tanker vapor certifications, dust patrol, smoke patrol, open burning, etc.

Source Compliance Action Notice issued 1

Notices of Violation issued 7

Settlement Agreements resolved 3

Penalties Collected $86,800

Notices of Violations issued to:

Utah Associated Municipal Power Systems
Intermountain Power Services Corporation
Geodyne Transport
Kennecott Utah Copper Corporation
Powder River Inc
Dillman Investments LLC
Ashdown Brothers Construction

Settlement Agreements Reached:

Jack B Parsons.....$2,000
Pine Factory.....$ 500.
US Gypsum.....$84,300

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MEMORANDUM

TO: Utah Air Quality Board DAQH-0937-00

FROM: Richard W. Sprott, Acting Executive Secretary

DATE: December 15, 2000

SUBJECT: Hazardous Air Pollutant Section Compliance Activities - November, 2000

	10/00	11/00
Asbestos Demolition/Renovation Inspections	9	13
Asbestos in Schools Inspections	3	3
MACT Compliance Inspections	1	1
Other NESHAP Inspections	0	0
State Rules (Only) Inspections	0	0
Asbestos Notifications Approved	62	63
Asbestos Phone Calls Answered	392	357
Asbestos Individual Certifications: Approved/Disapproved	45/0	20/0
Company Certifications/Re-certifications	1/13	3/9
Alternate Asbestos Work Practices: Approved/Disapproved	1/0	1/0
Lead Based Paint (LBP) Inspections	0	0
LBP Notifications Approved	0	0
LBP Phone Calls Answered	82	58
LBP Letters prepared and mailed	98	98
LBP Courses Received/Approved	10/0	0
LBP Course Audits	0	0
LBP Certifications Approved/Disapproved	20/0	9/2
LBP Company Certifications	1	1
Notices of Violation Issued	1	0
Notices of Noncompliance (NON)	0	0
SCANS (warning letters) Issued	3	2
Settlement Agreements Finalized	0	0
Penalties Agreed to	$0	$46,350

Notice of Violation issued to: None

Settlement Agreements Reached: Marie Callender's, Farr West Roofing

UTAH STATE DIVISION OF AIR QUALITY

PM2.5 Actual Concentration (24-hr average) in Micrograms per Cubic Meter

2000 November

Date	BR	BT	BX	CW	GV	HE	HW	HG	HV	LN	LX	L4	NP	N2	OG	SF	WT	WX	WV	VX
11/01							7.5			5.1										
11/02	4.5	4.7	5.0	9.7	5.4	5.3	7.3	5.8		9.4	9.5		10.0	10.8		8.2	8.3	7.9	10.8	10
11/03							10.5			14.1										
11/04							13.3			12.6										
11/05	3.2	2.7		3.9	2.0	3.8	4.1	3.4	3.4	4.1		3.8	5.3	4.5		4.0	3.7		4.8	
11/06							7.7			7.3										
11/07							8.8			11.5										
11/08	7.4	9.0	9.6	13.4	4.2	7.2	12.0		7.0	12.0	13.1		13.0	14.1		7.7	8.4	9.2	10.8	11
11/09							11.1			9.3										
11/10							13.8			17.9										
11/11	10.4	9.5		21.2	10.3	9.1	11.6	13.6	7.5	20.5			19.3	18.0		16.4	11.2		16.1	
11/12							14.0			13.9										
11/13							10.5			17.2										
11/14	6.0	8.1	7.9	11.7	4.0	4.9	7.9	6.6	8.9	8.6	9.2	8.3	10.3	11.5			7.7	8.0	10.0	9.
11/15							8.6			12.1										
11/16							9.9			16.4										
11/17	14.6	12.4		22.6	5.0	10.6	14.1	16.9	16.4	23.3			22.4	21.0		15.0	17.1		24.9	
11/18							19.2			23.6										
11/19							31.5			26.5										
11/20	15.8	21.9	22.7	46.1	24.7	15.1	38.7	21.3	17.3	28.0	28.1	23.7	28.5	39.3			13.9	13.7	41.5	40
11/21							49.0			33.5										
11/22							64.0			31.3										
11/23	28.0	24.6		50.4	15.8	27.8	43.2	35.6		40.9		17.6	37.7	44.7		31.5	23.0		46.4	
11/24							38.7			33.5										
11/25							24.9			25.5										
11/26	21.2	31.8	32.5	36.0	22.5	18.8	37.0	25.1	24.4	31.5	32.0	23.2	28.4	37.3		23.2	25.5		38.5	38
11/27							37.7			35.4										
11/28							37.7			33.2										
11/29	8.5	8.5		12.3	12.7	4.7	12.5	9.5	9.0	14.0		12.2	15.1	23.5		4.7	9.2		11.8	
11/30							7.5			6.4										

Arith Mean	12.0	13.3	15.6	22.7	10.7	10.7	20.5	15.3	11.7	19.3	18.4	14.8	19.0	22.5		13.8	12.8	9.7	21.6	21
Max 24-hr Avg	28.0	31.8	32.5	50.4	24.7	27.8	64.0	35.6	24.4	40.9	32.0	23.7	37.7	44.7		31.5	25.5	13.7	46.4	40.
Std. Dev	7.9	9.5	11.7	16.1	8.1	7.7	15.6	10.6	7.0	10.5	10.8	8.1	10.2	13.6		9.7	7.1	2.7	15.2	15
Days of Data	10	10	5	10	10	10	30	9	8	30	5	6	10	10		8	10	4	10	5
Yearly Mean	7.4	8.4	7.7	10.8	6.8	7.9	10.8	7.1	11.7	9.5	9.6	7.6	9.5	12.8	17.4	7.3	8.1	6.1	11.3	9.2

UTAH STATE DIVISION OF AIR QUALITY

PM2.5 Actual Concentration (24-hr average) in Micrograms per Cubic Meter

2000 December

Date	BR	BT	BX	CW	GV	HE	HW	HG	HV	LN	LX	L4	NP	N2	OG	SF	WT	WX	WV	VX
12/01							19.9			13.0										
12/02	10.6	20.2	20.5	28.8	15.5	14.5	29.3	13.2	8.1	17.8	18.3	14.9	19.4	36.4		15.4	8.7	9.8	36.5	35
12/03							32.5			18.1										
12/04							35.0			22.1										
12/05	33.6	29.6		48.6	27.6	18.0	42.4	21.3		21.4		27.2	21.2	57.6		16.6			54.3	
12/06							41.1			30.7										
12/07							38.8			22.3										
12/08	35.8	36.2	36.8	40.1	29.7	17.1	38.9	14.1	33.3	22.2	22.7		19.0	49.1		8.0		33.2	46.4	45
12/09							16.0			8.3										
12/10							7.7			4.8										
12/11	3.7	6.2		14.5		3.4		10.0	5.2				9.9				6.5		11.5	
12/12																				
12/13																				
12/14	1.2	3.7	3.7		2.4				4.0			3.2	5.4	7.5			3.6	3.7	5.3	6
12/15																				
12/16																				
12/17	2.9	5.0			1.9				2.8			7.5	4.4	5.4			4.0		3.1	
12/18																				
12/19																				
12/20																				
12/21																				
12/22																				
12/23																				
12/24																				
12/25																				
12/26																		27.0		
12/27																				
12/28																				
12/29																				
12/30																				
12/31																				
Arith Mean	14.6	16.8	20.3	33.0	15.4	13.3	30.1	14.6	10.7	18.1	20.5	13.2	13.2	31.2		13.3	5.7	18.4	26.2	29
Max 24-hr Avg	35.8	36.2	36.8	48.6	29.7	18.0	42.4	21.3	33.3	30.7	22.7	27.2	21.2	57.6		16.6	8.7	33.2	54.3	45
Std. Dev	15.9	14.0	16.6	14.7	13.3	6.7	11.8	4.8	12.8	7.6	3.1	10.5	7.6	23.8		4.7	2.4	13.9	22.3	20
Days of Data	6	6	3	4	5	4	10	4	5	10	2	4	6	5		3	4	4	6	3
Yearly Mean	8.6	8.8	8.7	11.7	7.3	8.7	11.6	7.5	11.3	9.8	10.1	7.8	9.7	13.8	17.4	7.5	8.1	7.3	12.2	10

UTAH STATE DIVISION OF AIR QUALITY

47mm Partisol: PM10 Concentration Adjusted to Sea Level (24-hr average) in Micrograms per Cubic Meter

2000 November

Date	Cottonwood	Hawthorn	Lindon	Logan 4	Magna(W)	Moab	NProvo	NProvo-X	NSL	NSL-X	Ogden
11/01		14	9						17		
11/02	20	16	19	17		17	21	20	33	36	
11/03		25	31		10				60		
11/04			25						51		
11/05	8	8	8	5			10		17		
11/06		11	11						19		
11/07		19	22						30		
11/08	19	25	21	17	15	15	22	21	31	36	
11/09		14	11						13		
11/10		19	23						22		
11/11	27	19	25	21	16		26		32		
11/12		17	18						16		
11/13		26	36						44		
11/14	19	18	21	24	11	24	24	23	29	32	
11/15		10	19						14		
11/16		16	27						29		
11/17	28	26	32	23	18		32		42		
11/18		37	34						45		
11/19		51	46						59		
11/20		79	63	44	51		54	56	87	91	
11/21	98	107	89						115		
11/22		111	86						106		
11/23	72	67	68	31	34		60		70		
11/24		62	57						60		
11/25		46	42						54		
11/26	57	63	58	32	41	26	50	49	60		
11/27		89	84						105	106	
11/28		81	73						69		
11/29	33	41	41	23	27		41		89		
11/30		17	24						46		
Arith Mean	38	39	37	24	25	20	34	34	49	60	
Max 24-hr Avg	98	111	89	44	51	26	60	56	115	106	
Std. Dev	28	30	24	11	14	5	16	17	29	35	
Days of Data	10	29	30	10	9	4	10	5	30	5	
Days >150											
Yearly Avg	29	28	32	24	23	19	25	27	46	45	28

UTAH STATE DIVISION OF AIR QUALITY

47mm Partisol: PM10 Concentration Adjusted to Sea Level (24-hr average) in Micrograms per Cubic Meter

2000 December

Date	Cottonwood	Hawthorn	Lindon	Logan 4	Magna(W)	Moab	NProvo	NProvo-X	NSL	NSL-X	Ogden
12/01		50	48						72		
12/02	49	56	46	28	33	36	50	48	74	78	
12/03		54	39						73		
12/04		69	58						95		
12/05	78	72	52	55	55		49		114		
12/06		73	72						99		
12/07		73	51						98		
12/08	72	70	61		49	30	45	43	89	86	
12/09		32	13						48		
12/10			5								
12/11	25	23			17		22				
12/12		27									
12/13		20							22		
12/14		14			9		14	14	28	28	
12/15		10									
12/16		35									
12/17		22			32		15				
12/18		31									
12/19											
12/20											
12/21											
12/22											
12/23											
12/24											
12/25											
12/26											
12/27											
12/28											
12/29											
12/30											
12/31											
Arith Mean	56	43	44	41	33	33	32	35	74	64	
Max 24-hr Avg	78	73	72	55	55	36	50	48	114	86	
Std. Dev	24	23	21	19	18	4	17	19	30	31	
Days of Data	4	17	10	2	6	2	6	3	11	3	
Days >150											
Yearly Avg	29	28	32	24	23	19	25	27	46	45	28

AQ
~~AEB~~ Board members

Debbie O.

Governor Mike Leavitt
Utah State Capital
Salt Lake City, UT 84114

Dear Governor Leavitt,

Enclosed with this note, you will find a copy of a letter sent to Mr. John Black, an Air Quality Environmental Engineer for the State of Utah. There is great concern about a bias he may have for big business and much less concern for the average citizen. A person with your responsibilities needs to be aware of, and possibly take corrective action in, a situation like this.

There are many citizens here in Stansbury Park who would really appreciate your interest and help in this matter.

Respectfully,

Carol L. Gallop

Carol L. Gallop

Carol L. Gallup
Stansbury Citizens for Clean Air
477 Country Club
Stansbury Park, UT 84074
Tel. 435-882-0892

cc: Mr. Richard Sprout
Senator Ron Allen
Tooele County Commissioners
State of Utah Air Quality Board Members
Jeff Schmerke, Transcript Bulletin

John Black
Utah Air Quality Environmental Engineer

RE: Erda Plant, Staker Construction, Tooele County

Dear Mr. Black,

It appears that the State of Utah is biased on behalf of Staker Construction Company. The people of Stansbury are downwind from that plant. Where is our say? Where is our support?

At the November 1 Air Quality Board meeting you were assigned to research the best available control technology used in other states for the control of emissions and odors associated with asphalt production. Particularly, you were told to look at the asphalt batch plants in the Los Angeles area.

At the December 6 board meeting you reported to the board that nothing was being done in other states to control volatile organic compounds or hazardous air pollutants in asphalt plants.

You stated that odors were not controlled in any manner. I must correct you. It took just a few minutes visiting the web page of the Air Quality Management District, which covers Los Angeles, Orange, Riverside, and San Bernardino Counties, to find out how wrong you were. At this sight (www.aqmd.gov/bact/10.html) I found that for the last ten years this district has used afterburners with a 0.3 second retention time, at 1400F to control asphalt plant emissions, volatile organic compounds, and associated odors.

The web page also indicated that the odor is controlled with a nuisance rule. Rule 402 does not allow discharge from any source whatsoever, such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons (10 persons).

It is clear that you failed to thoroughly research the best available control technology for asphalt batch plants. You also prematurely reported that these controls were not in place in other areas. I request to be placed on the agenda for the Jan. 2001 Air Quality Board Meeting to discuss this matter. I have sent copies of this letter to others whom I feel should be informed about this matter.

Thank You

Carol L Gallop

Carol L. Gallop

Carol L. Gallup
Stansbury Citizens for Clean Air
477 Country Club
Stansbury Park, UT 84074
Tel. 435 882 0892

December 12, 2000

Richard Sprott, Director
Division of Air Quality
Utah Department of Environmental Quality
150 North 1950 West
Salt Lake City, Utah 84116

RE: Request for Further Research on Other State Emissions Standards and BACTs
Staker Asphalt Plant, Stansbury Park, Utah

Dear Mr. Sprott:

My Stansbury Park neighbors and I find questionable information in the November 2000 memo that was written by Jon Black, through you, to the Air Quality Board. This memo states that VOCs and odors are not controlled or regulated in any manner in California. Knowing that California has very strict air emissions standards for a wide variety of sources, we researched and found the enclosed information from the California South Coast Air Quality Management District (AQMD) (Internet address http://www.aqmd.gov/bact/10.html).

The AQMD information indicates that there are indeed BACTs for VOCs associated with asphalt plants. Additional AQMD information (enclosed) shows that California has Nuisance Rule 402 that reads as follows:

RULE 402. NUISANCE

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

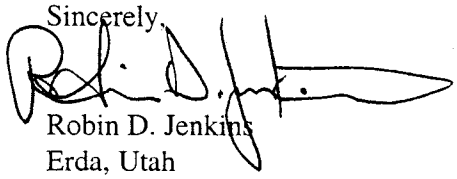
As you can see, the information contained in the above-referenced memo, that was verbally recited at the December 6, 2000 Air Quality Board meeting, appears to be incorrect. The memo and verbal remarks explicitly stated that neither VOCs nor odors are regulated or controlled in California "in any manner."

As citizens, we take objection to what appears to be inadequate research and faulty information. And we strongly object to the fact that private citizens are forced to conduct this research on their own when you have state-paid professionals that are charged with these performing duties.

Our research further shows that VOC emissions control equipment, such as thermal catalytic oxidizers, generally costs around $35,000 new. Therefore, costs associated with Staker to better equip their facility with best available control technologies for emissions control are minimal compared to the benefit Staker realizes in overall profits, and the benefits realized by the community that Staker impacts.

Therefore, we insist that you more thoroughly research the regulations in Utah's neighboring states, the BACTs that exist, and more truthfully report your findings at the next Air Quality Board meeting on January 3, 2001. We further insist that you impose BACTs that currently exist, such as afterburners or thermal catalytic oxidizers, on Staker's operations.

Sincerely,



Robin D. Jenkins
Erda, Utah

w/Enclosures

AQMD Best Available Control Technology (BACT) Guideline

Equipment or Process: Asphalt Batch Plant
Equipment Rating: All

Revision Date: 04/05/90
Revision Number: 2

	VOC	NOx	SOx	CO	PM
BACT Technologically Feasible[1]	Afterburner (≥.3 Sec Retention Time at ≥1400°F)	Natural Gas with Flue Gas Recirculation and Low NOx Burner			
BACT Achieved in Practice or Contained in EPA Approved SIP[2]		Natural Gas with Low NOx Burner			Baghouse
BACT For Small Businesses[1,3]	Afterburner (≥0.3 Sec Retention Time at ≥1400°F)	• Natural Gas with Flue Gas Recirculation and Low NOx Burner • Natural Gas with Low NOx Burner • Natural Gas			• Baghouse • Electrostatic Precipitator
Alternate Basic Equipment or Process[1]					
BACT SCAQMD Board's Clean Fuel Policy[2]		Natural Gas or Other Equivalent Clean Fuels as Standby Fuel or Equivalent Control Technology	Natural Gas or Other Equivalent Clean Fuels as Standby Fuel or Equivalent Control Technology		Natural Gas or Other Equivalent Clean Fuels as Standby Fuel or Equivalent Control Technology

1. Requires Economic Analysis.

2. No Economic Analysis.

3. Control technologies are in descending order of efficiency. The most efficient control technology must be considered first when conducting a economic analysis.

(Adopted May 7, 1976)

RULE 402. NUISANCE

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

January Air Quality Board Meeting

Staker Paving - Erda Asphalt Plant

- To reiterate statements made at the December board meeting, in reference to the Staker Paving Erda Asphalt Plant, the Board requested in November that the DAQ determine what is taking place in other states as far as asphalt plant controls and odor control. I stated that research has shown that in California, Colorado, New Mexico, and Arizona, Best Available Control Tecnology for control of Particulate Matter (PM_{10}) is the use of a baghouse or scrubber. Volatile Organic Compounds and Hazardous Air Pollutants are not controlled for asphalt plants. Odor associated with these pollutants, from these plants, is not regulated or controlled in any manner. All of these states, especially California, as stated by Kim Wynn, who deals with permitting for the California Air Resources Board, **rely heavily on local planning and zoning commissions to address these plant placements.** I was also told the same information from Christopher Lapoint - Permit Engineer State of Colorado, George Llewellyn - Program Manager State of New Mexico, Akhilesh Misra - Permit Engineer State of Arizona, and Harry Chiz - Permit Engineer Maricopa County Arizona. So the information presented to the board in December was based upon conversations with this representative sample of engineering managers and permit engineers.

- It has now come to my attention that Carol Gallop and Robin Jenkins have found information which conflicts with what was presented to the board in December. The information which they have presented is a copy of the South Coast Air Quality Managements Best Available Control Technology (BACT) Guideline for Asphalt Batch Plants (attached). In review of this document, it has been found that for the South Coast District BACT of an Afterburner is technologically feasible. This feasibility is determined by an economic analysis. Upon learning this information I spoke with two engineers from the Bay Area Air Quality Management District Dharam Singh and Donald VanBuren. They both stated that BACT is reviewed on a case-by-case basis for the installation of afterburners on asphalt plants but does have to meet the Economic Analysis before being required. I have also attached a copy of a BACT clearinghouse from the State of California which shows that out of 21 asphalt plants, one (1) in the South Coast Area requires the use of an afterburner.

- Robin Jenkins also requested that a thermal catalytic oxidizer or afterburners be required to be installed on Staker Pavings Asphalt Plant. I have also reviewed the cost analysis of these control devices. I placed a call to two manufacturers of thermal catalytic oxidizers. Adwest Technologies in Anaheim California and Smith Environmental in Ontario, California. Joe Terry of Adwest stated that the job was not cost effective, maintenance intensive and that they would not make this type of installation on an asphalt plant. Sean Gribbon of Smith Environmental stated that they had installed this technology on an asphalt plant in the South Coast District and that the estimated cost for doing this was somewhere between $750,000.00 and $1,000,000.00. He also stated that the maintenance costs for this would be very high. I also spoke with Tom Jantzen of Pacific Kiln who installs afterburners on manufacturing companies. He stated that with the operating parameters of the asphalt plant it would be a cost of $75,000 to $100,000 for the installation. He also stated that the energy cost would be very intensive with this type of a unit.

- Once again it was understood that I was to research what was taking place in other states as far as permitting requirements and BACT. I did not speak with every engineer, manager, and BACT

expert in each of these states. I still conclude that the Utah Division of Air Quality has implemented the proper BACT for this industry and that upon further review of BACT options in the South Coast District of California it is not cost effective to require the use of control options introduced by Carol Gallop and Robin Jenkins.

AQMD Best Available Control Technology (BACT) Guideline

Equipment or Process: Asphalt Batch Plant
Equipment Rating: All

Revision Date: 04/05/90
Revision Number: 2

	VOC	NOx	SOx	CO	PM
BACT Technologically Feasible[1]	Afterburner (≥.3 Sec Retention Time at ≥1400°F)	Natural Gas with Flue Gas Recirculation and Low NOx Burner			
BACT Achieved in Practice or Contained in EPA Approved SIP[2]		Natural Gas with Low NOx Burner			Baghouse
BACT For Small Businesses[1,3]	Afterburner (≥0.3 Sec Retention Time at ≥1400°F)	• Natural Gas with Flue Gas Recirculation and Low NOx Burner • Natural Gas with Low NOx Burner • Natural Gas			• Baghouse • Electrostatic Precipitator
Alternate Basic Equipment or Process[1]					
BACT SCAQMD Board's Clean Fuel Policy[2]		Natural Gas or Other Equivalent Clean Fuels as Standby Fuel or Equivalent Control Technology	Natural Gas or Other Equivalent Clean Fuels as Standby Fuel or Equivalent Control Technology		Natural Gas or Other Equivalent Clean Fuels as Standby Fuel or Equivalent Control Technology

1. Requires Economic Analysis.

2. No Economic Analysis.

3. Control technologies are in descending order of efficiency. The most efficient control technology must be considered first when conducting an economic analysis.

BACT Clearinghouse Database Lookup Results

21 Match(s) for Code 10

Asphalt Batch Plant

Project Name & Description	A/C Issue Date & ARB File No.	Pollutant
Kern Asphalt Paving and Sealing 460 bhp Caterpillar model 3406C diesel-fired internal combustion engine limited to operating 8 hours/day and 1000 hours per year. (Detailed Information)	11/10/99 (A/C No.: S-3555-1-0) A350-955-00 District Contact: George Heinen San Joaquin Valley Unified APCD (559) 230-5909 george.heinen@valleyair.org	**NOx** (Detailed Control Information) No control 6.9g/bhp-hr --- **PM** (Detailed Control Information) Low-sulfur diesel fuel (0.05% fuel sulfur content) and a positive crankcase ventilation system 0.4 g/bhp-hr ---
Granite Construction - Gardner Ranch 450 tons/hr, hot mix asphalt concrete plant with dryer, baghouse and associated equipment with PUC natural gas fuel. (Detailed Information)	2/5/99 (A/C no. 9886) A390-874-99 District Contact: Michael Goldman Santa Barbara County APCD (805) 961-8821 goldmanm@sbcapcd.org	**NOx** (Detailed Control Information) Gencor model UFX-150 natural gas fired ultra-low NOx burner w/ flue gas recirculation rated at 150 MMBtu/hr 36 ppmvd @ 3% O2 --- **SOx** (Detailed Control Information) Use of PUC natural gas meeting PUC General Order 58-A specifications 80 ppmvd total sulfur 4 ppmvd hydrogen sulfide --- **PM** (Detailed Control Information) a) Baghouse for the dryer and scavenger dust system; exhaust blower rated at 69,581 dscfm. b) Enclosed drag slat conveyor to filter pack c) Water spray with chemical suppressants on cold feed system adn road surface --- **VOC/HC** (Detailed Control Information) Dryer: Good combustion pratice and

		O2 controller system; AC storage silo/drag slat conveyor and truck load out points: Blue smoke 2-stage filter pack (truck loading only if blue smoke is detected) 2.5" W.C. pressure drop across filter pack --- **CO** (Detailed Control Information) Burner design and good combustion practice 400 ppmvd @ 3% O2 ---
Sully-Miller Contracting Company Hot mix asphalt plant rated at 350 ton/hr. 85.14 MMBtu/hr LPG-fired Dryer/Coater heat input rating with natural gas backup fuel (Detailed Information)	8/20/97 (A/C no. 9740) A390-794-97 District Contact: Mike Goldman Santa Barbara County APCD (805) 961-8821 goldmanm@sbcapcd.org	**NOx** (Detailed Control Information) Hauck Ecoster, model 100; low-NOx burners 0.0575 lbm/MMBtu --- **PM** (Detailed Control Information) Standard Heaven baghouse, water spray system at all aggregated points, hoppers and sreens; blue smoke filter pack for enclosed drag slat conveyer, hot mix stroage silos, and for truck loading --- **VOC/HC** (Detailed Control Information) Burner designer, good combustion practice 0.0170 lbm/MMBtu --- **CO** (Detailed Control Information) Burner design, good combustion practice 0.412 lbm/MMBtu ---
		NOx (Detailed Control Information) Gencor Industries, Inc. low-NOx burner fired on natural gas or LPG as basic equipment 0.12 lbm/MMBtu 99.9 lbm/day --- **SOx** (Detailed Control Information) Gencor Industries, Inc. burner fired

	8/8/96 (A/C no. N-3722-1-0) A390-755-97 District Contact George Heinen San Joaquin Valley Unified APCD (559) 230-5909	on natural gas or LPG as basic equipment 0.0042 lb/MMBtu 3.5 lbm/day --- **PM** (Detailed Control Information) Baghouse 0.012 lbm/ton 54.9 lbm/day Cold bin loading and conveyor drop 0.00021 lbm/ton --- **VOC/HC** (Detailed Control Information) Gencor Industries, Inc. burner fired on natural gas or LPG as basic equipment 0.0516 lbm/MMBtu 43 lbm/day ---
Granite Construction Company 70 MMBtu/hr rotary aggregate dryer with GENCO Ultra Model II propane burner at 150 ton/hr asphalt batch plant (Detailed Information)	8/8/95 (A/C no. 7770) A390-673-96 District Contact: Eva Goodman Monterey Bay Unified APCD (408) 647-9411 egoodman@mbuapcd.org	**NOx** (Detailed Control Information) LoNOx burner 0.10 lbm/MMBtu 81 ppmvd at 3% oxygen ---
Matric Construction Company 75 ton/hr Stansteel model TM-20 portable asphalt batch plant with diesel-fired 62.0 MMBtu/hr dryer (Detailed Information)	3/15/95 (A/C no. 7079-101) A390-659-95 District Contact: Kerby Zozula Ventura County APCD (805) 645-1421 Kerby@vcapcd.org	**SOx** (Detailed Control Information) Low-sulfur diesel fuel not to exceed 0.05% sulfur content by weight No limit --- **PM** (Detailed Control Information) Primary cyclone and Mikropulse baghouse. Shrouding and water spray as necessary for material transfer points 0.04 gr/dscf ---
	3/15/95	

Matric Construction Company 1.4 MMBtu/hr Bros model HO-10 process heater fired on diesel fuel. This source will be located on an island in the Pacific Ocean. Natural gas is not available. (Detailed Information)	(A/C no. 7079-101) A310-658-95 District Contact: Kerby Zozula Ventura County APCD (805) 645-1421 Kerby@vcapcd.org	**SOx** (Detailed Control Information) Low-sulfur diesel fuel not to exceed 0.05% by weight No limit ----------
Granite Construction Company 150 MMBtu/hr BMG model 45R30P asphalt drum mixer fired on fuel oil no. 2. This is a portable unit to be operated at remote sites where electricity or natural gas may not be available. (Detailed Information)	5/14/91 (A/C no. 5841) A390-626-94 District Contact: R. Ted Hull Bay Area AQMD (415) 749-4919	**NOx** (Detailed Control Information) Low-NOx burners 145 lbm/day for plant and IC engine (Initial source test indicated emissions of 165 ppmvd at 3% oxygen from drum mixer.) ----------
Performance Information		
California Commercial Asphalt Corporation 275 ton/hr Madsen model 481 hot-mix asphalt batch plant with 75.6 MMBtu/hr Hauck SJP 360 gas-fired dryer burner model with diesel backup fuel (Detailed Information)	2/12/92 (App. no. 910794) A390-615-94 District Contact: Earnest Davis San Diego Co. APCD (619)694-3930	**NOx** (Detailed Control Information) 75.6 MMBtu/hr Hauck model no. SJP 360 with water injection 104 ppmvd at 3% oxygen ---------- **PM** (Detailed Control Information) Haven Alpha Mark III baghouse with 8650 square feet of cloth 0.03 gr/dscf ----------
Cyclean, Inc. 120 ton/hr portable asphalt batch plant for asphalt recycling (recycleaning) (Detailed Information)	10/22/90 (App. no. 236155) A35-587-93 District Contact: Bill Behjat South Coast AQMD (909) 396-2640 bbehjit@aqmd.gov	**PM** (Detailed Control Information) Baghouse 99% control efficiency ---------- **VOC/HC** (Detailed Control Information) Afterburner 90% control efficiency ----------
		NOx (Detailed Control Information) Low-NOx burner and switching from diesel fuel to LPG or natural gas combustion 0.081 lbm/MMBtu

Resource Renewal Technologies Asphalt batch plant with throughput limit of 2600 tons/day and heat input limit of 350 MMBtu/day (permit action is a transfer of location) (Detailed Information)	6/18/93 (A/C no. S-1856-1-1) A390-574-93 District Contact: Tom Goff San Joaquin Valley Unified APCD (805) 862-5200	42.6 lbm/day --- **SOx** (Detailed Control Information) Switch from diesel fuel to LPG or natural gas 0.0020 lbm/MMBtu 0.7 lbm/day --- **PM** (Detailed Control Information) Water suppression, venturi scrubber, & switch from diesel fuel to LPG or natural gas 0.0066 lbm/MMBtu 81.6 lbm/day --- **VOC/HC** (Detailed Control Information) Switch from diesel fuel to LPG or natural gas 0.0028 lbm/MMBtu 1.0 lbm/day ---
State Sand & Gravel Company, Inc. 440,000 lbm/hr natural gas-fired asphalt batch plant (Detailed Information)	12/26/90 (App. No.: 236264) A390-529-92 District Contact: Bill Behjat South Coast AQMD (909) 396-2640 bbehjat@aqmd.gov	**PM** (Detailed Control Information) Baghouse No limit ---
All American Asphalt 135 MMBtu/hr asphalt batch plant fired on propane and processing 1,200,000 lbm/hr (Detailed Information)	1/15/91 (App. no. 240010) A390-528-92 District Contact: Bill Behjat South Coast AQMD (909) 396-2640 bbehjat@aqmd.gov	**NOx** (Detailed Control Information) Low-NOx burner with exhaust-gas recirculation 30 ppmvd at 3% oxygen --- **PM** (Detailed Control Information) Baghouse No limit ---
	12/26/90	**NOx** (Detailed Control Information) Low-NOx burner

State Sand and Gravel Company, Inc. 440,000 lbm/hr gas-fired asphalt batch plant (Detailed Information)	(App. no. 236264) A390-527-92 District Contact: Bill Behjat South Coast AQMD (909) 396-2640 bbehjat@aqmd.gov	55 ppmvd at 3% oxygen --- **PM** (Detailed Control Information) Baghouse No Limit (Expected control efficiency of 99%) ---
Beazer West, Inc. 3220 ton/day asphalt batch plant fired on natural gas with a natural gas usage limit of 1,000,000 cubic ft per day (Detailed Information)	12/18/90 (App. no. 228933) A390-509-92 District Contact: Fred Minassian South Coast AQMD (909) 396-2641 fminassian@aqmd.gov	**PM** (Detailed Control Information) cyclone, baghouse, and electrostatic precipitator No limit ---
E. L. Yeager Const. 400 ton/hr asphalt batch plant (Detailed Information)	7/13/89 (App. no. 192116) A390-386-90 District Contact: Permit Services South Coast AQMD (909) 396-3385	**PM** (Detailed Control Information) Baghouse No limit (Estimated emissions of 47 lbm/day) ---
Granite Const. Co. 500 ton/hr asphalt concrete plant fired on natural gas (Detailed Information)	2/24/88 (A/C no. 87-184 and 87-185) A390-269-88 District Contact: George Heinen San Joaquin Valley Unified APCD (559) 230-5909	**PM** (Detailed Control Information) Venturi scrubber 0.04 gr/dscf 99.5% control efficiency ---
Claude C. Wood Co. Stansteel Corp. DM 836 drum-mix asphalt plant rated at 300 tons/hr and fired on fuel oil no. 2 (162 MMBtu/hr burner)	10/26/87 (A/C no. 86-197ab) A390-264-88 District Contact:	**SOx** (Detailed Control Information) 0.25% sulfur content limit in the fuel oil, SOx adsorption by alkaline aggregate, and Venturi-impactor wet scrubber 0.135 lbm/MMBtu 46% control efficiency ---

(Detailed Information)	George Heinen San Joaquin Valley Unified APCD (559) 230-5909	**PM** (Detailed Control Information) Venturi-impactor type wet scrubber 0.04 gr/dscf 99.63% control efficiency ----------
Diamond A Ranch Quarry 350 ton/hr asphaltic concrete plant (Detailed Information)	6/2/86 (A/C no. 30724) A390-144-86 District Contact: Greg Stone Bay Area AQMD (415) 771-6000	**PM** (Detailed Control Information) Venturi scrubber 0.02 gr/dscf 99.7% control ----------
Granite Const. Co. Asphalt batch plant undergoing modification to fire high sulfur (0.7%) fuel oil with 190 MMBtu/hr burner (Detailed Information)	3/11/86 (A/C no. 1008007D) A390-117-86 District Contact: Tom Goff Kern Co. APCD (now the San Joaquin Valley Unified APCD) (805) 862-5200	**SOx** (Detailed Control Information) Adjustable cone orifice wet scrubber preceded by spray chamber 50% control ----------
R.C. Collet, Inc. 325 tons per hour Standard Havens drum mix asphalt concrete plant (Detailed Information)	7/17/84 (A/C # A/C-84-07) A390-066-85 District Contact: D.W. Dixon Placer County APCD (530) 889-7130	**PM** (Detailed Control Information) Standard Havens baghouse 0.04 gr/dscf ----------

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