



State of Utah

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Department of  
Environmental Quality

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DIVISION OF AIR QUALITY  
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DAQE-MN154900001A-16

**MEMORANDUM**

To: Revolution Fuels, LLC Source File (Source ID 15490)

Through: Marty Gray, New Source Review (NSR) Section Manager, DAQ

From: Tad Anderson, Engineer, NSR Section, DAQ

Date: June 21, 2016

Subject: Response to Public Comments

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The Utah Division of Air Quality (DAQ) proposed an Approval Order (AO) for Revolution Fuels, LLC (Revolution Fuels), with a public comment period running from November 23 thru December 26, 2015. The DAQ extended the public comment period through January 11, 2016 in response to a requested hearing held in wellington on January 6, 2016. The hearing began at 6:00 P.M. on January 6, 2016 in the Wellington Elementary School, located at 250 West 200 North, Wellington, Utah.

The comments received, both written and those made orally at the hearing, are identified below along with the Division of Air Quality's (DAQ's) response to the comment. As required by R307-401-7(3), each comment received was considered and evaluated before final issuance of the AO.

**Oral Comments**

Over two hundred people attended the hearing, including DAQ staff (an attendance list is attached to this memo). Thirty-eight (38) people provided oral comment on the permit. All negative oral comments also submitted written comments which are included in the written response to comments.

# Response to Public Comments: Revolution Fuels, LLC

## Introduction

Revolution Fuels, LLC requested a permit from the Division of Air Quality (DAQ) for a new coal-to-liquid facility near Wellington, Utah. The proposed facility is in an attainment area for all criteria pollutants and is classified as a minor source. Its operations will include coal handling, coal gasification, ash handling, syngas treatment, and product upgrading. The facility will produce jet and diesel fuel, liquefied petroleum gas, and naphtha.

DAQ made the Intent to Approve (ITA) (Project Number N15490-0001) available for public comment from November 26, 2015 to December 26, 2015 (R307-401-7). On January 6, 2016, DAQ held a public hearing at Wellington Elementary School to take oral public comments on the ITA. DAQ subsequently extended the public comment period until January 10, 2016 to allow for any additional comments from the public following the hearing. DAQ properly noticed the ITA for this permit and all information related to this permit was available for review during the public comment period. DAQ received public comments at the hearing and throughout the comment period.

DAQ reviewed the comments received and made the following changes to the Approval Order (AO):

1. DAQ added a limitation on startups and shutdowns.
2. DAQ added requirements for facility-wide Leak Detection and Repair (LDAR) program.
3. DAQ removed redundant flare opacity conditions II.B.4.b and II.B.4.b.1

## General Comments

### **Comment 1: Environmental Coalition, WRA**

Environmental Coalition, Pages 6, 10, 12, 13, 17-20; WRA, Pages 1-3, 5, 8

*These commenters questioned the enforceability of various provisions in the proposed permit action with respect to PTE and BACT for various equipment and processes.*

### DAQ Response:

Because the question of enforceability of permit conditions is a recurring issue in the public comments, DAQ has opted to address the question generally before moving on to more specific applications. In this permitting action, some comments do not cite any authority for enforceability arguments.<sup>1</sup> One commenter uses federal, legal, and practical enforceability interchangeably and consistently relies on EPA's draft 1990 NSR Workshop Manual (NSR

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<sup>1</sup> See Environmental Coalition, Pages 10, 17, 20-21; Ex. A, Pages 5, 7; Ex. C.

Manual) as authority, occasionally referring to it as a requirement.<sup>2</sup> Before addressing enforceability generally, DAQ first addresses the status of the NSR Manual.

EPA prepared the NSR Manual 26 years ago. The manual is a draft and has never been subject to notice-and-comment rulemaking procedures. Consequently, the NSR Manual is not a binding regulation on any air pollution regulatory authority, including EPA. As the NSR Manual itself states, “[the NSR Manual] is not intended to be an official statement of policy and standards and does not establish binding regulatory requirements; such requirements are contained in the regulations and approved state implementation plans.” NSR Manual at 1.

The NSR Manual has never been updated and in some cases is either internally inconsistent or is inconsistent with post-1990 EPA policy and judicial decisions. The best that can be said about the NSR Manual is that it is an informal guidance document representing the accumulation of EPA guidance up to 1990. The EPA has even acknowledged that “[t]his document [NSR Manual] may be of assistance in applying the New Source Review (NSR) air permitting regulations including the Prevention of Significant Deterioration (PSD) requirements. This document is part of the NSR Policy and Guidance Database.” EPA, *New Source Review Workshop Manual*, (October 1990), available at <https://www.epa.gov/sites/production/files/2015-07/documents/1990wman.pdf>. The manual can provide general guidance when no more specific or recent guidance is available, but does not represent regulatory requirements for NSR permitting. Accordingly, DAQ is free to consult the NSR Manual as guidance, but is not required to “comply” with the NSR Manual as it would have to comply with a statute or regulation.

Finally, the NSR Manual provides guidance on major source as opposed to minor source permitting. Revolution Fuels’ proposed project is for a minor source, and accordingly has been reviewed under DAQ’s minor source permitting program. EPA has exercised far less oversight over minor source permitting programs and has largely left it to the states to determine what requirements are necessary for the permitting of minor sources and minor modifications of existing sources. *See* 76 Fed. Reg. 38,748, 38,752-51 (July 1, 2011) (“These Federal requirements for minor NSR programs are considerably less prescribed than those for major sources and as a result there is a larger variation of requirements in the state minor NSR programs.”). Consequently, “EPA’s NSR Manual . . . is not binding precedent in a permit review adjudicative proceedings reviewing UDAQ’s decision to issue an AO under Utah’s minor source permitting program.”<sup>3</sup> DAQ evaluates and respond to all of the enforceability comments bearing in mind the non-binding nature of the NSR Manual.

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<sup>2</sup> *See* WRA, Pages 2-3, 6.

<sup>3</sup> Findings of Fact, Conclusions of Law, and Proposed Dispositive Action, In re: Intent to Approve: Waxy Crude Processing Project: N10335-0058 (UDAQEIN103350058-12) and Gasoline Loading Limit at TLR: N10335-059 (UDAQEIN103350059-12) Tesoro Refining and Marketing Company (Tesoro Order) at 33, n.18 (Sept. 9, 2014), available at <http://www.deq.utah.gov/Admin/proceedings/docs/2015/06Jun/TesoroALJRecommendedOrder.pdf>, adopted by Order Adopting Findings of Fact, Conclusions of Law, and Proposed Dispositive

DAQ now discusses the definitions of enforceability as used by the commenters. In this permitting action, one commenter uses the terms “federally enforceable,” “practically enforceable,” and “legally enforceable” to describe requirements for limits on pollutant-emitting activities at the source. The status and meaning of these terms (and how they may apply to state permitting actions) requires some explanation. However, it must be noted, that even though EPA’s interpretation of these terms may be helpful guidance, DAQ retains discretion because this permitting action is for a minor source.

In 2002, EPA defined enforceability in the context of promulgating a final rule “Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Baseline Emissions Determination, Actual-to-Future-Actual Methodology, Plantwide Applicability Limitations, Clean Units, Pollution Control Projects” (2002 Rule). *See* 67 Fed. Reg. 80,186 (Dec. 31, 2002). EPA explained that a requirement is “legally enforceable if some authority has the right to enforce the restriction.” *Id.* at 80,190 (internal quotation marks omitted). Practical enforceability “will be achieved if a requirement is both legally and practically enforceable.” *Id.* at 80,191. EPA defined “practical enforceability” for a source-specific permit as permit provisions that specify:

- (1) A technically-accurate limitation and the portions of the source subject to the limitation;
- (2) the time period for the limitation (hourly, daily, monthly, and annual limits such as rolling annual limits); and
- (3) the method to determine compliance, including appropriate monitoring, recordkeeping, and reporting.

*Id.* at 80,190-91.

Finally, “federal enforceability means that not only is a requirement practically enforceable . . . but in addition, EPA must have a direct right to enforce restrictions and limitations imposed on a source . . . .” *Id.* at 80,191 (quoting “Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act,” signed by John Seitz and Robert Van Heuvelen, Jan. 25, 1995, at 2–3)<sup>4</sup> (January 25, 1995 Policy) (internal quotation marks omitted). In Attachment 3<sup>5</sup> to the January 25, 1995 Policy, EPA claimed that it has this

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Action (Nov. 17, 2014), available at <http://www.deq.utah.gov/Admin/proceedings/docs/2015/06Jun/TesoroFinalExecutiveDirectorOrder.pdf>

<sup>4</sup> Note that this document post-dates the 1990 NSR Manual and is useful in understanding EPA’s view of enforceability.

<sup>5</sup> Attachment 3 is a letter dated November 2, 1994 from John S. Seitz, Director of EPA’s Office of Air Quality Planning and Standards to Jason Grumet, Executive Director of Northeast States for Coordinated Air Use Management.

enforcement right for minor sources as well as major sources. Specifically, John S. Seitz, Director of EPA's Office of Air Quality Planning and Standards, explained that:

EPA's position is that minor NSR permits issued under programs that have already been approved into the State implementation plan (SIP) are federally enforceable. Thus, EPA allows the use of federally-enforceable minor NSR permits to limit a source's potential to emit provided that the scope of a State's program allows for this and that the minor NSR permits are in fact enforceable as a practical matter.

January 25, 1995 Policy, Attachment 3 at 1; *see also* "Release of Interim Policy on Federal Enforceability of Limitations on Potential to Emit" at 5 (Interim Policy) (Jan 22, 1996) ("Every SIP contains a minor NSR program that applies generally to new or modified sources of air pollutants, without regard to whether those sources are 'major.' Permits under such programs are, like all other SIP measures, federally enforceable."). Thus, in EPA's view, because Utah has a SIP-approved minor source NSR program, any limits imposed on the source through the minor NSR permitting are federally enforceable. Specifically, EPA can exercise its enforceability right to address a state's failure to comply with new source requirements for permits issued under the state minor NSR program in three different ways: (1) by issuing an order prohibiting construction or modification, *see* 42 U.S.C. § 7413(a)(5)(A); (2) by issuing administrative penalty order, *see id.* § 7413(a)(5)(B); and (3) by bringing a civil action, *see id.* § 7413(a)(5)(C). *See also Alaska Dep't of Env'tl. Conservation v. EPA*, 540 U.S. 461, 492, n.15 (2004).

EPA issued both the January 25, 1995 Policy and the Interim Policy in response to judicial decisions<sup>6</sup> that invalidated EPA's definition of federally enforceable controls, operational changes, or limitations for purposes of calculating potential to emit (PTE). The present definition of "federally enforceable" includes both state and local ability to enforce. *See* Interim Policy at 3 (footnote omitted) (" . . . the term 'federally enforceable' should now be read to mean federally enforceable or legally and practicably enforceable by a state or local air pollution control agency."). This definition was more recently discussed in *United States v. Questar Gas Mgmt. Co.*, 2011 WL 1793172, No. 2:08-CV-167 TS (D. Utah May 11, 2011) (unpublished). The *Questar* opinion acknowledged the holdings of *National Mining* and *Chemical Manufacturers* and the subsequent interpretation of "federally enforceable" in the Interim Policy. *See id.*, at \*2. The court noted that the Interim Policy "remains in effect." *Id.* (footnote omitted). Therefore, under the current definition of federal enforceability as it applies to controls considered for purposes of determining a facility's PTE, all applicable state and local controls must also be considered.

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<sup>6</sup> In *National Mining Ass'n. v. EPA*, 59 F.3d 1351, 1351 (D.C. Cir. 1995), the court held that EPA "exceeded its authority by considering only federally enforceable emission controls in determining plant site's potential to emit . . ." In a subsequent decision on similar challenge, the court vacated EPA's regulations defining potential to emit "to exclude controls and limitations on a source's maximum emissions capacity unless those controls are federally enforceable" and remanded back to EPA for reconsideration in light of the *National Mining* decision. *Chemical Mfrs. Ass'n. v. EPA*, 70 F.3d 637, at \*1 (D.C. Cir. 1995) (unpublished).

Importantly, the question of federal enforceability, as raised in the comments on this proposed permit, only raises the question of whether the federal government, in its own discretion, may enforce the limits in the proposed permit. However, DAQ does not concede that the foregoing authorities addressing federal enforceability govern DAQ's authority either to issue permits under its minor source NSR program or take appropriate enforcement action for violations of the permits it issues. For purposes of responding to the comments raised in this permitting action, DAQ simply notes that the limitations imposed by this proposed minor source permitting action are consistent with, but not necessarily governed by, the January 25, 1995 Policy, the Interim Policy, the cases addressed above, and the factors outlined by EPA in the 2002 Rule. DAQ will address each individual comment where the question of enforceability arises, whether it be in the context of PTE, BACT, or otherwise.

### **Comment 2: Environmental Coalition**

Page 1, ¶ 3

*“The Director fails to demonstrate that the project will not interfere with air quality standards because the impacts of PM2.5 emissions from the project are significantly underestimated.”*

#### DAQ Response:

All PM2.5 emission estimates were calculated for normal source operations. The PM10/PM2.5 emissions estimates were used in an emissions impact analysis as per R307-410-4 to determine if the increase would affect the 24-hour and annual NAAQS. The emissions impact analysis demonstrated that the PM10/PM2.5 emissions do not result in a violation of either the 24-hour or annual NAAQS. The commenter compares this minor source with the emissions from major sources located in Wyoming and Texas, which are at a different scale. Major sources are subject to more requirements/regulations to deal with greater emissions.

No changes were made to the AO as a result of this comment.

### **Comment 3: Environmental Coalition**

Page 2, ¶ 5 (footnotes omitted)

*“Additionally, the technical feasibility and economic viability of this project is highly suspect. In the last decade we are aware of approximately 34 proposed coal-to-liquid or coal-to-gas projects in the United States. At least 25 of those proposals have officially announced that they will no longer pursue the project. Of those remaining, none that we are aware of have any plans to begin construction.”*

#### DAQ Response:

This comment is noted but no changes are made to the AO because DAQ does not address the economic viability of a particular project. DAQ factors in economic considerations only during BACT determination. See Utah Admin. Code R307-401-2 (defining best available control technology).

As to the technical feasibility, coal-to-liquid fuel technology has been in existence since the 1920s. The process, known as Fischer-Tropsch (FT) Synthesis, uses gasification to convert carbon materials to carbon monoxide and a hydrogen-rich synthetic gas. This synthesis gas, or

syngas, is fed into an FT reactor that condenses the gas over a catalyst and converts it to wax and liquid products that can be refined into a variety of synthetic fuels.

Under the proposed permit, coal will be delivered to the facility and stored, then transferred to a crusher by conveyor. The crushed coal will be sent to a pyrolysis and gasification system. Carbon material that is not gasified will be removed and handled in the ash handling system. Syngas produced from the gasification system will be scrubbed to remove contaminants, pressurized, and sent for further processing to remove additional contaminants such as carbon dioxide and sulfur. After passing through the FT reactor, the wax and hydrocarbon condensate will be upgraded to transportation fuels.

**Comment 4: UPHE**

Page 1, ¶ 2

*“Although the proposed Coal to Liquids (CTL) facility would be small-scale relative to a typical coal-fired power, its size relative to other sources of pollution shouldn’t be the deciding factor in the Division of Air Quality’s evaluation of the permit request. The deciding factor should be whether it takes us as a State in the right direction toward improved public health and sustainable economic growth, or whether it takes us in the opposite direction.”*

DAQ Response:

DAQ disagrees that the deciding factor in its evaluation of the Revolutions Fuels’ permit was the small scale of this project relative to a typical coal-fired power plant. DAQ has not considered this factor in its evaluation because it must make its decision based on its regulations in Utah Administrative Code R307-401. With respect to the scale, DAQ has determined the scale or size of the project based on its potential to emit, which is not compared to any other facility’s potential to emit, but is used to determine whether the proposed project will be classified as major or minor. The emissions from this source are substantially different from the emissions produced by a source that burns coal; and the emissions that will result from this process (pyrolysis of coal) are identified in the NOI and the draft permit. The proposed facility will be located in an attainment area for all criteria pollutants and is classified as a minor Title V source based on the calculated potential to emit. *See* UDAQ Source Plan Review (Source Plan Review), Project Number N154900001 at 2. DAQ also evaluated this project under the EPA health-based NAAQs, applying the air quality rules and regulations established to protect those standards. *See also* response to Comment 24.

No changes were made to the AO as a result of this comment.

**Comment 5: UPHE**

Page 2, ¶ 1

*“In numerous encounters over the last several years with various DAQ staff we have heard rationalizations offered that DAQ cannot turn down permits that satisfy the rules, and often specifically because of the threat lawsuits by an applicant. Invariably however, the rules DAQ uses to evaluate permits can be interpreted in multiple ways, and with varying degrees of adherence to the ‘letter of the law.’ The end result is that even the DAQ’s rules allow a great deal of flexibility in evaluating the suitability and safety of permits, especially new permits. It is UPHE’s experience that DAQ almost invariably interprets those rules with a heavy bias towards*

*the applicant. DAQ's constitutional mandate is to protect public health, but it functions as though its first priority is to issue industry permits, leaving public health protection a distant second priority. This misplaced hierarchy of priorities is fully manifest in the Revolution Fuels ITA."*

DAQ Response:

No changes were made to the AO as a result of this comment because the comment does not address any term or condition of the draft permit. It also does not offer any example in the current proposed permitting action of DAQ acting "as though its first priority is to issue industry permits, leaving public health protection a distant second priority," despite its claim that "[t]his misplaced hierarchy of priorities is fully manifest in the Revolution Fuels ITA." Instead of providing any examples that might aid DAQ in understanding the comment, the comment is a general statement or complaint about the commenter's perception of how DAQ fulfills its regulatory responsibilities.

Commenters claim that DAQ interprets the rules in favor of issuing permits, although this is a misperception of DAQ's role. The Utah Air Quality Board has promulgated a set of rules that govern the review of permit applications and the issuance of permits. EPA has approved those rules as consistent with the federal Clean Air Act, and therefore protective of health and the environment. Thus, if a permit applicant shows that it can meet the requirements of those rules, the resulting permit is deemed protective of public health.

In this case, Revolution Fuels has requested a permit. As an applicant, Revolution Fuels must submit certain information in support of the application. *See* Utah Admin. Code R307-401-5. DAQ's role is to review that information and if the application meets the requirements of R307-401-8, then DAQ must issue the permit. Commenters seem to assume that there is some level of policy authority to deny permit applications based on factors other than those required by the Utah Air Rules. Although the Utah Legislature has granted DAQ "substantial discretion to interpret its governing statutes and rules,"<sup>7</sup> if the applicant cannot meet the requirements of the rules, DAQ will not issue the permit. If DAQ will not issue the permit due to deficiencies in the application, the applicant can either drop the project or resolve the deficiencies and reapply to DAQ. In the latter circumstance, simply interpreting the rules in favor of "public health protection" (despite the fact that the commenter provides no clear idea of what that means within the context of the rules DAQ must follow) will not necessarily result in fewer permits being issued, as the applicant can simply reapply. If the commenter considers the existing law to be insufficiently protective of public health, it must seek amendments through legislative or rulemaking channels.

In the absence of any legislative or regulatory directive forbidding certain types of projects, DAQ must review all permit applications it receives, and review them consistently. The fact that DAQ has discretion does not permit it to exercise that discretion arbitrarily, and the commenter provides no evidence of instances where "DAQ almost invariably interprets those rules with a

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<sup>7</sup> Utah Code Ann. § 19-1-301.5(14)(c)(i).



heavy bias towards the applicant.” In any event, this discretion is subject to administrative and judicial review.<sup>8</sup>

**Comment 6a: UPHE**

Page 2, ¶ 2

*“The question that the Division of Environmental Quality should ask isn’t whether this project will harm our environment and the health of the public a little or a lot, but whether it should be approved at all when there are other means of producing the same products at a far smaller overall cost to our State.”*

**Comment 6b: UPHE**

Page 3, ¶ 4

*“There is a wide array of alternative technologies that can be used to produce liquid petroleum. Of those technologies, CTL is the alternative that incurs the greatest overall cost to society. This is because only CTL relies on the burning coal. Of all of the alternative ways to produce liquid petroleum, on a BTU basis, burning coal produces the greatest variety and amount of pollutants that are harmful to human health.”*

**Comment 6c: UPHE**

Page 6, ¶ 4 (footnote omitted); Page 7, ¶ 1

*“The updated model’s estimate is that a 30% reduction in CO2 emissions from the 2012 baseline will save from \$28 to \$63 billion in health related costs in 2030, due to reduced emissions of ozone precursors and fine particulates alone. When environmental benefits were added to these health benefits, the savings ranged from \$64 to \$99 billion in 2030. The updated EPA model results also show that the kind of infrastructure investments needed to reduce CO2 emissions by 30% would, at the same time, reduce the annual costs to electric power consumers by between \$6.4 and \$9.4 billion in the year 2030. This effect is attributed primarily to the implementation of energy efficiency incentive programs. That translates to an expected reduction in consumer’s electric bills of 3% in 2030. In other words, there is no cost/benefit ratio to calculate. The investments that would reduce CO2 emissions by 30% by 2030 have only benefits. The direct benefit to society would be a 3% reduction in the price of electric power, while the indirect benefit to public health would be from \$64 to 99\$ billion. Increasing carbon emissions, as the Revolution CTL project would do, would have the opposite effect. It would produce a net cost to society when its effects are comprehensively accounted for. If Revolution Fuel’s proposed*

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<sup>8</sup> See Utah Code Ann. §§ 19-1-301.5 (permit review adjudicative proceedings); 78A-4-103(2)(a)(i)(B); Tesoro Order at 7; Findings of Fact, Conclusions of Law, and Recommended Order on the Merits, In the Matter of: Approval Order No. DAQE-AN101230041-13, Holly Refining & Marketing Company — Woods Cross, LLC Heavy Crude Processing Project, Project No. N10123-0041 (Holly Order) at 11 (March 11, 2015), available at <http://www.deq.utah.gov/Admin/proceedings/docs/2015/06Jun/HollyALJRecommendedOrder.pdf>, adopted by Order Adopting Findings of Fact, Conclusions of Law, and Recommended Order on the Merits (March 31, 2015), available at: <http://www.deq.utah.gov/Admin/proceedings/docs/2015/06Jun/HollyFinalExecutiveDirectorOrder.pdf>.

*project makes a profit, it will only be for its investors. It will be a net economic liability for the public as a whole when the social costs of carbon are included. Stated another way, approving this permit allows Revolution investors to exploit the Utah public at large.”*

**Comment 6d: UPHE**

Pages 7-10

The commenter discusses dangers of global warming and a necessity to shift to renewables. The commenter argues that renewables will result in greater economic growth and enormous benefits to society in terms of health and environmental protection.

DAQ Response:

By law, DAQ must ensure that the project meets all of the applicable requirements for pollution prevention and control. None of the laws and regulations give DAQ authority to make what is essentially a policy decision to stifle the projects based on whether there are better means of producing the same product at lower overall cost.

No changes were made to the AO as a result of this comment.

**Comment 7: UPHE**

Page 3, ¶ 2

*“ . . . the DAQ permit will allow Revolution to spew every year nearly 9 tons of mercury, lead, arsenic and acid gases in the air and environment over a residential subdivision that is planned only 300 yards away, the Wellington City elementary school, which is only one mile away, and Price, which is only 5 miles away. For reasons explained below, adding this quantity of toxic aerosols to the local air shed can be expected to further impair the cognitive abilities of children who grow up within a few miles of the proposed facility.”*

DAQ Response:

All hazardous air pollutants (HAPs) are specified in the Notice of Intent (NOI) on pages 3-12 and in the Source Plan Review on pages 6-7. There will be no mercury, arsenic or acid gases emitted, as this process is not a coal-fired power plant and does not burn coal. Although burning coal can emit mercury, lead, arsenic and acid gases, the process proposed for this project will emit hexane (4.93 tons per year), toluene (1.16 tons per year), xylenes (2.03 tons per year), lead (0.0008 tons per year) and 0.79 tons per year of 8 different combined HAPs (none of these 8 different HAPs are mercury, arsenic or acid gases). See Source Plan Review at 3. All HAPs for this process have been reviewed as per R307-410-5 and none of the HAPs required additional emissions impact analysis. The commenter provides no analysis or facts showing that the proposed project will exceed these applicable levels.

No changes were made to the AO as a result of this comment.

**Comment 8a: UPHE**

Page 21, ¶ 2

*“In view of this risk, one would think the Division of Air Quality would be keenly interested in quantifying the amount of mercury, lead, and similar heavy metals that the Revolution facility expects to emit. Examining the Revolution Project Folder on the DAQ website, however, one*

*finds that there are no attempts whatever to estimate the amount of heavy metals that the Revolution facility is likely to produce. Such knowledge is essential if the DAQ is to validly evaluate the public health consequences of approving this permit.”*

**Comment 8b: UPHE**

Page 22, ¶ 3; Page 23, ¶ 1

*“The proxy baseline that the DAQ uses (the readings taken in Washington County) don’t include heavy metal contamination. Nevertheless, if these emissions are not effectively controlled, they would constitute major increases in neurotoxin exposure to the children growing up in these neighborhoods, and a major increase in their risk of cognitive impairment. It is imperative that DAQ find out, and disclose to the residents of Wellington City and Price, what additional amounts of these neurotoxins are intended to be emitted by the Revolution facility before it approves the permit.”*

DAQ Response:

DAQ has reviewed all criteria pollutants and HAPs identified by the source (as required by Utah Admin. Code R307-401-5(2)(b)) that would be emitted into the atmosphere. Specifically, lead emissions (0.0008 tons per year) have been quantified in the NOI and evaluated. *See* NOI, Appendix C-Emissions Calculations and MSDS at 2. No other heavy metals listed by the commenter fall under the definition of a criteria pollutant or have been identified by the source as a HAP it will be emitting. The commenter compares heavy metals produced from a coal-fired power plant to this proposed facility, which burns natural/synthetic gas. There is no correlation in emission between a coal fired power plant and a coal-to-liquids facility burning natural/synthetic gas in the reaction chamber.

No changes were made to the AO as a result of this comment.

**Comment 9a: Environmental Coalition**

Pages 3-4

The commenter discusses health impacts of pollution, specifically particulates, nitrogen oxides, and sulphur dioxide.

**Comment 9b: UPHE**

Pages 5, 12-24

The commenter discusses health impacts of pollution, specifically particulates, mercury, lead, and carbon monoxide.

DAQ Response:

DAQ evaluates and reviews permit applications against current air pollution standards. These standards, established by EPA, are health-based standards. *See* 42 U.S.C. §§ 7409, 7407; 40 C.F.R. §§ 50.4-50.18. Any concerns about the adequacy of those standards should be directed to EPA. DAQ’s review has determined that the project, as proposed, meets all of the applicable requirements. DAQ notes the comments but makes no changes to the AO, as the comments raise no technical or procedural issues.

**Comment 10: UPHE**

Page 11, ¶ 1

*“Revolution’s CTL process is undisclosed, but there no reason to think that it will not produce the same list of toxins that burning coal to produce electricity produces.”*

DAQ Response:

The source presented all of its proposed operations and processes in the NOI. DAQ described them in the Source Plan Review. The only proprietary information that the source did not disclose was the water treatment operation, which has no bearing on the proposed project.

The emissions from this source are substantially different from the coal-burning source emissions. The source identified the emissions that will result from this process (pyrolysis of coal) in the NOI and DAQ included them in the draft permit. *See also* response to Comments 14a-b.

Finally, the comment is a generalized statement and does not address any term or condition of the ITA. No changes were made to the AO as a result of this comment.

**Comment 11: UPHE**

Page 4, ¶ 1

*“Revolution’s added toxic emissions, however, can be expected to significantly degrade the quality of the air over the adjacent communities of Wellington City and Price.”*

DAQ Response:

*See* response to Comments 7 and 9a-b. All source emissions were analyzed as per R307-410 by evaluating the emissions impact to ensure that the source will not interfere with the attainment or maintenance of any NAAQS. The rule also establishes the procedures and requirements for evaluating the emissions impact of HAPs. The source’s emission levels exceed modeling thresholds for PM10, which required modeling by the source to be submitted to DAQ for review. The source modeling showed minimal impact on the PM10 24-hour NAAQS standard. NO2 modeling was conducted by DAQ to determine if there is an impact on the NO2 1-hour standard. The modeling demonstrated no impact on the NO2 1-hour standard. *See* Source Plan Review, Modeling Summary at 11.

No changes were made to the AO as a result of this comment.

**Comment 12: UPHE**

Page 5, ¶ 3

*“It would also harm the health of the residents of central Utah directly through increased contamination of nearby ground and surface waters with toxic heavy metals, and increased contamination of its air with carbon monoxide, acid gases, particulates, and toxic heavy metal aerosols.”*

DAQ Response:

As a general matter, DAQ has no regulatory authority to review potential ground water contamination or waste disposal. DAQ has reviewed all criteria pollutants and HAPs identified

by the source that could be emitted into the atmosphere. All air pollutants have been evaluated as discussed in the responses to Comments 7, 9a, and 9b. The commenter does not identify any criteria pollutant or HAP that DAQ failed to consider.

No changes were made to the AO as a result of this comment.

**Comment 13: Individual Commenter Richard Kanner**

*“What is DEQ and DAQ doing to regulate the approximately 57,000 tons of coal ash per year from this project once it leaves the site? Where will it be stored and what will be its final destination? And who is responsible for monitoring this final destination in order to protect public health, area surface and groundwater sources, or impacts to local environments?”*

*The NOI makes no mention of how much water the project will use, where the water will come from, and also what happens to wastewater from the project in order to protect surface water and groundwater. This information should be determined before the project is permitted.”*

DAQ Response:

DAQ has regulatory authority to issue air quality permit only. The air quality rules (Utah Admin. Code R307-101 through R307-842) do not grant the DAQ authority over other regulatory programs, such as waste management or water use. The coal ash from the reaction chamber will be removed using a high-powered magnetic separator, vortex-like coils, vibrating conveyor, and cyclones. Once the ash is removed from the gas stream, it will be transported by enclosed conveyors to the enclosed silo both controlled by a baghouse. The coal ash will be transferred from the silo through an enclosed auger in to pneumatic trucks to be hauled offsite. The ash removal baghouse controlling the enclosed conveyors and silo has a 10% opacity limit in condition II.B.1.b.D and condition II.B.3.a of the proposed permit, requiring the source to route emissions from the conveyor to the baghouse.

No changes were made to the AO as a result of this comment.

**Comment 14a: UPHE**

Pages 4 to 24

The commenter discusses emissions associated with burning coal in a coal-fired power plant and the health effects associated with this type of operation.

**Comment 14b: Individual Commenter Cindy King**

Page 2, ¶ 1

*“There is obfuscation and blatant disregard of the fact the feedstock, that being coal would have heavy metals. Ergo there is no analysis of emissions of heavy metals; how they are being captured in process and the amount of heavy metals being released.”*

DAQ Response:

As explained in Section 2 of the NOI and pages 2-5 of the Source Plan Review, the source is proposing to construct and operate a coal-to-liquids facility. This facility will use natural gas and cleaned syngas from the process to operate the reaction chamber and pyrolysis. Coal in this operation is pulverized and introduced into an air stream entering the pyrolysis chamber and then

the reaction chamber. The coal is never contacted by a flame in this process. The coal feed stock is heated and injected with steam to make syngas. This process does not burn coal, so the emissions profile associated with a coal-fired power plant should not be assumed for this process. The emissions profile is specified in the NOI on pages 3-11 and 3-12, and in Appendix C on page 2. The emissions profile is also listed in the Source Plan Review in the abstract on page 2 and in summary of emission totals on pages 6 and 7.

Finally, the comment does not address any term or condition of the ITA. No changes were made to the AO as a result of this comment.

**Comment 15: Individual Commenter Dennis Willis**

Page 3, ¶ 5

*“How will regional haze be impacted? How does this fit in with the Regional Haze plan for reducing air pollution impacts to National Parks? Has that been evaluated? Since there will be NOx and small particulates generated by the facility, apparently it is certain that there will be impacts to regional haze and that should be strictly evaluated.”*

DAQ response:

The program for controlling regional haze (found in 40 CFR § 51 Subpart P) is separate from the air quality permitting program. The permitting regulations do not contain a requirement for a minor source to consider regional haze in the permitting process, *see* 40 CFR § 52.21, and the comment points to no such requirement. The Utah air quality rules, specifically R307-406-2(1), only require a visibility analysis for a major source or a major modification to a major source (“major source” and “major modification” are defined in R307-101). Revolution Fuels is a minor source and there are no requirements to evaluate visibility for a minor source.

No changes were made to the AO as a result of this comment.

**Comment 16: Individual Commenter Dennis Willis**

Page 4, ¶ 3

*“The permit seems to rely on self-monitoring by the applicant. We find this approach unacceptable. It is the responsibility of DEQ to monitor or assure monitoring is done. The applicant should pay DEQ to conduct the monitoring or provide the funds for DEQ to hire an independent monitoring firm.”*

DAQ Response:

It is unclear if the commenter is addressing permit monitoring or air monitoring. If the commenter is addressing air shed monitoring, please *see* response the Comments 25a and 25b. If the commenter is addressing permit monitoring, DAQ provides the following response. DAQ does not have to conduct independent permit monitoring or hire an independent firm because its regulations require and allow for significant regulatory oversight.

First, DAQ can verify and reproduce data as allowed by the permit and emission testing rules found in R307-165. Second, the DAQ requires emissions testing recordkeeping in the source test protocol. Finally, DAQ compliance inspectors observe monitoring operations and have first-hand knowledge of the data collection procedures. The monitoring data collected by the source

must meet specific data quality requirements. When the data meets these requirements it can be used by DAQ to determine if the source is meeting permitted emission limits. If the data does not meet the requirements of the permit (II.B.1.c (F) & (G), II.B.1.d, II.B.1.f, and II.B.5) and the federal rules (40 C.F.R. §§ 60.48c, 60.46c, 60.47c, 60.254, 60.4214, and 63.6625), DAQ can undertake enforcement measures to revise the permit to require additional monitoring.

No changes were made to the AO as a result of this comment.

**Comment 17: WRA**

Page 7, ¶ 3 (footnote omitted)

*“Because the proposed AO does not include emission limits for NOx and CO which satisfy the definition of emission limits given in 42 U.S.C. § 7602(k), and because any such emission limits are not federally or practically enforceable for the reasons stated above, no emission limits for NOx and CO may be used in calculating the project’s potential to emit these pollutants. 40 C.F.R. § 52.21(b)(4); EPA NSR Workshop Manual II.B.2 at A.9 (“Remember, if the permit or SIP requirements, conditions or limits on a source are not federally enforceable (which includes enforceable as a practical matter), potential to emit is based on full capacity and year-round operation.”). The project’s potential to emit for NOx as calculated absent any emission limitations is 93.4 tpy. Revolution Fuels, Coal to Liquid Facility, Notice of Intent at 11. This would bring the project close to the major source threshold for NOx of 100 tpy. Similarly, the project’s potential to emit for CO as calculated absent any emission limitations is 95 tpy. Revolution Fuels, Coal to Liquid Facility, Notice of Intent at 11. This would bring the project close to the major source threshold for CO of 100 tpy.”*

DAQ Response:

This comment addresses enforceability with respect to emissions of NOx and CO, claiming that the proposed permit “does not include emission limits for NOx and CO which satisfy the definition of emission limits given in 42 U.S.C. § 7602(k).” The comment earlier argues that “such emission limits are not federally or practically enforceable . . . [and] no emission limits for NOx and CO may be used in calculating the project’s potential to emit these pollutants.” As authority for these statements, the commenter relies on three sources: 40 C.F.R. § 52.21(b)(4), the NSR Manual, and 42 U.S.C. § 7602(k).

40 C.F.R. § 52.21(b)(4) has no application here, nor does the comment attempt to explain its relevance. The regulation itself states in subsection (a)(1) that it applies to “any State implementation plan which has been disapproved with respect to prevention of significant deterioration of air quality in any portion of any State where the existing air quality is better than the national ambient air quality standards.” PSD applies to major sources, and the proposed permit is for a minor source. Moreover, even if the proposed project were a major source, 40 C.F.R. § 52.21 would still not apply because Utah’s SIP for PSD has been approved.

As explained in response to Comment 1, the NSR Manual is a non-binding guidance. Without conceding that the EPA’s 2002 Rule is binding on this minor NSR permit, DAQ notes that the imposed limitations in this permitting action are consistent with the 2002 Rule.

Section 7602(k) defines “emission limitation” and “emission standard” as:

a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under this chapter.

42 U.S.C. § 7602(k).

Any emission limitation that satisfies the factors in EPA’s 2002 Rule should also be sufficient to satisfy the requirements of 42 U.S.C. § 7602(k). Moreover, Section 7602(k) includes “design, equipment, work practice or operational standard promulgated under this chapter.” This indicates that an emission limitation or standard is not always a numeric limit.

For this proposed permit, the units emitting NOx and CO are as follows:

SOURCE	POLLUTANT	LIMIT
Pyrolysis and Gasification Burners	NOx CO	<b>NOx:</b> SCR and emission limit of 3.67 lb/hr. (conditions II.A.2 and II.B.2.a) <b>CO:</b> emission limit of 14.68 lb/hr (condition II.B.2.a)
Auxiliary Boiler	NOx CO	<b>NOx:</b> low-NOx burners (condition II.A.10); limited to 500 hours of operation (condition II.B.1.f.); 10% opacity limitation for all natural gas/syngas operated equipment (condition II.B.1.b(E)) . <b>CO:</b> See response to Comment 51
Natural Gas Fired Process Heaters	NOx CO	<b>NOx:</b> process heaters limited to be operated on natural gas/syngas (condition II.B.1.e.) and 10% opacity limitation for all natural gas/syngas operated equipment (condition II.B.1.b(E)) . <b>CO:</b> See response to Comment 53 for BACT
Internal Combustion Engines	NOx	<b>NOx:</b> limited in condition II.B.1.d to 500 hours of non-emergency use for testing and maintenance. The limited use of the diesel emergency engine in condition limits the emissions of NOx and PM. <b>CO:</b> See response to Comment 54 for



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Because this comment speaks to emissions of NOx and CO generally, and not on a unit-by-unit basis, the comment does not tie its complaints about NOx and CO emissions to the terms of the proposed permit, or explain why, based on the sources it cites, the provisions of the permit identified in the chart above are unenforceable or do not ensure continuous compliance either according to the sources it cites.

With respect to PTE, a source is major when the uncontrolled PTE for the entire source is below 100 tons per year (tpy) for any criteria pollutant. In this case, even if PTE were calculated without taking into account reductions from the pollution control device, this proposed source would not meet the definition of a major source under R307-101-2. See NOI, Table 3-1: Project Potential to Emit at 3-11. The commenter does not address this table.

No changes were made to the AO as a result of this comment.

**Comment 18: WRA**

Page 8, ¶ 3

*“We also ask that, once the proposed AO is revised to address these comments and the Sierra Club comments, that the public be given another opportunity to provide input on the permit.”*

DAQ Response:

As explained in the Introduction, as required by R307-401-7, DAQ made ITA available for public comment from November 26, 2015 to December 26, 2015. On January 6, 2016, DAQ held a public hearing at Wellington Elementary School to take oral public comments on the ITA. DAQ subsequently extended the public comment period until January 10, 2016 to allow for any additional comments from the public following the hearing.

Additionally, DAQ regulations governing permits for new and modified sources vest the agency with discretion to modify a proposed approval order in response to public comment. This authority is found in R307-401-7 of the Utah Administrative Code, which directs DAQ “to consider all comments received during the public comment period and at the public hearing and, if appropriate, . . . make changes to the proposal in response to comments before issuing an approval order or disapproval order.”

This regulation only refers to one comment period, not more, and expressly directs DAQ, where appropriate, to modify a proposed permit in response to public comment. However, this regulation does not require that DAQ re-open the proposed permit to additional public comment when such changes are made in response to public comment, or if the agency adds to the record in the course of addressing public comments. Applicable law contemplates that ITA may be revised, and that additional information may be requested from the source and included in the record based on public comments.

Because DAQ cannot know in advance what public comments will say, one of the purposes of a comment period is to bring new material or issues to the agency’s attention. Consequently, it

may be impossible for the DAQ to consider and address the comments without making use of new material, either obtained on its own or from the source, or by revising the ITA. If all new material or revisions triggered another public comment period, “the agency would be put to the unacceptable choice of either providing an inadequate response or embarking on [an] . . . endless cycle of reproposals . . .” 45 Fed. Reg. 33290, 33412/1 (May 19, 1980). As a result, DAQ will not solicit any additional public comment on the ITA.

## **Potential to Emit**

### **Comment 19: WRA**

Page 7, ¶ 2

*“ . . . the AO does not include enforceable emission limitations, the project’s Potential to Emit (PTE) must be calculated on the assumption that the source will emit the maximum amount possible given its physical and operational design absent any emission limitations, See EPA NSR Workshop Manual II.B.1 at A.4, which will likely cause the project to be considered a major source for one or more criteria pollutant, triggering various other requirements and limitations not considered in the proposed AO.”*

### **DAQ Response:**

Utah regulations define “potential to emit” as

the maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

Utah Admin. Code R307-101-2 (definition of “potential to emit”). The source has estimated its uncontrolled potential to emit (without pollution control equipment) below 100 tpy of any criteria pollutant, demonstrating that it would remain a minor source. *See* NOI, Table 3-1 at 3-11; *see also* response to Comment 17.

No changes were made to the AO as a result of this comment.

## **Impact Analysis**

### **Comment 20: Environmental Coalition**

Exhibit A, Technical Comments, Page 2, ¶ 1, Megan Williams, (footnotes omitted) (emphasis in original)

*“ . . . the NOI does not use the correct PM2.5 modeled concentrations when evaluating total concentrations for comparison with the NAAQS. The NOI states that 24-hour average PM2.5 values are the 8th high value averaged over the 5 year modeled period. According to guidance from EPA, demonstrating compliance with the 24-hour PM2.5 NAAQS requires the 98th percentile monitored background value be added to the average of the 1st highest modeled 24-*

*hour average concentration over the five meteorological years modeled. Therefore, a five-year average of the 98th percentile 24-hour modeled concentrations, as presented in the NOI, underestimates modeled concentrations for PM2.5. As a result, maximum and total concentrations would be higher than what is relied upon for determining impacts from PM2.5 emissions from the proposed facility.”*

**DAQ Response:**

The applicant modeled the concentrations of PM2.5 for comparison with the 24-hour PM2.5 NAAQS based on EPA’s National Ambient Air Quality Standards for Particulate Matter. *See* 78 Fed. Reg. 3086 (Jan. 15, 2013). This final rule retained the level of 35  $\mu\text{g}/\text{m}^3$  and the form of 98th percentile of the 24-hour PM2.5 standard. *See id.* at 3088, 3091 (Table 1). The 98th percentile corresponds to the 8th highest value, where the highest 2 percent of the possible days in a year (7 days) are not counted towards meeting the NAAQS. Additionally, the applicant performed averaging over a five-year period, which is used for modeling as per Appendix W, as opposed to a three-year period, which is used for monitoring. *See* 40 C.F.R. Pt. 51, App’x W, § 8.3.1.2(a) (“Five years of representative meteorological data should be used when estimating concentrations with an air quality model.”) *cf.* 78 Fed. Reg. 3086, 3091 (Table 1) (98th percentile, averaged over 3 years for 24-hour PM2.5).

The commenter relies on the Memorandum from Tyler Fox, EPA Air Quality Modeling Group, to Erik Snyder, Lead Regional Modeler EPA Region 6, Regarding “Model Clearinghouse Review of Modeling Procedures for Demonstrating Compliance with PM2.5 NAAQS” (Fox Memorandum) (Feb. 26, 2010) to support its argument that the applicant should have used 1st highest modeled 24-hour average concentration. (Fox Memorandum did not endorse EPA Region 6 use of the 8th highest (98th percentile) modeled concentration for 24-hour PM2.5 for a Nucor Corporation Title V PSD permit application for a pig iron plant.) The Fox Memorandum is not a binding authority and is not even helpful guidance in this case. As the Fox Memorandum explains, “Given the generic issues associated with PM2.5 dispersion modeling and *the specifics of this case*, the Model Clearinghouse cannot endorse aspects of the modeling protocol presented by Nucor and approved by EPA Region 6 for the proposed pig iron plant.” Fox Memorandum at 2 (emphasis added). It is apparent that the Fox Memorandum analyzed a very specific project and concluded that 1st highest would be a better approach to protect the NAAQS. However, this project-specific analysis does not apply to all projects requiring 24-hour PM2.5 modeling. In fact, the total impact (the sum of background concentration and modeled results from the initial construction) of the proposed facility on PM2.5 24-hour NAAQS is at 21.80  $\mu\text{g}/\text{m}^3$ , which constitutes 62.28% of the NAAQS standard of 35  $\mu\text{g}/\text{m}^3$ . *See* Notice of Intent, App’x J Emissions Impact Analysis at 11-15, Table 11-1. Therefore, the impact calculated using the 98th percentile has a fairly substantial safety margin, which demonstrates that this approach is protective of 24-hour PM2.5 NAAQS and is appropriate for this proposed facility.

**Comment 21: Environmental Coalition**

Exhibit A, Technical Comments, Page 3, ¶ 4, Megan Williams (footnotes omitted)

*“NOx emissions from the emergency generator could be higher in practice than what was modeled in the NOI. The emissions inventory in the NOI uses an emission factor of 3.95 grams per horsepower-hour (g/hp-hr) based on manufacturer data for a Cummins QST30-G5-NR2*

generator. This emission factor is significantly less than the AP-42 emission factor for large stationary diesel engines, controlled by ignition timing retard, of 5.9 g/hp-hr. The approved installations in Section II.A.12 of the DAQ's Intent to Approve document only specifies that the emergency generator have a capacity of 1,482 horsepower and run on diesel fuel and the source specific requirements and limitations for the emergency generator in Sections II.B.1.d and e only limit hours of operation (500 per year) and fuel type (diesel). Given that the Emissions Impact Analysis shows total modeled 1-hour average NO<sub>2</sub> concentrations are nearly 80% of the NAAQS, operation of an emergency generator with even a modestly higher NO<sub>x</sub> emission rate – including operation for regular maintenance activities – could result in hourly concentrations that exceed the short-term NAAQS. The DAQ must specify the model of the engine that is the basis for the assumed emission factor in the approved installations portion of the permit.

**DAQ Response:**

Using manufacturer's data gives a real emissions estimate for a specific piece of equipment as opposed to using AP-42 generic factors that are designed to overestimate emissions where no data is available. Thus, the specific data is always preferred. Revolution Fuels supplied the exhaust emission data sheet for the emergency generator, showing 3.95 g/hp-hr for NO<sub>x</sub> when the generator is at full standby. This site is considered "as built"; the equipment has not been purchased but manufacturer's specification sheets have been used in a proposed analysis. Revolution Fuels will install an engine that has a comparable, if not better, emissions rate when purchased and installed. See NOI, Exhaust Emission Data Sheet 1000 DQFAD 60 Hz Diesel Generator Set at 33.

No changes were made to the AO as a result of this comment.

**Comment 22a: Environmental Coalition**

Page 1, ¶ 3

*“ . . . instead of using data from a representative monitor in neighboring Uintah County, the ITA relies on background concentrations from hundreds of miles away from the monitor with the lowest PM<sub>2.5</sub> monitor in the state.”*

Page 9, ¶ 2

*“As explained in the technical comments, the project's air quality analysis significantly underestimates the impacts of PM<sub>2.5</sub> emissions from the project for several reasons. Most egregiously, instead of using data from a representative monitor in neighboring Uintah County, the ITA relies on background concentrations from hundreds of miles away from the monitor with the lowest PM<sub>2.5</sub> monitor in the state. Using the representative background concentrations would show PM<sub>2.5</sub> concentrations exceed the NAAQS.”*

Exhibit A, Technical Comments, Page 2, ¶ 2, Megan Williams (footnotes omitted)

*“ . . . the NOI relies on background concentrations for PM from the Washington County monitor in southwest Utah. Since there are no active PM monitors in Carbon County, another data source must be used to determine representative background concentrations in the impacted area. The DAQ should evaluate whether data from a monitor so far away are considered more representative of background concentrations for the proposed facility location than a monitor located in an adjacent county (e.g., Uintah County) . . . ”*

**Comment 22b: UPHE**

Page 24, ¶ 3

*“For DAQ to use data from Washington County as a surrogate for establishing background levels of pollution, is inadequate and indefensible.”*

**Comment 22c: WRA**

Page 5, ¶ 1

*“Furthermore, the risk of violating the Annual and 24-Hour PM2.5 NAAQS is of particular concern, because the modeled PM values were not based on background PM levels in Carbon County, but were instead based on background PM levels in Washington County. If the background PM levels are in fact higher than those used in the model, the project may push Carbon County into nonattainment for the Annual PM2.5 NAAQS.”*

**Comment 22d: Individual Commenter Dennis Willis**

Page 2, ¶ 3

*“Washington County was chosen as the comparable county for PM baseline and modeling. Conveniently, Washington County has the lowest PM readings of any monitored Utah county.”*

DAQ Response:

As the comments acknowledge, representative background concentrations should be used. According to “Guideline on Air Quality Models”, 40 C.F.R. Pt. 51, App’x W (Dec. 9, 2005), on representative background data selection, the PM2.5 background data was collected at the UDAQ Santa Clara (Virgin) monitor. There are no PM2.5 monitors located in or near Wellington. The Santa Clara monitor is the most representative monitor of conditions at the proposed facility. Santa Clara is a city with a population comparable or larger than Wellington, so it is considered representative of emission levels. The other monitors that are available are located along the Wasatch front and in the Uintah Basin. There has been limited PM2.5 monitoring data available for use as background in the Uintah Basin, because most stations have less than 3 years of data needed to properly address the background for purposes of demonstrating compliance with the PM2.5 NAAQS. *See* 78 Fed. Reg. 3086, 3091 (Table 1) (98th percentile, averaged over 3 years for 24-hour PM2.5).

In addition, data from the Santa Clara monitor is more representative of the Wellington area because the monitors located along the Wasatch front and in the Uintah Basin experience more prolonged stagnation, pollution trapping, and associated secondary PM formation than at Wellington, due to their bowl-like topography.<sup>9</sup> The topography at Wellington is different in

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<sup>9</sup> *See* Arnold W. Reitze, Jr., *Utah’s Fine Particulate Air Pollution Problem*, 2014 Utah L. Rev. OnLaw 113, 118-19 (2014) (“During the winter inversions, most of the PM2.5 comes from secondary emissions.”); Kerry E. Kelly et al., *Receptor Model Source Attributions for Utah’s Salt Lake City Airshed and the Impacts of Wintertime Secondary Ammonium Nitrate and Ammonium Chloride Aerosol*, *Journal of the Air & Waste Management Association* Vol. 63 (2013), at 586 (Modeling (PMF and Unmix) demonstrating that secondary PM was the largest contributor to PM2.5 during winter months when PM2.5 concentrations exceeded 20 mg/m<sup>3</sup>. Specifically, 60–67% for Salt Lake City, 72–73% for Lindon, and 64–80% for Bountiful monitoring sites.); Utah State Implementation Plan, Control Measures for Area and Point

that the air is not trapped in a bowl and there is good drainage flow out of the area and into the Green River basin.

No changes were made to the AO as a result of this comment.

### **Comment 23: Environmental Coalition**

Page 9, ¶ 1, n.48

“‘[W]orst-case emissions should be employed in the modeling analyses conducted to demonstrate a facility’s compliance with the NAAQS and PSD increments.’ (Footnote 48: See *In re Northern Michigan University*, PSD Appeal 08-02 at 30 (Feb. 18, 2009) (remanding permit for using modeling that could result in underestimated emissions); *Ober v. U.S. EPA*, 84 F.3d 304, 309 (9th Cir. 1996) (holding Clean Air Act requires attainment of all NAAQS, including a 24 hour standard for particulate matter).)”

#### DAQ Response:

DAQ agrees that the worst-case emissions should be employed in the modeling analysis to demonstrate compliance with NAAQS (PSD increments are not at issue in this case, as this is a minor source). However, the question in this permitting action is how the worst-case emissions should be calculated. The cases cited by the commenter are not helpful in answering this question. *In re Northern Michigan University*, 14 E.A.D. 283, 2009 WL 443976 (Feb. 18, 2009), dealt, among other issues, with modeling of the worst-case emissions, where a proposed permit used BACT emission limits multiplied by maximum heat input to model the worst-case emissions for a boiler. *See id.*, at \*31. Sierra Club argued that the BACT emission limits used had relatively long averaging periods (i.e. twelve months, thirty days), where the NAAQS and PSD increments have short (i.e. one-hour, three-hours, eight-hours) averaging periods. *See id.* Thus, the approach taken in the proposed permit in *In re Northern Michigan* case did not align with the appropriate modeling benchmark and should have incorporated averaging times that were equal or shorter than those of the compliance standard. *See id.* The commenter does not contend in this permitting action that DAQ used incorrect averaging periods for emission limits when compared to NAAQS averaging periods. Instead, it argues that the background concentrations were incorrect due to a non-representative monitor data, and the modeled concentrations were incorrect when evaluating total concentrations for comparison with the NAAQS. Additionally, in *In re Northern Michigan University*, the EAB did not make a determination whether the proposed permit’s modeling of the worst-case emissions for the boiler was incorrect. *See id.*, at \*33. Instead, it remanded the permit back to the permitting agency to reevaluate and clarify because the record lacked “coherent” and “persuasive explanation” of the permitting agency’s decisions. *Id.*

In *Ober v. U.S. EPA*, 84 F.3d 304 (9th Cir. May 14, 1996), the Ninth Circuit reviewed a final decision by EPA to approve Arizona’s SIP for PM10 for the Phoenix area. The Ninth Circuit

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Sources, Fine Particulate Matter, PM2.5 SIP for the Salt Lake City, UT Nonattainment Area, Section IX. Part A.21, at 14 (“The majority of ambient PM2.5 collected during a typical cold-pool episode of elevated concentration is secondary particulate matter, born of precursor emissions.”).

vacated EPA's approval and remanded back to EPA partially because the Arizona SIP did not evaluate the reasonableness of control measures in relation to the 24-hour standard. *See id.* at 306. Arizona did not perform modeling for the 24-hour standard and instead relied on modeling data developed for the annual standard. *See id.* at 310. *Ober* is irrelevant to this permitting action because it was not a decision on a permit challenge but rather an analysis of whether EPA's approval of a state's SIP was arbitrary, capricious, and abuse of discretion, or contrary to the law, or in excess of statutory jurisdiction, authority, or limitations, or short of statutory right. *See id.* at 307.

No changes were made to the AO as a result of this comment.

**Comment 24: UPHE**

Page 25, ¶ 1

*“Central to the ITA is presumed compliance with NAAQS. UPHE can find no information in the entire ITA document on what part of the affected area the modeled concentrations of criteria pollutants claim to represent. Given the concentration of industrial activity near the proposed site, there could be a significant difference between the air quality near the site compared to just a few miles away. DAQ cannot accept the claim that NAAQS will not be violated because it does not know the current pollution concentrations at the site, which could be much different than what is measured in Washington County.”*

DAQ Response:

Documentation summarizing modeling is contained in the Source Plan Review, addressing NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> predicted concentrations and demonstrating compliance with NAAQS. *See* Source Plan Review at 11.

The modeling uses background NO<sub>2</sub> from the nearby UDAQ Price monitor, and PM<sub>10</sub> background from the UDAQ Moab monitor. Both sites have larger populations and higher expected background than at the project site. As discussed previously, the PM<sub>2.5</sub> background was taken from a representative location (Santa Clara monitor) that is representative of concentrations expected in the area. *See* response to Comments 22a through 22d.

As discussed in response to Comments 19a and 19b, the modeling uses EPA-recommended cumulative impact methodology that requires the inclusion directly into the model of significant sources that are close to the project. *See* 40 C.F.R. Pt. 51, App'x W, § 8.2.3. Using this method, the background does not have to be representative of local source impacts near the project, but could be representative of upwind concentrations. *See id.* § 8.2.3(b) (“Owing to both the uniqueness of each modeling situation and the large number of variables involved in identifying nearby sources, no attempt is made here to comprehensively define this term. Rather, identification of nearby sources calls for the exercise of professional judgement by the appropriate reviewing authority (paragraph 3.0(b)).”) In the case of this analysis, there were no sources located near the project that caused a significant concentration in the area of the project's maximum impact.

No changes were made to the AO as a result of this comment.

## **Cumulative Analysis**

### **Comment 25a: Environmental Coalition**

Page 10, ¶ 2 (footnotes omitted)

*“Additionally, the ITA must use the correct PM2.5 modeled concentrations. Finally, the ITA does not identify or include in the modeling emissions from other surrounding sources.”*

### **Comment 25b: Individual Commenter Richard Kanner**

*“Has their [sic] been an independent long term, area-wide cumulative analysis of this project in conjunction with these other pollution sources in the area before issuing the NOI to approve? If not, it should be done. Remember that if Carbon County is no longer in compliance with clean air standards along with other counties along the Wasatch Front we run the risk of losing Federal highway funds.*

*I am not aware of any baseline air monitoring data for Carbon County or the region for which to compare the long term effects of this plant. I don't believe there are even meters there. Just because we aren't measuring something doesn't mean it does not exist. Such baseline data should be compiled before this facility is permitted.”*

#### **DAQ Response:**

The emissions impact analysis did perform a two-step cumulative NAAQS analysis for each pollutant (as per R307-410), based on UDAQ and EPA's guidance. This methodology accounts for cumulative impacts for each pollutant by including nearby sources explicitly in the emissions impact analysis if they are located nearby and are found to be the significant contributors.

No changes were made to the AO as a result of this comment.

## **Other Impact Analysis**

### **Comment 26: Individual Commenter Dennis Willis**

Page 1, ¶ 1

*“Proximity of homes and populated areas is of special concern since PM and heavy metals tend to be at higher concentrations close to the source. The air quality permit must consider the proximity of residences and retail business.”*

#### **DAQ Response:**

All emissions impact analyses compare site emission concentrations at the fence line to the source, to the threshold limit value-ceiling (TLV-C). This source does not have any hazardous air pollutants that trigger analysis as per R307-410-5. Any triggered criteria pollutant impacts analysis is compared to the NAAQS. This source triggered emissions impact analysis for PM10 and PM2.5, which were compared for both the 24-hour standard and annual standard as per R307-410-4. See Source Plan Review at 11; see also NOI, Appendix J. All estimated emission concentrations are below the NAAQS.

No changes were made to the AO as a result of this comment.



**Comment 27a: Individual Commenter Dennis Willis**

Page 2, ¶ 1

*“DAQ should be required to collect at least two year’s worth of baseline data for PM around the population centers of Carbon County so that we have a proper baseline from which to measure any degradation on our airshed. If the facility does go in, it is a certainty there will be some degradation, as the AQ documents show. How are we to measure those impacts on our airshed with no baseline data? Furthermore, if this facility is built, there should be a requirement for continuing PM monitoring at strategic points in Carbon County as long as the facility is in operation.”*

**Comment 27b: Individual Commenter Dennis Willis**

Page 2, ¶ 4

*“Similarly, before this facility is approved, and before it begins degrading air quality, at least 24 months of VOC (volatile organic compounds) and methane air monitoring should be done. The existing Price, Utah DAQ monitoring station is collecting data for weather conditions and ozone only, and not PM 2.5, VOCs or methane. There is not a baseline of VOCs or methane data for the Price or Wellington area.”*

DAQ Response:

Background (baseline) monitoring data is required only for new Prevention of Significant Deterioration (PSD) sources as per 40 C.F.R. § 52.21(m)(1)(iv). In addition, this regulation only requires up to one year of data, and the commenter’s contention that two years’ worth of data is required seems to be an arbitrary number. Because this source is not a PSD source<sup>10</sup> the requirements of Section 52.21(m)(1)(iv) do not apply.

Finally, because this project is a minor source, there are no regulations that require continuing ambient air monitoring for minor sources. The airshed is protected through facility’s compliance with the NSR permit.

No changes were made to the AO as a result of these comments.

**Comment 28: Individual Commenter Dennis Willis**

Page 3, ¶ 2

*“Does the AQ modeling the State signed off on include modeling the local inversions especially during the winter? The wintertime conditions change the normal modeling assumptions, and this should be taken into account for wintertime inversion conditions. Also does the AQ modeling take into account what happens when there is the very common, weak to moderate South breeze, when everything is blown directly towards the nearby residents and the Chevron station? There is often a southerly breeze in this area. AQ modeling should assume worst case conditions. The modeling must include the presence of inversion conditions including mixing height, strength and duration of inversions. We know valleys in Utah are prone to inversions. We should be well past the game of pretending the atmosphere is always in standard conditions and then act*

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<sup>10</sup> A PSD source is defined as a source with emissions over 100 tons per year of a regulated pollutant. See Utah Amin. Code R307-101.

*surprised when inversions result in exceedance of air quality standards. We can no longer ‘assume away’ the existence of these inversions. This permit should not be issued until the nature of local inversions is better understood and included in the pollution modeling.”*

DAQ Response:

The emissions impact analysis accounted for local inversions in the way the meteorological data in dispersion air model (AERMOD) is used. The emissions impact analysis used five years of meteorological data from the nearby Price National Weather Service station that included all five winter inversion seasons. The project area is in the same air basin as the Price monitor, so the modeling calculations account for any inversions captured in the Price data.

No changes were made to the AO as a result of this comment.

**Comment 29: Individual Commenter Dennis Willis**

Page 3, ¶ 3

*“This facility will generate odors as a byproduct of the process. That is a given. Amines and HAPs smell, and they will be generated as shown by the AQ modeling documentation. Apparently the State does not regulate odors. What can be done for odor control? What will be done if there are complaints about odors? The boundary of this facility is located 1600 feet from US-6 and within 600 yards of the Chevron station, and within 300 yards of a house. Many more homes are within a quarter mile. Will the State do anything about excessive odors. We understand DAQ does not regulate odors; so who will, or are we to understand that odors will be completely unregulated?”*

DAQ Response:

The air quality regulations do not regulate odor. If odor is a concern, the commenter may contact local government agencies or local health departments.

No changes were made to the AO as a result of this comment.

**Comment 30: Individual Commenter Dennis Willis**

Page 3, ¶ 4

*“It seems clear the proposed project will cause a degradation to air quality. There is no quantification as to how much degradation will occur. There is merely an unreliable ‘trust me’ statement that it will not exceed standards. How can we know given the absence of baseline data and the apparent plan to not monitor criteria pollutants?”*

DAQ Response:

The Source Plan Review contains emissions impact analysis results, which compare the predicted impact of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> emissions, including the representative background data, with the NAAQS. See Source Plan Review at 11. This data expresses the total impact (baseline plus source impact) compared to the 1-hour, 24-hour and annual NAAQS for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. For more detailed information on the emissions impact analysis and how the impact analysis was conducted see NOI, Appendix J, Emissions Impact Analysis. See also response to Comments 20 through 24 on impact analysis.

No changes were made to the AO as a result of this comment.

## **Flare**

### **Comment 31: Environmental Coalition**

Page 2, ¶ 2

*“By completely ignoring the potentially significant emissions from flaring, the Director fails to demonstrate that the project will not interfere with air quality standards, particularly short-term NAAQS such as the one-hour SO<sub>2</sub> and NO<sub>X</sub> standards, the 8-hour ozone standard and the 24-hour PM<sub>10</sub> and PM<sub>2.5</sub> standards. The Director also failed to consider any available control technologies for the flare.”*

Exhibit A, Technical Comments, Page 2, ¶ 2, Megan Williams (footnote omitted)

*“The emissions inventory only includes emissions from the flare’s continuous pilot flame. Given that the Emissions Impact Analysis shows total modeled 1-hour average NO<sub>2</sub> concentrations are nearly 80% of the NAAQS, use of the flare – i.e., during startup, shutdown or upset conditions, as specified in the NOI – could result in hourly concentrations that exceed the short-term NAAQS. The DAQ must consider a more representative assessment of impacts from flare usage.”*

#### **DAQ Response:**

DAQ has not ignored the flare emissions. As per proposed condition II.B.4.a., “All exhaust gas/vapors from startup, shutdown and upset conditions shall be routed to the flare operating with a continuous pilot.” The continuous pilot is the only contribution to emissions associated with the flare while in normal operation. DAQ will address all emissions from upset conditions under R307-107-General Requirements: Breakdown. Startup and shutdown emissions operations have been limited to four per year (each) and the emissions associated with the startup and shutdown have been included into the emissions total in the Abstract of the ITA and the Source Plan Review on pages 2 and 6 “Summary of Emissions Total”. Normal operations of the plant also include the emissions from the four operational startups/shutdowns. With respect to whether the use of the flare will affect the short-term NAAQS, the additional four operational startup/shutdown emissions did not affect the impact analysis for NO<sub>x</sub> as per R307-410-4, Modeling of Criteria Pollutant Impacts in Attainment Areas. SO<sub>x</sub> was not analyzed since the expected concentration of sulfur in the feed gas going to the flare is nonexistent in a nitrogen purge gas.

A condition has been added to the permit to restrict the number of startups and shutdowns.

### **Comment 32: Environmental Coalition**

Page 14, ¶ 4 (footnotes omitted)

*“. . . the Director does admit that the use of the proposed flare will be a source of air pollution. Therefore, the Director must derive and impose a BACT emission limitation or standard on the flare. Alternatively, only with a demonstration of infeasibility, the Director may impose a ‘design, equipment, work practice, operational standard or combination thereof’ on the flare.*

*In contrast to his duties under R307-401-8(1)(a) and 8(5) obligations, the Director undertook no BACT analysis of any sort in connection with the flare. Therefore, for this reason alone, the proposed AO is legally insufficient.”*

Exhibit A, Technical Comments, Page 1, ¶ 2, Ron Sahu

*“The application simply includes a broad statement that the flare will combust “any syngas or vent gas” during startup, shutdown, or upset conditions. In the same section, the application also states that “...all process equipment is routed to the flare...” Taken at face value, all equipment and all gases can be vented to the flare at any time there is an “upset.” Therefore, potentially significant quantities of gases can be flared.”*

Exhibit A, Technical Comments, Page 1, ¶ 3, Ron Sahu

*“Clearly, the proposed permit allows flaring of unspecified quantities of gases of unknown composition per II.B.4.a. It allows this during startup, shutdown, and upset conditions.”*

Exhibit A, Technical Comments, Page 1, ¶ 1, Ron Sahu (internal citation omitted)

*“While a flare is present as evident in the application, only emissions from the 1 MMBtu/hr pilot flame from the flare are included in the emissions inventory.”*

#### DAQ Response:

The commenter argues that the Director failed to meet this obligation because the proposed flare is a source of air pollution. DAQ disagrees with this characterization because the flare is installed as control technology to combust nitrogen purge gas and syngas. The flare is used as pollution control and safety equipment for the gasification process, Fischer-Tropsch Unit, and hydro processing operation during startups and shutdowns.

The only emissions associated with the flare during normal non-upset conditions are the emissions from the pilot light. The flare pilot light’s emissions during such normal operation are miniscule, with a PTE of 0.21 tpy of NO<sub>x</sub> and 0.36 tpy of CO. Historically, BACT for emissions of this level is no additional pollution control equipment, but a requirement of proper maintenance and operation using natural gas. This BACT is imposed in AO conditions II.B.4 and II.B.1.b(A) of the permit, requiring no visible emissions from the flare.

Despite arguing that the flare itself is subject to BACT, the commenter provides no example of a control technology that could be applied to a flare operating during upset conditions, where the flare itself is already a control device for that exact purpose. The emergency flare is designed to concurrently relieve process gases from the fractionator in the hydro processing unit and relieve process gas from gasification. The process gas being flared from the hydro processing unit is mainly hydrocarbons (89 mol%), hydrogen (4 mol%), and pentane (4 mol%). The process gases being flared from the gasification process is mainly hydrogen (59 mol %), carbon monoxide (29 mol%), and carbon dioxide (10 mol%).

A condition will be added to the permit (condition II.B.1.g) limiting the source to four startups a year. The emissions from startup have been included in the PTE of the facility and did not change the classification of the source. Each startup is assumed to be a 72-hour event. The hydro processing startup involves removing oxygen, using nitrogen as purge gas. Hydrogen is

then introduced to initiate the hydrocracking reactions and pressurize the system. The hydro processing startup will last up to 24 hours. The gasification process involves activating the Fischer-Tropsch catalyst and slowly introducing feed gas to the process approximately 13 to 15 hours of gases being routed to the emergency flare.

A condition will be added to the permit (condition II.B.1.g) limiting the source to four shutdowns a year. The emissions from the shutdowns have been included in the PTE of the facility and did not change the classification of the source. Each shutdown estimates feed gases being sent to the flare from the gasification system and the hydro processing operation. The gasification shutdown will stop coal feed gas and initiate nitrogen purge gas to the operation to stabilize the process and ramp down the heaters. This process is estimated to send purge gas to the flare for about 12 hours. The liquids from the hydro processing operations will be routed to the flare and nitrogen will be introduced into the system while the temperature and pressure are being ramped down.

The estimated emissions from all startups and shutdowns in one year are as follows: 0.12 tpy of NOx, 0.56 tpy of CO, 14.12 tpy of CO<sub>2e</sub>, and 0.001 tpy of H<sub>2</sub>S.

The emissions from the emergency flare for startups and shutdowns that were added to the source's PTE do not trigger the requirements of R307-410-4<sup>11</sup> (Permits: Emissions Impact Analysis- Modeling of Criteria Pollutants Impacts in Attainment Areas) or R307-410-5 (Permits: Emissions Impact Analysis-Documentation of Ambient Air Impacts for Hazardous Air Pollutants). Because the startups and shutdowns are considered intermittent events that occur only four times a year, the events do not contribute to the 98 percentile (eighth high design value for the NO<sub>2</sub> 1-hour NAAQS).

Therefore, all emissions associated with the pilot light during normal operations are subject to BACT, as explained above. All emissions associated with the flare during startup and shutdown are accounted for in the PTE and limited to four each per year. All emissions associated with upset conditions will be addressed by DAQ under the Breakdown Rule R307-107.

A condition has been added to the permit to restrict the number of startups and shutdowns.

### **Comment 33: Environmental Coalition**

Page 14, ¶ 2

*“Here, there are no limitations on flare emissions and no AO emission limits apply when the flares are operating under ‘upset’ conditions. Therefore, the Breakdown Rule will never apply to the flare because there can be no ‘excess emissions’ and therefore no ‘breakdown’ when the flares are operating under upset conditions. Any emissions from the flares would not be in excess of those allowed by the AO, because the proposed AO allows unlimited ‘upset’ emissions*

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<sup>11</sup> Air quality modeling is required for a new source in an attainment area where a total controlled emission rate per pollutant is greater than or equal to 40 tpy of SO<sub>2</sub>, 40 tpy of NO<sub>x</sub>, 5tpy of PM<sub>10</sub> (fugitive emissions and fugitive dust), 15 tpy of PM<sub>10</sub> (non-fugitive emissions or non-fugitive dust), 100 tpy of CO, and 0.6 tpy of Pb. See Utah Admin. Code R307-410-4.

*from the flares. Without excess emissions, there is no breakdown, no reporting requirement and Rule 307-107 does not apply. Because Rule 307-107 does not serve to prohibit or limit upset flare emissions, it does not 'regulate' them and does not protect short-term NAAQS from upset flare emissions and does not limit the flare emissions for the purposes of calculating PTE."*

DAQ Response:

Refinery flares are subject to separate federal regulations. *See* 40 C.F.R. § 60.101a. This source is not classified as a refinery, as per Section 60.101a. The flare use is intended for upset/breakdown/emergency and startup/shutdown situations. During normal operations, the gas generated from the process equipment is used for conversion to liquid fuel and to fuel process heaters. There will not be excess gas generated during normal operations and there is no incentive for the source to flare the gas, which is a usable product.

The proposed flare will provide 98% destruction of gases during startup, shutdown and upset/breakdown/emergency. Without the flare, the gases during startups, shutdowns and upset/breakdown/emergency would be vented directly into the atmosphere. The only emissions to be considered in the flare's normal operation are the emissions from the pilot light. The pilot light is a small flame fired on natural gas to combust any gases during and emergency, startup and shutdown situations.

The flare is not intended to be operated on a continuous basis. Any operation, besides the continuous pilot light, constitutes startup/shutdown operations or upset/breakdown/emergency operations. Startup/shutdown operations are controlled by a condition that was added to the permit to regulate the number of startup and shutdowns to four per year each. Upset/Breakdown/Emergency operations are subject to R307-107-1 (Applicability and Timing), R307-107-2 (Reporting), and potentially R307-107-3 (Enforcement Discretion). These provisions assume that malfunction emissions are violations of an applicable approval order but afford DAQ discretion regarding the imposition of fines and penalties.

When calculating the PTE for flares for permitting purposes, the law does not require the inclusion of upset emissions because such upset emissions are not considered part of normal operations. *See Sierra Club v. Wyoming Dep't of Env'tl. Quality*, 251 P.3d 310, 314 (Wyo. 2011) (holding that "hypothesizing the worst possible emissions from the worst possible operation is the wrong way to calculate potential to emit . . . PTE includes only emissions that occur during normal operations" thus "cold start" emissions and "malfunctions" were properly excluded from the plant's PTE); *see also United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1141, 1158 (D. Colo. 1988). Accordingly, malfunction emissions were not included in the PTE calculations for the flare, which instead is based on the "average non-upset throughput to [the] flare" and appropriate emissions factors. *See Holly Order* at 45.

Contrary to the commenter's contention that upset emissions are unlimited under the AO, if upset emissions occur in excess of Revolution Fuels' limits, such emissions may be excused if they satisfy the requirements of Utah's Unavoidable Breakdown Rule ("UBR"). *See Utah Admin. Code R307-107*. Under the UBR, unavoidable breakdown emissions can be violations of an approval order, but DAQ is afforded discretion as to whether to seek enforcement if a source is in compliance with the other requirements of the rule, including monitoring and good

combustion practices. *See id.* The commenter’s claim that proposed permit allows unlimited upset emissions is incorrect. The limits in the proposed permit contemplate zero upset emissions from the flare. Any exceedance of the permit limits, due to upset conditions or otherwise, is a violation of the permit.

Finally, the commenter’s claim that the Breakdown Rule “does not ‘regulate’ [upset flare emissions] and does not protect short-term NAAQS from upset flare emissions and does not limit the flare emissions for the purposes of calculating PTE” takes issue with the Breakdown Rule itself. If the commenter considers the rule to be insufficient, it must address that concern through rulemaking, not a permitting action.

A condition has been added to the permit to restrict the number of startups and shutdowns.

**Comment 34: Environmental Coalition**

Page 15, ¶ 2 (footnotes omitted)

*“As a starting point for the Director’s BACT analysis, he should reference, at a minimum, Subpart Ja of the New Source Performance Standards for Petroleum Refineries (Subpart Ja). Subpart Ja applies to flares that commence construction, reconstruction or modification after June 24, 2008 and include a suite of standards that apply at all times that are aimed at reducing SO2 emissions from flares. The level of control prescribed by the Clean Air Act Section 111 for NSPS is the ‘best system of emission reduction’ of BSER. EPA arrives at BSER by examining emissions reductions achieved by the different systems available and the costs of achieving those reductions. After considering all of this information, EPA then establishes as the relevant NSPS the appropriate standard representative of BSER.”*

DAQ Response:

This source is not a petroleum refinery as defined in 40 C.F.R. § 60.101a because the feedstock in this process is not a petroleum derivative. For this reason, the NSPS referenced by the commenter does not apply to this source. The commenter does not explain how Subpart Ja would apply in this case, nor does the commenter identify any other NSPS that might be applicable, and does not identify any other control that would be the best system of emission reduction. *See* response to Comment 32 addressing BACT for the flare. The flare is intended to operate during startup, shutdown and upset/breakdown/emergency conditions, as listed in condition II.B.4.a of the proposed permit.

No changes were made to the AO as a result of this comment.

**Comment 35: UPHE**

Page 24, ¶ 4

*“. . . the ITA essentially places no restrictions on emissions from the flare. Given that, how can DAQ accept Revolution Fuels emissions estimate as representative of real operating conditions?”*

DAQ Response:

The permit does reflect real operating conditions. As listed in condition II.B.4.a of the proposed permit, this flare will operate as intended—during startup, shutdown and

upset/breakdown/emergency conditions. The only emissions considered in the flare's normal operation are those from the pilot light. The pilot light is a small flame fired on natural gas to combust any gases during the emergency, startup, and shutdown events. The flare is not intended to be operated on a continuous basis. As explained in response to Comment 32, startup and shutdown emissions are accounted for in the permit and the breakdowns will be handled under the Breakdown Rule. *See* response to Comment 33 for malfunction emissions.

No changes were made to the AO as a result of this comment.

**Comment 36: WRA**

Page 1, ¶ 3

*“The Requirement that the Flare Shall Operate with No Visible Emissions Is Not a Federally Enforceable Emission Limit and Fails to Limit Emissions from the Flare.”*

DAQ Response:

The flare is intended to operate during startup, shutdown and upset/breakdown/emergency situations as listed in condition II.B.4.a of the proposed permit. The flare is also subject to condition II.B.1.b(A), prohibiting visible emissions at all times.

Characterization of the flare operation requirements as not being subject to a “federally enforceable emission limit” is misplaced. *See* response to Comment 1. The use of Method 9 is specific to the flare and is a requirement at all times. A DAQ inspector will conduct opacity readings to verify compliance. Consequently, use of this method is consistent with the enforceability principles in EPA's 2002 Rule.

No changes were made to the AO as a result of this comment.

**Comment 37: WRA**

Page 2, ¶ 2

*“For the reasons described in the Sierra Club comments, it is especially important that any AO include mechanisms for monitoring, recording, and reporting data on emissions from the flare. The flare will be a significant source of emissions of SO<sub>2</sub>, NO<sub>x</sub>, CO and VOCs.”*

DAQ Response:

Monitoring, recordkeeping and reporting requirements as required by Title V regulations for major sources are not required for minor sources. Rules applicable to this source for coal handling include R307-401-8 (BACT), R307-107 (Breakdown Reporting), R307-165 (Emissions Testing), R307-201 (General Emissions Standards), R307-205 (Fugitive Emissions and Fugitive Dust), and 40 C.F.R. Pt. 60, Subparts A and Y.

The potential to emit emissions from the flare's pilot light are 0.21 tpy of NO<sub>x</sub>, 0.36 tpy of CO, 0.02 tons per year of VOC and less than 0.01 tons per year of SO<sub>x</sub>. The flare combustion is subject to R307-107 general requirement for breakdowns, operating during upset conditions outside of normal operation. The flare also operates during startup/shutdown operations, and emissions for startup and shutdown are included in the permit potential to emit emissions. “Significant increase” is defined in R307-101-2 as Nitrogen oxides: 40 tpy; Sulfur Dioxide: 40



tpy; PM10: 15 tpy; PM2.5: 10 tpy; Particulate matter: 25 tpy; Ozone: 40 tpy of volatile organic compounds and Lead: 0.6 tpy. The estimated emissions from the flare do not meet the significant definition in the rule.

The source will be responsible for complying with the opacity limit in the permit. This limit applies at all times, and is subject to inspection and recording by DAQ.

A condition will be added to the permit to limit the number of startup and shutdowns annually.

**Comment 38: WRA**

Page 2, ¶ 3

*“As also explained in the Sierra Club comments, without monitoring, recordkeeping and reporting requirements, the visibility “requirement” is not federally enforceable and cannot serve to limit PTE for the purposes of determining whether the plant is indeed a minor modification. See e.g. NSR Workshop Manual at A.1, A.4-A.9.2 Because PTE represents the maximum capacity of a source to pollute, the Director’s PTE must estimate emissions during the worst-case scenario, when the flare is emitting the maximum pollutants it is capable of releasing while still complying with applicable federally and practically enforceable permit limitations. Here, where there are no monitoring, recordkeeping or reporting restrictions on the flare, the “emission limitation” is not federally enforceable and does not limit PTE. NSR Workshop Manual at A.5 (“Practical enforceability means the source and/or enforcement authority must be able to show continual compliance (or noncompliance) with each limitation or requirement.”). Furthermore, Congress requires that “emission limitations” and “emission standards” ensure “continuous emission[s] reduction[s]” and be monitored and enforced to guarantee continuous compliance with the limit or standard. 42 U.S.C. § 7602(k). Plainly, the visibility “requirement” achieves none of these outcomes.”*

DAQ Response:

DAQ disagrees with the commenter’s contention that the visibility requirement is not enforceable. See response to Comment 37 (monitoring, recordkeeping and reporting requirements); Comment 1 (enforceability); Comments 36 (visibility requirements); Comment 19 (PTE). Method 9 is an EPA-approved method of determining visible emissions in permit condition II.B.1. Proposed Conditions II.B.4.b and II.B.4.b.1 were removed from the proposed permit to add clarity for opacity limitations. Condition II.B.1.b limits the flare to no visible emissions as per Condition II.B.1(A). Condition II.B.4.b.1 referencing Method 22 for determining compliance was removed due to conflict with Condition II.B.1 performing opacity observations as per Method 9.

**Comment 39: WRA**

Page 3, ¶ 4; Page 4, ¶¶ 1-2 (footnote omitted)

*“Moreover, effective and frequent monitoring, recordkeeping and reporting are especially important in this case, because the proposed project involves new designs and technology and no project of this scale has yet to be proposed that was not a major source.”*

*In short, there is no guarantee that the project will not produce emissions sufficient to qualify it as a major source. Given the significant legal, environmental and health impacts that would result if the project is in fact a major source, effective monitoring is essential.*

*Monitoring sufficient to establish continuous compliance with any applicable emission limitations and frequent reporting requirements are essential to upholding public involvement in the permitting process and enforcement of the permit. Without access to emissions data reported to the Director as a requirement of the permit, the public will have no way of knowing if emission limits are being violated and whether the project is contributing to any NAAQS violations. Public involvement in the permitting and enforcement processes is mandated by the Clean Air Act, and is essential to government transparency and the democratic process.”*

DAQ Response:

This general comment refers to PTE and compliance monitoring. However, the commenter does not tie the comments to any particular emissions unit or permit condition other than stack testing,<sup>12</sup> and cites no authority for the arguments that it makes regarding monitoring, recordkeeping, and reporting. *See also* response to Comment 37.

The commenter speculates that due to new design and technology involved in this project and the scale of this project compared to some unidentified and unknown projects, it is highly likely that Revolution Fuels is a major source. DAQ’s review of the source and the emissions impact analysis and its conclusion based on properly collected and examined data shows that the proposed project is a minor source. *See* response to Comment 20 (explaining the emissions impact analysis).

This project’s PTE was calculated using two alternative scenarios, the first one included the use of Selective Catalytic Reduction (SCR) controls and the second one excluded these same controls. *See* NOI at 3-11. The project qualifies as a minor source with or without these controls, as shown in NOI Table 3-1. *See id.* The project’s PTE without the controls with the startup and breakdowns in tons per year are: PM<sub>10</sub> (fugitive) at 1.5 tpy, PM<sub>10</sub> (non-fugitive) at 28.9 tpy, PM<sub>2.5</sub> at 28.9 tpy, NO<sub>x</sub> at 93.61 tpy, SO<sub>x</sub> at 1.91 tpy, VOC at 9.22 tpy, CO at 95.36 tpy, and CO<sub>2e</sub> at 295.876 tpy. These numbers are all below the 100 tpy threshold for a major project. *See* Utah Code Ann. R307-101-2 (definition of “major source”). Thus, Revolution Fuels is not subject to the Compliance Assurance Monitoring (CAM) rule in 40 C.F.R. Pt. 64.

Additionally, coal-to-liquid fuel technology is not a new technology and has been in existence since the 1920s. The process, known as Fischer-Tropsch (FT) Synthesis, uses gasification to convert carbon materials to carbon monoxide and a hydrogen-rich synthetic gas. This synthesis gas, or syngas, is fed into an FT reactor that condenses the gas over a catalyst and converts it to wax and liquid products that can be refined into a variety of synthetic fuels.

No changes were made to the AO as a result of this comment.

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<sup>12</sup> DAQ addresses the stack-testing requirement in responses to Comments 75a-75b.

**Comment 40: WRA**

Page 8, ¶ 3

*“Because the Director Did Not Estimate SO<sub>2</sub> Emissions from the Flares, He May Not Assume that R307-410-4 Is Not Trigger [sic] by the Project.”*

**DAQ Response:**

See response to Comment 31 addressing SO<sub>2</sub> emissions. This flare is intended to operate during startup, shutdown and upset/breakdown/emergency conditions as listed in condition II.B.4.a of the proposed permit. The only emissions to be considered in the flare’s normal operation are the pilot light. The pilot light is a small flame fired on natural gas to combust any gases during an upset/breakdown/emergency. The startup and shutdown situations have emissions of 0.21 tpy of NO<sub>x</sub>, 0.36 tpy of CO, 0.02 tpy of VOC, and less than 0.01 tpy of SO<sub>x</sub> (SO<sub>2</sub>). The flare is not intended to be operated on a continuous basis in startup, shutdown and upset/breakdown/emergency situations. A condition has been added to the permit to limit the number of startups and shutdowns Condition II.B.1.g of the permit. The emissions associated with the startups and shutdowns have been added to the potential to emit and did not trigger modeling or a classification change. Because SO<sub>2</sub> emissions are below significant levels, R307-410-4 is not triggered for SO<sub>2</sub>.

No changes were made to the AO as a result of this comment.

**Comment 41: Environmental Coalition**

Exhibit A, Technical Comments, Page 1, ¶ 1, Ron Sahu (footnote omitted)

*“Setting aside the fact that the enforceability of even this condition is so weak as to be meaningless in the proposed permit, visible emissions are not the only emissions that can be emitted from flaring. This limitation does not limit any gaseous pollutants, which do not cause any “visible” emissions that will be emitted from the flare when it is actually in use.”*

**DAQ Response:**

The flare must operate as per 40 C.F.R. Pt. 60, Subpart A, conditions II.B.1.b(A), using EPA approved Method 9 (see response to Comment 38) and condition II.B.4.a operation limitations. Moreover, although the commenter notes that the Ohio permit included with the applicant’s NOI uses Method 9, Method 9 is also required in this permitting action, which addresses the commenter’s concern about enforceability, as explained in response to Comment 36. With regard to gaseous emissions, flares have a minimum 98% destruction rating for controlling VOC emissions (Flare Efficiency Study, EPA-600/2-83-052, July 1983) . The commenter states a visible emissions limit does not limit any gaseous emission, yet does not give any suggestions or examples to limit gaseous emissions.

No changes were made to the AO as a result of this comment.

**Comment 42: Environmental Coalition**

Exhibit A, Technical Comments, Page 2, ¶ 1, Ron Sahu

*“. . . none of the terms ‘startup,’ ‘shutdown,’ or ‘upset’ are defined in any manner in the permit or application. Thus, combined with the provision that ‘any syngas or vent gas’ can be flared*

*during unspecified and non-defined periods such as startup, shutdown, or upset – it means that unlimited quantities of syngas/vent gas can be flared with no regard to emissions.”*

DAQ Response:

Startup and shutdown are defined in 40 C.F.R. Pt. 60, Subpart A and breakdown is defined in Utah Administrative Code R307-101-2. The commenter cites no requirement that these terms be defined in the permit. In any event, the definitions apply to the source regardless of whether they are defined in the permit or only in the applicable regulations.

No changes were made to the AO as a result of this comment.

**Comment 43: Environmental Coalition**

Exhibit A, Technical Comments, Page 2, ¶ 6, Ron Sahu

*“ . . . in the Ohio permit provided in the application itself [Revolution Fuels NOI, Red Lion Air Permit, pp. 21-23] NOx, CO, and SO2 emissions for the flare in that case include not just the pilot emissions but also emissions from flaring based on the “maximum heat output of the flare of 174 mmbtu/hr...” for calculating the hourly NOx, CO and SO2 emissions. Additionally, for annual emissions, the Ohio permit requires that NOx, CO, and SO2 emissions include the heat input associated with 30% of the syngas produced during the year. [Id.]. In the present instance, there is nothing noted as to the heat output capacity of the flare at all. And, annual emissions include no contributions of syngas/vent gas that the application itself states will be combusted.”*

DAQ Response:

Details for vendor-supplied items like the flare system are to be confirmed once selected vendor information is available.

The commenter references the Ohio Red Lion Air Permit that is a PSD source. This comment is not relevant to this minor source project.

No changes were made to the AO as a result of this comment.

**Comment 44: Environmental Coalition**

Exhibit A, Technical Comments, Page 2, ¶ 6, Ron Sahu

*“ . . . other coal-based gasification plants (which are similar to the one proposed by Revolution, since coal is first gasified and the resulting syngas is then converted to various liquids) have explicitly considered flare emissions in their air quality analyses. We provide a recent example from Texas.”*

DAQ Response:

The Summit Texas Clean Energy, FutureGen site is an integrated gas combined cycle power plant producing 400 MW and processing 2,114,195 tons per year of coal. FutureGen appears to have limits on the flares, but only in one instance does it specify startup, shutdown and malfunction. The fact that a source attempts to include flare emissions in a permit application does not mean it is a regulatory requirement.

Additionally, FutureGen is a major PSD source for PM10, NOx and SOx. Revolution Fuel gasifies coal to syngas and then to liquids and is not a major source. As such, it should not be compared with a major PSD source, as the throughput and end products are different. FutureGen uses coal gasification to generate power, using over 2,000,000 tons of coal annually. Revolution Fuel is using 273,000 tons of coal annually. Summit Texas has 60 startups and 60 shutdowns calculated and Revolution Fuels is restricted to 4 startups and 4 shutdowns annually.

The commenter relies on an Environmental Impact Statement (EIS) used for the FutureGen gasification project. EISs are prepared under the National Environmental Policy Act (NEPA). Congress has expressly exempted the Clean Air Act from NEPA review. *See* 15 U.S.C. § 793(c)(1) (“[n]o action taken under the Clean Air Act shall be deemed a major federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act”).

By contrast, Revolution Fuels’ proposed project is a minor source, and Utah’s minor New Source Review program is part of an EPA-approved State Implementation Plan codified at 40 C.F.R. § 52.2320, as required by Section 7410(a)(2)(C) of the Clean Air Act. As such, all permits issued thereunder are issued not just pursuant to state authority but also under the state’s SIP authority under the Clean Air Act. *See Sierra Club v. Korleski*, 681 F.3d 342, 343 (6th Cir. 2012) (“if the EPA approves a State’s proposal, then the SIP is added to the Code of Federal Regulations and becomes federal law”); *see also* <http://www.epa.gov/nsr/minor.html> (EPA informational webpage on Minor New Source Review).

Even if the FutureGen EIS were properly before DAQ, it is unclear whether the calculations the commenter relies on were conducted for air permitting purposes. The EIS does not specifically mention malfunctions, and does not state that FutureGen is satisfying a specific regulatory requirement. E-4 of the FutureGen EIS (App’x E) states that “unplanned restart events cannot be predicted.” Likewise, on page E-5: “To estimate air quality impacts associated with unplanned restarts emissions, DOE developed a ‘worst case’ profile based on the occurrence of a single plant upset mode following prolonged steady state operations with an immediate return to steady-state emissions.” The profile was developed by the Department of Energy and does not appear to have been developed under CAA requirements for CAA purposes, and instead might have been for NEPA purposes. Consequently, it cannot be used or imposed as a CAA requirement. It also does not answer the question of whether it is a requirement or whether upsets can be predicted, or are part of normal operation.

Table 3.6 of the Medicine Bow gasification project application provided by the commenter contains estimates of malfunction emissions, but the comment does not state that this inclusion was pursuant to a regulatory requirement.

The Power Holdings permit application that the commenter submitted was for a coal-to-synthetic natural gas project, while Revolution Fuels is a coal-to-liquid project. The application appears to address malfunctions in context of BACT, which is a separate analysis from whether such emissions should be included in PTE. Moreover, the application seems to have evaluated malfunction emissions in the AERMOD model, using three malfunction scenarios. The Power Holdings application also states that “A review of the RBLC data and other recent ‘energy

project' permits shows that many permits contain emission limits that totally exclude periods of startup, shutdown, and malfunction, while others such as the Facility proposed to include these periods in the permit," and that "Flares are, in and of themselves, control devices. BACT for flares is generally accepted as means to control gas streams that have some heat content. Power Holdings proposes to install flares to control emissions from the gasification trains during start up and during malfunction events." Ex. 19 Summit Application at 1-97, 1-100 (attached to Ex. A, Technical Comments, Ron Sahu at 4, n.6). Neither statement supports the commenter's claim that malfunction emissions must be included in air quality analyses. The second statement supports DAQ's position that the flare is a control device.

To summarize, in addition to the other flaws that make these projects distinguishable from the proposed Revolution Fuels project, none of the examples the commenter provides show that malfunction emissions must be included in air quality analysis. Moreover, the commenter does not acknowledge that DEQ has already determined that such emissions are not included. Holly Order at 40; 44-46.

BACT has been submitted as per R307-401-5; a flare is a control device to combust gases with a design destruction efficiencies for gases. BACT limit for gases is the use of a flare with an opacity limit to be monitored using an EPA-approved testing Method 9. The flare will be purchased, installed and operated to meet the permit requirements.

No changes were made to the AO as a result of this comment.

## **LDAR**

### **Comment 45: Environmental Coalition**

Page 16, ¶ 2

*"The Director Failed to Evaluate Fugitive VOC and HAP Emissions and Require a Leak Detection and Repair (LDAR) Program."*

Exhibit A, Technical Comments, Page 8, ¶ 2, Megan Williams

*"DAQ should consider additional storage tank requirements including inspection and maintenance and leak detection and repair measures."*

#### **DAQ response:**

The Revolution Fuels facility is not subject to 40 C.F.R. Pt. 60, Subpart VVa, Subpart GGG, or Subpart KKK. Revolution Fuels is subject to Subpart GGGa (Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006) for the Fischer-Tropsch, hydro processing and distillation process units. Accordingly, LDAR is applicable to these processes. This source will comply with all requirements within this subpart. The source has also agreed to perform an annual facility-wide LDAR analysis for all units not subject to Subpart GGGa. LDAR requirements are contained in section II.B.5 of the permit.

The evaluation of installing leakless components on a plant-wide basis in place of conventional gas and light liquid valves and light liquid pumps for VOC containing process streams showed

that leakless components would not be cost effective (\$569,647 per ton of CO emissions removed in Air Permit Application for Kentucky Newgas, page 8-20 for SRU, ATS and FS-3 processes).

The permit will have LDAR requirements for the facility added.

**Comment 46: Environmental Coalition**

Page 6, ¶ 2 (footnotes omitted)

*“The goals of BACT emission limitations are: ‘(1) to achieve the lowest percent reduction, (2) to protect short-term ambient standards, and (3) to be enforceable as a practical matter.’ ‘Once the BACT is selected for a new facility, an emission limitation based on that control technology is also imposed as part of BACT.’”*

DAQ Response:

The comment includes the quotation above and discusses generally the commenter’s view of the BACT process. Utah regulations define BACT as:

an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each air contaminant which would be emitted from any proposed stationary source or modification which the director, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR parts 60 and 61. If the director determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

Utah Admin. Code R307-401-2(1)(d). DAQ evaluates BACT to implement control technologies and/or operation standards on sources/emitting units based not only on a maximum degree of reduction but also on economic and technical feasibility. BACT must be validated using emission limits or other requirements to verify the controls/operations are being performed as stated in the submitted BACT analysis from the source. Therefore, even though BACT seeks to achieve the lowest percent reduction, such reduction is subject to economic and technical feasibility of the control technologies or operation standards.

The commenter quotes the Utah Supreme Court’s decision in *Sierra Club v. Air Quality Bd.*, 2009 UT 76, 226 P.3d 719. The Executive Director has determined that in *Sierra Club*, the Utah Supreme Court observed in dicta that: “the EPA has described the goals of BACT emission limitations in three-parts: (1) to achieve the lowest percent reduction, (2) to protect short-term ambient standards, and (3) to be enforceable as a practical matter.’ The court never evaluated or held this was a correct interpretation of the relevant regulations.” Holly Order at 52, n.13.

To the extent that the commenter relies on *Sierra Club* as establishing a particular process for evaluating BACT, the Executive Director has also determined that *Sierra Club* “is a case that reviewed an AO issued under Utah’s PSD program.” Tesoro Order at 29. The proposed Revolution Fuels project is a minor source. The Executive Director has recognized that “while *Sierra Club* . . . and other PSD cases may be viewed as being instructive . . . UDAQ’s discretion is at its highest when it is interpreting and applying its own regulations, as is the case with Utah’s minor NSR program.” *Id.* Although DAQ acknowledges that DAQ makes the final BACT determination to be imposed on the project applicant, to the extent that the commenter suggests that DAQ must conduct a separate BACT analysis, the Executive Director has specifically determined otherwise. *See id.* at 32 (Executive Director stating that DAQ need not “conduct an entirely independent review of BACT”).

To the extent that the commenter relies on *Sierra Club* to claim that DAQ must impose a numeric emission limitation as a result of BACT, the Executive Director has determined that the BACT definition does not always require such a limitation, as the definition

clarifies that a BACT determination may result in a potential broad array of requirements that may include imposition of air pollution control equipment or methods, a numeric emission limitation, or both. Each, however, must have the effect of limiting the quantity, rate or concentration of emissions of air pollutants. There is no requirement in Utah’s minor NSR program that BACT must result in a numeric emission limitation.

*Id.* at 30-31. No changes were made to the AO as a result of this general comment.

#### **Comment 47: Environmental Coalition**

Page 7, ¶¶ 1-3

*“Nor may the Director take a more lax approach to BACT under Utah’s minor New Source Review (NSR) program than may be taken under Utah’s Prevention of Significant Deterioration (PSD) program.”*

*“. . . EPA, in approving Utah’s minor NSR, took Utah at its word that the state’s BACT Rule results in the same emission reductions whether applied to major or minor sources and modifications . . .”*

#### DAQ Response:

The commenter incorrectly infers from the Utah regulations that DAQ must utilize the same approach to BACT under its minor NSR program permitting as it would under the PSD program for major sources or major modifications in areas already attaining federal air quality standards.



Revolution Fuels is a minor source, where DAQ has more discretion to develop the program requirements, including the definition and interpretation of the BACT analysis.<sup>13</sup> DAQ's discretion is at its highest when it is construing and applying its own regulations, given that BACT for Utah's minor NSR program is derived exclusively from Utah regulations. *See* Tesoro Order at 28; Utah Code Ann. § 19-1-301.5(14)(c)(i); *Taylor v. Utah State Training School*, 775 P.2d 432, 434 (Utah Ct. App. 1989) (reviewing existing case law and noting that Utah courts have provided deference to agency interpretations that “involve the interpretation of terms or phrases more easily understood by the agency . . . because the term or phrase involved is within the agency's area of expertise”); *see also Via Christi Regional Med. Ctr., Inc. v. Leavitt*, 509 F.3d 1259, 1272 (10th Cir. 2007) (internal quotation marks omitted) (recognizing that a reviewing court “must give substantial deference to an agency's interpretations of its own regulations” and stating that deference is particularly important where “the regulation concerns a complex and highly technical regulatory program”).

DAQ has reviewed the BACT analysis submitted by the source as required by R307-401-5 and has evaluated the technical and economic feasibility of available controls. Based on this analysis BACT was selected and has been imposed on all Revolution Fuels' operations and equipment. *See* Source Plan Review at 7-11 (review of BACT analysis); NOI, App'x G. Section II.B of the proposed permit contains these requirements and limitations imposed due to BACT.

Notwithstanding the fact that the BACT definition is the same for minor and major sources, BACT is by definition a case-by-case analysis on any new or modified equipment added to any facility to determine the BACT emissions limit of an emissions unit or process based upon technical and economic feasibility. Accordingly, it is reasonable to assume that BACT could be different for major versus minor sources as both technical and economic feasibility are considered. The comment fails to acknowledge that the BACT result is driven by the factors in the analysis, rather than any preconception of what the minor source BACT result should be relative to a theoretical major source BACT determination.

As to the commenter's reference to *Sierra Club*, 2009 UT 76, that the “state rule must still be interpreted in a way that serves the purpose of the Clean Air Act,” UDAQ again notes that *Sierra Club* addressed a major source under the PSD program. *See* Environmental Coalition comments at 7, n.37. The commenter fails to show that DAQ's exercise of its statutory discretion to interpret the requirements of the state rule fails to interpret that rule “in a way that serves the purpose of the Clean Air Act” because the commenter is unable to point to any BACT limit in the ITA that it believes is less stringent than it would otherwise be under major source NSR BACT. *Sierra Club*, 2009 UT 76, ¶ 17.

To conclude, the comment does not address any specific provision of the ITA. Thus, the comment is moot because the commenter does not point out a single instance where the emissions permitted under the proposed permit are any greater than they would be if DAQ permitted the project as a major source. Without further specificity, it is not clear why or how

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<sup>13</sup> Utah's minor permit program is codified at Utah Administrative Code R307-401, and DAQ evaluated and imposed BACT on Revolution Fuels under this program.

the commenter believes DAQ's application of BACT to the proposed project might be less protective than major source BACT. Thus, even assuming the commenter's interpretation of the minor source BACT requirements were correct, there is no evidence that the emission limitations and reductions in the proposed permit would be any different if permitted as a major source. Thus, the comment fails to indicate any specific instance where DAQ's minor source BACT determinations do not fulfill the BACT goals that commenter emphasizes, or that the BACT selected will not be sufficient to protect the NAAQS. Thus, the EPA statement quoted by the commenter is irrelevant because the commenter does not show that any aspect of the ITA conflicts with that statement.

Moreover, the commenter fails to acknowledge that the Executive Director has already addressed this question, *see* Tesoro Order at 27-28, and determined that just because Utah's minor source program contains a BACT requirement, DAQ does not surrender its own statutory discretion in how it interprets the requirements of the BACT provision.

Prohibition on visible emissions can be used as an operational standard under the definition of BACT above. Condition II.B.1.b includes visible emission limitations for all points for the source. Some equipment/processes have additional BACT limitations imposed on the equipment, which are stated as proposed permit conditions.

No changes were made to the AO as a result of this general comment.

#### **Comment 48: Environmental Coalition**

Page 5, ¶ 2

*"The preconstruction permit for a major source, referred to as a 'PSD permit,' has two central purposes, each critical to the Act's overall scheme: First, the permit sets the limits that will govern the plant's emissions of air pollutants to a rate consistent with the use of the best available methods, systems, and techniques of pollution control (in Clean Air Act jargon, this emission limit is called the 'Best Available Control Technology' ('BACT')). BACT is considered '[o]ne of the most critical elements of the [PSD] permit[ing] process.'"*

#### DAQ Response:

Discussion of a PSD permit requirements is irrelevant for purposes of this permitting action because Revolution Fuels' permit is being issued under the Utah minor source permitting regulations. *See* Utah Admin. Code R307-401; *see also* response to Comment 47.

#### **Comment 49: Environmental Coalition**

Page 6, ¶¶ 4-5 (footnotes omitted)

*"As the Utah Supreme Court explained, BACT analysis begins with the identification of all available control technology options for each regulated pollutant. 'In effect, the reviewer must consider lower emitting processes and practices [and] add-on controls[.]' Then, based on a 'documented demonstration,' the 'reviewer eliminates technically infeasible options.' The control technologies are next ranked by 'effectiveness' based on 'efficiency, emission rate, and emission reductions.'*

*Starting with the most stringent technology, the ‘reviewer’ next ‘objective[ly]’ evaluates the economic, environmental, and energy impacts, ‘both beneficial and adverse,’ of the technologies. Only if this analysis ‘proves’ that the first ranked technology is inappropriate, is that technology eliminated and the next most effective alternative evaluated. Based on this process, the most effective, achievable technology is proposed as BACT.”*

DAQ Response:

Please see responses to comments 46 and 47. No changes were made to the AO as a result of this comment.

**Comment 50a: Environmental Coalition**

Page 2, ¶ 4

*“The Director failed to analyze best available control technology (BACT) for many sources of emissions, such as the gasification burners and cooling towers, and the BACT analyses that were performed were flawed, including the coal handling processes.”*

**Comment 50b: UPHE**

Page 11, ¶ 2

*“Utah’s Division of Air Quality has indicated in its notice soliciting comments that the proposed CTL project has been analyzed to determine the feasibility of applying Best Available Control Technology (BACT) to its NOx emissions and to its particulate emissions (at least from “coal handling” rather than burning) but it has given no indication of whether it will require Revolution to install BACT to control these pollutants.”*

**Comment 50c: Individual Commenter Dennis Willis**

Page 4, ¶ 5

*“BACT for all pollutants should be required especially given the large number of unknowns, the proximity to an unusually sensitive population and in the general interests of the county.”*

DAQ Response:

See responses to Comment 51 for gasification and cooling towers and response to Comment 57 for coal handling. The review of BACT analysis is in the Source Plan Review on pages 7-11 and the BACT analysis is found in Appendix G of the NOI. As required by Utah Administrative Code R307-401-5, the BACT analysis was submitted by the source, addressing all emission points.

No changes were made to the AO as a result of this comment.

**Comment 51: Environmental Coalition**

Exhibit A, Technical Comments, Page 7, ¶ 2, Megan Williams (footnote omitted)

*“. . . DAQ must complete BACT analyses and incorporate the determination into the permit to control PM emissions from the gasification burners and cooling tower and CO2 emissions from the Syngas Treatment process vent and Fischer-Tropsch unit. A BACT determination should be made for these pollutants since the potential emissions from these sources is considered significant.”*

DAQ Response:

Regardless of the amount of PM emissions from the gasification burners, there is no commercially available control technology for PM emissions resulting from combustion, and the commenter does not indicate otherwise. The cooling towers are equipped with mist eliminators to reduce drift, which the commenter does not dispute is BACT for this equipment. For CO<sub>2</sub>, see response to Comment 72a-72e.

No changes were made to the AO as a result of this comment.

**Comment 52: Environmental Coalition**

Exhibit A, Technical Comments, Pages 5-7, Table: Potential to Emit (PTE) and Best Available Control Technology (BACT) Review of Approved Installations in the Proposed Permit, Megan Williams

*The commenter states that no operating practices or emission limits are proposed in the permit for NO<sub>x</sub> on the Auxiliary Boiler. The commenter also states that no control technologies, operating practices or emission limits are proposed in the permit for PM on the Auxiliary Boiler.*

DAQ Response:

The auxiliary boiler is limited to 500 hours of operation as per condition II.B.1.f and a 10% opacity limitation for all natural gas/syngas operated equipment as per condition II.B.1.b(E). BACT addressing the auxiliary boiler for NO<sub>x</sub> and PM<sub>10</sub>/PM<sub>2.5</sub> is located in Appendix G-4 of the NOI. The installation of the PM controls on a limited use unit is not cost-effective (controlling 0.14 tons per year)—a point the commenter does not address.

No changes were made to the AO as a result of this comment.

**Comment 53: Environmental Coalition**

Exhibit A, Technical Comments, Pages 5-7, Table, Megan Williams

*The commenter states that no operating practices or emission limits are proposed in the permit for NO<sub>x</sub> on the natural gas fired process heaters. The commenter also states that no control technologies, operating practices or emissions limits are proposed in the permit for PM.*

DAQ Response:

The process heaters are limited to be operated on natural gas/syngas as per condition II.B.1.e and a 10% opacity limitation for all natural gas/syngas operated equipment as per condition II.B.1.b(E). BACT addressing the PM<sub>10</sub>/PM<sub>2.5</sub> for the process heaters is located in Appendix G-5 and 6 of the NOI. See also response to Comment 46 for enforceability of BACT.

No changes were made to the AO as a result of this comment.

**Comment 54: Environmental Coalition**

Exhibit A, Technical Comments, Pages 5-7, Table, Megan Williams

*The commenter states that no control technologies, operating practices or emission limits are proposed in the permit for NO<sub>x</sub> and PM for the Internal Combustion Engines.*

DAQ Response:

The diesel emergency engine is limited in condition II.B.1.d to 500 hours of non-emergency use for testing and maintenance. The limited use (500 hours) of the diesel emergency engine in permit condition II.B.1.d limits the emissions of NO<sub>x</sub> and PM.

No changes were made to the AO as a result of this comment.

**Comment 55: Environmental Coalition**

Page 8, ¶ 2

*“As explained in the attached technical comments, attached as exhibit A, the Director’s BACT analyses suffer from many flaws. The Director did not perform a BACT analysis for many sources, and for many BACT analyses that were performed, the Director did not propose any emission limitations, much less to the maximum degree possible. For example, the Director did not complete any BACT analyses or incorporate into the Approval Order any emissions limits or conditions to control PM emissions from the gasification burners and cooling towers. The Approval Order also does not include any emissions limits for NO<sub>x</sub> and VOC and associated compliance requirements for the auxiliary boiler and process heaters.”*

DAQ Response:

The commenter addresses PM BACT and emissions limits for the gasification burners and cooling tower. See response to Comment 51. The commenter addresses emissions limits for auxiliary boilers and process heaters. See response to Comments 52 and 53.

No changes were made to the AO as a result of this comment.

**Comment 56: WRA**

Page 7, ¶ 4, page 8, ¶ 1 (footnote omitted)

*“ . . . the proposed AO fails the requirement to implement BACT, which is defined as an emission limit in 40 C.F.R. § 52.21(b)(12); Utah Admin. Code R307-401-2(1). Because the proposed AO’s monitoring and reporting requirements render its NO<sub>x</sub> and CO emission limits unenforceable, the proposed permit lacks the enforceable emission limits it would need to meet the requirements that the project apply BACT outlined in Utah Admin. Code R307-401-8(1)(a) and 8(5).”*

DAQ Response:

Although the definition of BACT is the same under 40 C.F.R. § 52.21(b)(12) as it is under Utah Admin. Code R307-401-2(1), Section 52.21(b)(12) has no application here for the reasons explained in response to Comment 16.

The definition of BACT does not specify the level of monitoring or reporting that is required for a BACT limit to be an enforceable emissions limit. The determination of appropriate monitoring is an engineering decision, and is not determined by a specific federal or state regulation or standard. See response to Comment 46 for BACT.

In any event, a limit is not always required.<sup>14</sup> BACT may be a tiered engine, a visibility standard, or a work place practice. Where BACT results in a limit, testing may only be required for the pollutant that is the greatest percentage of the emissions for a particular point source.

The commenter claims generally that the NOx and CO limits are unenforceable due to deficiencies in monitoring and reporting, but does not attempt to tie those concerns to any specific emissions unit. Consequently, the comment does not explain how the emissions limitations and corresponding enforcement provisions are unenforceable. For NOx and CO limits and AO conditions *see* table in response to Comment 17.

No changes were made to the AO as a result of this comment.

## **Coal Handling**

### **Comment 57: Environmental Coalition**

Page 17, ¶ 4 (footnote omitted)

*“The Director’s BACT analysis for the coal handling processes, practices and equipment is insufficient. The Director does not support his contentions with: 1) evidence; 2) cost analysis; 3) comparisons of emission limitations or emission reductions achieved through practices at other similar facilities; 4) calculations of efficiency and effectiveness of the various proposed control technologies; and, 5) the other considerations relevant to adequate BACT analysis as described by Utah’s BACT rule and the Utah Supreme Court in Sierra Club. The Director also fails to derive a defensible emission limitation or standard based on his BACT analysis or explain why an emission limitation is infeasible. The Director also does not make a connection between, for example, the operating practices he requires and the emission limitation he imposes.”.. “Also, the Director imposes no monitoring, recordkeeping or reporting requirements to ensure continuous compliance with the opacity limits or the practices on the coal handling operations. As a result – assuming that the opacity limits and practices represented BACT in some sense – they do not meet the definition of BACT – which is an “emission limitation[s].”*

Exhibit A, Technical Comments, Pages 5-7, Table, Megan Williams

*The commenter states that no operating practices are proposed for storage piles and truck loading / unloading. The commenter also states that no BACT analysis is done for coal handling and ash removal systems (e.g., conveyor transfers (including vibrating conveyors), radial stackers, bin transfers, coal crushing, etc.).*

### **DAQ Response:**

The comment misconstrues the BACT process and requirements. *See* response to Comments 46 and 47. The fugitive emissions associated with the coal and ash material handling operations are

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<sup>14</sup> *See* Tesoro Order at 31 (“. . . a BACT determination may result in a potential broad array of requirements that may include imposition of air pollution control equipment or methods, a numeric emission limitation, or both. Each, however, must have the effect of limiting the quantity, rate or concentration of emissions of air pollutants. There is no requirement in Utah’s minor NSR program that BACT must result in a numeric emission limitation.”).

1.56 tpy of PM10 and 0.26 tpy of PM2.5. DAQ selects BACT to implement control technologies and/or operation standards on sources/emitting units based upon economic and technical feasibility. The BACT analysis the source submitted for the coal and ash material handling operations in section G.6 of the NOI as per R307-401-5 is the best available, regardless of economic feasibility, a point the commenter does not dispute. With regard to a defensible emission limitation, the DAQ established a BACT limit of 20% opacity in condition II.B.1.b in conjunction with condition II.B.3.b requiring specific configuration of operation. The definition of BACT specifically identifies a visible emissions limit as a potential limit. These conditions are consistent with the enforceability principles in EPA's 2002 Rule, and the commenter does not offer any evidence or recommendations for better controls or limits than what DAQ has required.

Monitoring, recordkeeping and reporting requirements as required by Title V regulations for major sources are not required for minor sources. Rules applicable to this source for coal handling include R307-401-8 (BACT), R307-107 (Breakdown Reporting), R307-165 (Emissions Testing), R307-201 (General Emissions Standards), R307-205 (Fugitive Emissions and Fugitive Dust), and 40 C.F.R. Pt. 60, Subparts A and Y. Nowhere in these rules is the type of MMR being requested by the commenter required. The BACT is enforceable by installation and proper operation of the control equipment and compliance with the opacity limit. In so much as DAQ inspectors have the ability to inspect this source 24 hours a day, 7 days a week, BACT for coal handling is enforceable.

The commenter also suggests the Director must estimate emissions from coal operations using a worst-case scenario. See response to Comments 4 and 19 addressing PTE and worst-case scenario.

No changes were made to the AO as a result of this comment.

#### **Comment 58: Environmental Coalition**

Page 17, ¶ 5; Page 18, ¶ 1 (footnotes omitted)

*“Moreover, as also explained elsewhere, without monitoring, recordkeeping and reporting requirements, the coal handling opacity ‘limits’ are not federally enforceable and cannot serve to limit PTE for the purposes of determining whether the plant is indeed a minor modification. Because PTE represents the maximum capacity of a source to pollute, the Director’s PTE must estimate emissions during the worst-case scenario, when coal handling operation is emitting the maximum PM10 it is capable of releasing while still complying with applicable federally and practically enforceable permit limitations. Here, where there are no monitoring, recordkeeping or reporting restrictions on the coal handling, the ‘emission limitation’ is not federally enforceable and does not limit PTE.”*

#### DAQ Response:

The commenter is suggesting that the DAQ is undercounting the PTE due to poor monitoring, recordkeeping and reporting requirements. The coal handling operation is limited by the proposed throughput limit in condition II.B.1.c(G). This operation has three proposed conditions limiting the PTE: (1) operation configuration proposed limit in condition II.B.3.b, (2) opacity proposed limit in condition II.B.1.b(F), and (3) coal throughput proposed in condition

II.B.1.c(G). In summary, the DAQ disagrees with the commenter that the monitoring, recordkeeping and reporting requirements are inadequate or are missing, and the commenter does not address these specific provisions in the proposed permit or otherwise explain in any meaningful way why such provisions are unenforceable. The commenter also suggests the Director must estimate emissions from coal operations using a worst-case scenario. *See* response to Comments 4 and 19 addressing PTE and worst-case scenario.

The commenter suggests that the DAQ cannot be certain that this source is properly classified as minor because the PTE may be higher due to DAQ not imposing federally enforceable monitoring, recordkeeping and reporting requirements on the coal handling opacity limits. There are several problems with this argument. First, to support their claim, the commenter cites the NSR Manual. *See* response to Comment 1 for an explanation of the status of the NSR Manual. Second, DAQ is confident that the AO properly accounted for PTE and subsequently classified this source as minor because it limits the coal handling operation's PTE by three proposed conditions: (1) operation configuration proposed limit in condition II.B.3.b;<sup>15</sup> (2) opacity proposed limit in condition II.B.1.b;<sup>16</sup> and (3) coal throughput proposed in condition II.B.1.c(G).<sup>17</sup> This facility is a listed source as defined in R307-101-2—a fuel conversion plant. In this instance, the DAQ has counted fugitive emissions in the PTE and is confident the PTE is properly characterized and is supported by enforceable conditions in the AO.

No changes were made to the AO as a result of this comment.

#### **Comment 59: Environmental Coalition**

Page 18, ¶ 4; page 19, ¶ 1 (footnote omitted)

*“ . . . South Coast Air Quality Management District (SCAQMD) Rule 1158 that governs the storage, handling and transport of coal. The purpose of Rule 1158 is ‘to reduce the emissions of airborne particulate matter from the storage, handling, and transport of . . . coal[.]’ . . . The California rule presents BACT, or at a minimum, the Director is required to address the rule in*

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<sup>15</sup> “The coal handling, radial stacker conveyor shall be covered and fugitive emissions shall be controlled by water sprays. The coal handling crushing, conveying and drop points shall be covered and controlled by a baghouse. [R307-401-8]” AO at 8.

<sup>16</sup> “Visible emissions from the following emission points shall not exceed the following values:

- A. Flare and combustor - no visible emissions
- B. Crusher - 15% opacity
- C. Coal Handling Baghouse - 10% opacity
- D. Ash Removal Baghouse - 10% opacity
- E. All natural gas/syngas operated equipment - 10% opacity
- F. Paved Haul Roads - 20% opacity
- F. All other points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40CFR 60, Appendix A, Method 9. [R307-401-8]” *Id.* at 15.

<sup>17</sup> “Consumption

G. 273,750 tons of coal per rolling 12 month total” *Id.*



*his BACT analysis. This is particular [sic] warranted because the Director's analysis of BACT of PM for the coal storage pile lacks any basis in the record."*

DAQ Response:

DAQ acknowledges rules from other states, as they can serve as possible control technologies to be evaluated for a particular proposal that the DAQ is reviewing. However, the commenter has not identified and DAQ is not aware of any Utah state or federal rule that requires the DAQ to consider a rule from another state as BACT for a minor source in Utah. The rules cited by the commenter are only applicable in the South Coast Air Quality Management District in California but are not applicable in Utah.

In Utah, R307-401-5(d) requires an analysis of BACT for the proposed source or modification. The definition of BACT is found in R307-401-2 and has been quoted in response to Comment 46. DAQ reviewed the BACT analysis submitted by the source. *See* NOI, Section G.6.2. The source indicated the coal pile will be subject to Standards of Performance for Coal Preparation and Processing Plants, 40 C.F.R. Pt. 60, Subpart Y. The source also identified water spray/surfactant, inherent moisture, and enclosures for dust controls. The source ruled out enclosures on active coal piles as being economically infeasible. The source will control the coal processing, conveying, transferring, loading, and storing as required by 40 C.F.R. § 60.254. In Section 60.254(c), a fugitive coal dust emissions control plan must be prepared (taking into consideration 40 CFR 60.254(c)(1) through (6)) and the source must operate in accordance with the fugitive coal dust emission control plan. DAQ determined BACT for the coal storage pile to be water sprays and conducting operations in compliance with the fugitive coal dust emission control plan as required by Section 60.254(c) and an opacity limitation of 20%. *See* Source Plan Review at 10. The DAQ included this requirement in proposed permit condition II.B.1.b.

No changes were made to the AO as a result of this comment.

**Comment 60: Environmental Coalition**

Page 20, ¶ 3 (footnote omitted)

*"There is nothing in the proposed AO that requires the coal to be moist or that requires monitoring of the moisture content of the coal. Similarly, there are no monitoring requirements for the use of the water sprays or the baghouses opacity limit. Yet, the Director relies on the 'high moisture content of the coal,' the use of water sprays and the opacity limit as a key components of his BACT. In the absence of the moisture requirement, along with associated monitoring, recordkeeping and reporting mandates, the Director has failed his BACT responsibilities. The measure does not meet the definition of BACT and there is nothing in the proposed permit to suggest that the Director has required the maximum reduction of emissions achievable at the plant. Similarly, without monitoring reporting and recordkeeping requirements, the water spraying and opacity limit are not BACT 'emission limitations' and are not federally-enforceable for the purposes of determining PTE. While he apparently purports to address the "material transfer operations," the Director's BACT review of this source of emissions is absent or unclear. BACT for transfer point involves the enclosure of the operations."*

DAQ Response:

The proposed emissions associated with the coal storage piles is 1.36 tpy of PM10. The comment does not acknowledge or dispute that Revolution Fuels used a moisture content of 10% in the calculations, which is typical and conservative for this type of operation. The coal handling operations are subject to the proposed permit condition II.B.3.b, “The coal handling, radial stacker conveyor shall be covered and fugitive emissions shall be controlled by water sprays. The coal handling crushing, conveying and drop points shall be covered and controlled by a baghouse.” Additionally, permit condition II.B.1.b(C) coal handling baghouse has a 10% opacity limitation. The coal handling operation is also subject to 40 C.F.R. § 60.250, which includes specific standards for this operation in Section 60.254. The BACT limit has been implemented through an opacity limitation on the baghouse and site, and not monitoring of moisture content.

See response to Comment 59 regarding the suggestion that the Director must consider other state rules in the BACT analysis.

No changes were made to the AO as a result of this comment.

## **Coal Storage Pile**

### **Comment 61: Environmental Coalition**

Page 17, ¶ 2

*“ . . . ITA significantly underestimated the particulate matter emissions from the coal storage pile because the ITA did not utilize wind speed data collected at nearby state-run air quality monitor in Price, Utah. Using the data from the local monitor would yield emissions that are 90% higher.”*

Exhibit A, Technical Comments, Pages 3-4, Megan Williams (footnotes omitted)

*“PM emissions from the coal storage pile could be higher in practice than what was modeled in the NOI. The Intent to Approve does not include any provisions specific to the coal storage pile in the fugitive emissions requirements in II.B.3. The key factors in determining fugitive dust emissions from storage piles include wind speed and size of the pile. The emissions inventory in the NOI assumes the highest daily mean wind speed is 20 miles per hour (mph), citing weatherpark.com. Yet wind speed data collected at the nearby state-run air quality monitor in Price, Utah has recorded maximum wind speeds of 38 mph, 32 mph and 34 mph in 2014, 2013 and 2012, respectively. Winds at this speed would result in estimated PM emissions that are 90% higher than what was modeled in the NOI. The DAQ must account for the potentially higher maximum wind speeds that could occur at the facility and include any additional control measures (e.g., covering, spraying, etc.), as needed, to ensure short-term PM impacts from the facility will not exceed the NAAQS.”*

DAQ Response:

The DAQ monitor in Carbon County has an average of 7 miles per hour wind speed. This is consistent with the average hourly wind speed recorded at the National Weather Service meteorological monitor at the Price airport of 7.3 miles per hour. Maximum recorded wind speeds are generally associated with wind gust, and are only sustainable over a short period of

time. Since the PM10 NAAQS is a 24-hour average concentration, using a maximum wind speed value from a monitor recorded over a few minutes would not be representative of emissions releases over the 24-hour period. The source used the highest daily mean wind speed from [weatherpark.com](http://weatherpark.com) of 20 miles per hour. Using the highest daily average wind speed value to estimate PM10 emissions is representative of the source's maximum potential to emit over the 24-hour period. Use of the maximum daily wind speed to estimate PM10 emissions is conservative by dispersion modeling standards, and results in an overly conservative estimate of model predicted 24-hour concentrations.

As a result, the DAQ made no changes to the PM10 NAAQS modeling analysis.

**Comment 62: Environmental Coalition**

Page 18, ¶ 1 (footnotes omitted)

*“There is no basis in the record for the Director’s assertion that that BACT for the coal storage pile is a 20% opacity limit and compliance with a yet-to-be-determined fugitive coal dust emission control plan. First, any purported reliance on NSPS Subpart Y to comply with BACT is inappropriate. As explained above, the national NSPS are not BACT, but rather represent ‘best demonstrated technology.’ Under Utah’s BACT Rule, NSPS represent the absolute floor for a BACT emission limitation and a starting point from which a search for the best available control technology may begin.”*

DAQ Response:

NSPS are federal standards established by EPA that undergo public comment and stakeholder process involving, among others, industry specialists. NSPS are regularly updated or superseded with new regulations to keep up with changing technology. These federal standards allow industry to understand the “minimum” control technology required for common operation/equipment while controlling a large amount of operations/equipment.

Control technologies applicable to coal storage piles, identified in NSPS Subpart Y, include locating the source inside a partial enclosure, installing and operating a water spray system, applying appropriate chemical dust suppression agents on the source, use of a wind barrier, compaction, or use of a vegetative cover. The rule indicates the owner or operator must select, for inclusion in the fugitive coal dust emissions control plan, the control measures that are most appropriate for site conditions. The Director is not aware of any additional control technologies that would be technologically and economically feasible for the Revolution Fuels coal storage piles that are not identified in this rule.

The DAQ has determined the Subpart Y meets BACT for Revolution Fuels, and that source compliance with the applicable provisions of Subpart Y is BACT for the coal handling operations. *See Source Plan Review, Review of Best Available Control Technology at 9-10.*

No changes were made to the AO as a result of this comment.

**Comment 63: Environmental Coalition**

Page 18, ¶ 2 (footnotes omitted); Page 19, ¶ 1

*“ . . . the Director asserts without any reference, analysis or citation that ‘enclosing storage piles can be an effective means to reduce wind erosion emissions enclosing stockpiles that are actively used is not feasible.’ Without a foundation in the record, this statement is not supported by substantial evidence and therefore may not serve as the basis for a legally adequate BACT determination.*

...

*The SCAQMD rule, inter alia,: 1) prohibits fugitive dust emissions for any period more than three minutes in one hour that is equal to or greater than 10% opacity, Rule 1158(d)(1); 2) requires that any coal storage pile be enclosed and equipped with water spray or other controls, Rule 1158(d)(2)(d); and, 3) mandates the paving of all surfaces where material accumulates. Rule 1158(d)(5). Material truck unloading will occur only in an enclosed structure that is vented control equipment or that is equipped with a water spray system. The California rule presents BACT, or at a minimum, the Director is required to address the rule in his BACT analysis. This is particular warranted because the Director’s analysis of BACT of PM for the coal storage pile lacks any basis in the record. In addition, the Director is compelled to consider in his BACT analysis for the coal storage pile SCAQMD Fugitive Dust Rule 403. The purpose of this rule is “to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.” This rule mandates, inter alia: 1) that an operator may not allow visible dust from an open storage pile to move beyond the property line of the emission source; and, 2) that PM10 levels may not increase by more than 50 micrograms per cubic meter as a result of its active operations.”*

DAQ Response:

Totally enclosing the storage piles for controlling fugitive PM10 emissions is not always feasible. The source must comply with 40 C.F.R. § 60.254, which regulates fugitive PM10 emissions from coal open storage piles. The source must submit a fugitive coal dust emissions control plan that must specify a control measure to minimize fugitive coal dust to the greatest extent practicable as per Section 60.254(c)(2). The BACT analysis submitted to DAQ as per UAC R307-401 in Appendix G 6.2 of the NOI determined that the cost associated of controlling 1.38 tpy of PM10 by enclosing the coal storage piles is economically infeasible. The commenter does not address this determination.

See response to Comment 59 regarding the suggestion that the Director must consider other state rules in the BACT analysis.

No changes were made to the AO as a result of this comment.

**Comment 64: Environmental Coalition**

Page 18, ¶ 4 (footnotes omitted)

*“The Director may not rely on a fugitive coal dust emission control plan that has yet to be completed as BACT. Initially, the Director must ensure that BACT has been derived and imposed*

*on the source before he may issue an AO. The Director may issue an AO only if he determines that the “degree of pollution control for emissions...is at least BACT.” In addition, the public is guaranteed the opportunity to comment on the proposed permit and to determine whether the Director has met his permitting responsibilities. Without the coal dust emission control plan to review and assess, the public is prevented from commenting on the proposed permit in a meaningful way and from evaluating the Director’s compliance with R307-401-8 in general, and his derivation and implementation of BACT.”*

DAQ Response:

The Director is relying on 40 C.F.R. § 60.254 as BACT for coal storage piles. The fugitive coal dust control plan is required to meet the requirements of 40 C.F.R. Pt. 60, Subpart Y.

No changes were made to the AO as a result of this comment.

## **Haul Roads**

### **Comment 65: Environmental Coalition**

Page 20, ¶¶ 1-2 (footnotes omitted)

*“There are several sources of BACT for the coal storage pile that the Director failed to review. SCAQMD Rule 1158 governs the storage, handling and transport of coal and requires, inter alia: 1) that all vehicle movement areas within the facility be paved, Rule 1158(d)(5); 2) the management of material so that silt loading values of 0.05 and 0.25 grams per meter square are not exceeded or the use of a street sweeper at designated intervals, Rule 1158(d)(7)(A) & (B).*

*Finally, Utah’s fugitive emissions rule, deemed to represent reasonably available control technology, represents a starting place from which the Director’s BACT analysis should begin. That rule requires fugitive emissions from roads be minimized to the maximum extent possible and mandates the “prompt” cleaning of any roads. The Director’s BACT must result in greater emission reductions than what is required by R307-309. However, there is nothing in the record to suggest that the 20% opacity limit reflects the maximum minimization of fugitive emissions or prompt cleaning of road surfaces as required by reasonably available control technology, much less greater emission reductions than R307-309.”*

DAQ Response:

See response to Comment 59 regarding the argument that the Director must consider other state rules in the BACT analysis.

The Director determined that BACT for haul roads for this source is paved roads and water sprays. This BACT meets or exceeds the controls required by the California rule as water sprays are more effective than sweeping for fugitive dust control on haul roads. Finally, the Director agrees that the Utah fugitive dust rule represents the starting place for BACT. However, the applicable rule is R307-205, rather than R307-309, which is only applicable in a nonattainment area. This source is located in an attainment area.

No changes were made to the AO as a result of this comment.

## **Comment 66: Environmental Coalition**

Page 17, ¶ 3

*“Additionally, the PM estimate for the paved haul roads did not consider the appropriate silt loading contribution or the application of anti-skid materials for frozen conditions. In fact, PM<sub>2.5</sub> emissions could be eight times greater than the ITA estimate.”*

Exhibit A, Technical Comments, Pages 4-5, Megan Williams (footnotes omitted)

*“Silt loading is a significant factor in determining fugitive dust emissions from truck travel over the paved areas of the facility and can vary widely. The silt loading of 0.2 grams per square meter (g/m<sup>2</sup>)<sup>20</sup> assumed in the NOI for the proposed facility falls on the very low end of the range of silt loading values that are the basis for the emissions estimates in EPA’s AP-42 compilation of emission factors, which range from 0.03 to 400 g/m<sup>2</sup> for surface material on paved roads. According to EPA, ‘the most important factors [that impact surface loading values] are: mean speed of vehicles traveling the road; the average daily traffic (ADT); the number of lanes and ADT per lane; the fraction of heavy vehicles (buses and trucks); and the presence/absence of curbs, storm sewers and parking lanes.’ EPA goes on to strongly recommend the use of site-specific silt loading data for public paved road estimates or, in the event site-specific data are not available, ‘an appropriate value for a paved public road may be selected from the values in Table 13.2.1-2....’ The mean silt loading values in Table 13.2.1-3 range from 1.1 to 292 g/m<sup>2</sup> (compared with 0.2 g/m<sup>2</sup> in the NOI inventory) and only two industries listed in Table 13.2.1-2 (Iron and steel production and Corn wet mills) include a range with the low end below 1 g/m<sup>2</sup>. And given the climate in the proposed facility location, the silt loading factor used to estimate emissions should consider a higher wintertime baseline if frozen precipitation results in the application of anti-skid material. EPA suggests an additional, temporary, silt loading contribution of 2 g/m<sup>2</sup> occurs with each application of antiskid abrasive for snow and ice control. At these levels, the silt loading factor is ten times higher than the value used to estimate emissions in the NOI. Based on the AP-42 equation used for estimating fugitive dust emissions from travel on paved roads, this would translate into a PM<sub>2.5</sub> emissions estimate that is over eight times greater.<sup>26</sup> Section II.B.3.c.1 of the Intent to Approve document states, ‘[t]he haul road shall be paved and shall be water flushed, sprayed clean or swept as dry conditions warrant or as determined necessary by the Director in order to meet the opacity requirement listed in this AO.’ The state should make these control measures an enforceable permit requirement with specified frequency and recordkeeping requirements, as opposed to discretionary measures, given the uncertainties with the PM estimates from this source and the corresponding concerns with the PM impact analysis in the NOI.”*

### DAQ Response:

The comment addresses PM estimated emissions and factors used in the emissions estimate. The silt loading value of the 0.2 grams per square meters is still within the range of silt loading. Using this factor, the emissions associated with the paved haul roads are 0.07 tons per year of PM<sub>10</sub> and 0.02 tons per year of PM<sub>2.5</sub>. If the emissions estimates were underestimated by a factor of 8 (as the commenter claims but does not provide any evidence), the emissions would be 0.56 tons per year of PM<sub>10</sub> and 0.16 tons per year of PM<sub>2.5</sub> (a difference of 0.49 tons per year of PM<sub>10</sub> and 0.14 tons per year of PM<sub>2.5</sub>). These higher values still would not have triggered a classification change or a change in BACT analysis. Most importantly, assuming that the source should have used a higher silt loading factor and arrived at higher potential emissions, the most

stringent control was selected as BACT for the haul roads. The source is paving all roads and is required to water flush, spray clean, or sweep as dry conditions warrant, which was implemented through the BACT analysis and required by the permit condition II.B.3.c. The applicable rules do not require DAQ to address emissions from anti-skid materials for frozen conditions. There is no basis for imposing additional controls because the source is already applying the most stringent control and the commenter does not identify any such requirement.

See response to Comment 37 regarding recordkeeping requirements.

No changes were made to the AO as a result of this comment.

**Comment 67: Environmental Coalition**

Page 19, ¶ 4 (footnotes omitted)

*“There is no basis in the record for the Director’s contention that BACT for the haul roads is a 20% opacity limit. The Director makes this statement without any reference, analysis or citation. This is inadequate to meet the requirements of Utah’s BACT Rule. A statement that is not supported by substantial evidence may not serve as the basis for a legally adequate BACT determination.”*

DAQ Response:

DAQ disagrees with the contention that there is no analysis or evidence for the BACT determination for the haul roads. DAQ has reviewed the following potential technologies for controlling fugitive PM10 emissions from haul roads: (1) water spray & paving, (2) surfactant spray, (3) water spray, and (4) paving. See Source Plan Review at 9. Water spray and paving provides the highest level of control of PM10 emissions. All roads on site are paved to control fugitive emissions.

Paving and watering is the most stringent control technology that can be applied to reduce haul road fugitive PM10 emissions. In this case, the opacity limitation does not control the emissions but serves as the compliance point to measure the effectiveness of the paving and washing. The source has elected to pave and water the haul roads as per proposed condition II.B.3.c and a BACT limit of 20% opacity in the proposed condition II.B.1.b(F).

No changes were made to the AO as a result of this comment.

**Comment 68: Environmental Coalition**

Exhibit A, Technical Comments, Page 5, ¶ 2, Megan Williams (footnote omitted)

*“There are no permit requirements associated with the number of haul trips. The emissions inventory in the NOI assumes two roundtrip miles per hour. Without a specific permit limit on haul trips the state should ensure the assumed VMT rate reflects the maximum potential short-term PM emissions that could occur from travel on the haul road.”*

DAQ Response:

There is no limit required for VMT since there is a coal limit defined in condition II.B.1.c. The location of the coal hopper is expected to be constant and the capacity of the coal truck is constant at 44 tons per truck. See NOI at 2-5.

No changes were made to the AO as a result of this comment.

## **Ponds**

### **Comment 69: Environmental Coalition**

Page 10, ¶ 4 (footnote omitted)

*“As discussed in the technical comments, the proposed facility plot plan in the ITA identifies a large evaporation pond, however the ITA does not consider emissions from this large pond, the smaller pond or a laydown yard. The Director submitted this same question to the applicant yet there is no discussion of why such emissions were not accounted for in the ITA. The ponds can be significant sources of VOC and HAP emissions and as such, the Director must consider those emissions and perform a BACT analysis, include the emissions in the dispersion analysis and limit the emissions with enforceable conditions in the Approval Order.”*

#### **DAQ Response:**

When the DAQ questioned the source on these ponds, DAQ was informed by letter dated July 21, 2015, that the ponds were to be used as pre-treatment settling ponds, receiving water from Price City Water and Sewer Department, and holding ponds for Revolution Fuels’ water treatment plant. Because these ponds do not hold process waste water, no emissions are expected, and no further analysis is required under R307-401. The laydown yard is to be used during construction to store construction material with no emissions.

No changes were made to the AO as a result of this comment.

## **Ash Handling**

### **Comment 70: Environmental Coalition**

Page 20, ¶ 4; page 21, ¶ 1 (footnote omitted)

*“The Director mentions a ‘storage bin’ for ash, but fails to clarify if it is enclosed or not. If not, our comments related to the necessity of enclosing a transfer point apply to that bin. As he does with other aspects of coal handling, the Director fails to impose any monitoring, recordkeeping or reporting requirements on ash handling. Therefore, the opacity limit does not meet the definition of BACT and there is nothing in the proposed permit to suggest that the Director has required the maximum reduction of emissions achievable at the plant. Similarly, without monitoring reporting and recordkeeping requirements, the opacity limit is not federally-enforceable for the purposes of determining PTE.”*

#### **DAQ Response:**

A description of the ash management can be found on page 2.3 of the NOI and page 4 and reviewer comment 9 on pages 23 and 24 of the Source Plan Review. The conveyor will be covered and use a baghouse to control particulates. The vibrating conveyor cools the ash and transports it into an enclosed silo. The conveyor is enclosed and uses a baghouse to control particulates. Ash is transferred from the silo through an enclosed auger into pneumatic trucks to be hauled offsite. The ash removal process does not have a storage bin, but a silo controlled by the ash baghouse. The provisions governing ash handling are found in conditions II.B.1.b(D)



and II.B.3.a of the proposed AO, and the commenter does not explain how these provisions are unenforceable.

See response to Comment 37 regarding recordkeeping requirements.

No changes were made to the AO as a result of this comment.

## **Startup/ Shutdown and Upset/Breakdown/Emergency**

### **Comment 71: Environmental Coalition**

Page 10, ¶ 5 (footnotes omitted)

*“All emissions from the flare, including during startup, shutdown and malfunction (SSM) events must be included in the project’s emissions estimate. Utah regulations define Potential to Emit (PTE) as ‘the maximum capacity of a stationary source to emit a pollutant under its physical and operational design.’ ‘The definition of ‘potential to emit’ under the new source regulations is extremely important.’ Failure to properly estimate all of a facility’s emissions is a violation of law.’”*

#### DAQ Response:

DAQ requires sources to estimate potential to emit emissions based upon normal operations. Where startup/shutdown emissions can be reasonably estimated they are included in the source-wide PTE.

Upset/Breakdown/Emergency emissions cannot be calculated or reasonably estimated and are never included in the PTE. See Holly Order at 40; 44-46. To control startup/shutdown emissions appropriately, the DAQ has taken two approaches. Where technically feasible, the DAQ will establish separate emission limits that are only applicable during startup/shutdown or will evaluate source operations to estimate the number of startup/shutdown events to occur on an annual basis. For this permit, a condition will be added limiting the source to four startups and four shutdowns a year. The emissions from the startups and shutdowns have been included in the potential to emit of the facility and did not change the classification of the source or trigger any additional modeling.

The flare will be used during upset/breakdown/emergency situations and purging during startups and shutdowns. Upset/Breakdown/Emergency situations are not quantifiable from a permitting standpoint, and not classified as normal operations and shall be covered under R307-107.

The commenter cites several sources in support of its comment. First, the commenter relies on the Riva Memo, an EPA document that the commenter argues requires that malfunction emissions be included in PTE calculations. The Riva Memo was a response from EPA to a state permitting agency that made an inquiry regarding PTE for emergency generators, not a coal-to-liquids facility. However, EPA answered broadly, apparently not tying its answer to any particular type of source but to calculation of PTE generally. In the memo, EPA states that it has no policy that requires exclusion of emergency or malfunction emissions. Despite having no policy, EPA (without citing any authority) then states that “to determine PTE, a source must estimate its emissions based on the worst-case scenario taking into account startups, shutdowns

and malfunctions.” Ex. E, Riva Memo at 1-2 (attached to Environmental Coalition comments). If not on policy grounds, it is unclear on what authority EPA based this statement, as it does not cite the CAA, applicable statutes or regulations, cases, or any administrative decisions. As such, EPA seems to base its answer on undocumented discussions with OAQPS and OECA.

The Riva Memo seems to acknowledge that use of enforcement discretion would be appropriate for upset conditions, at least for the amount of upsets beyond those assumed upsets factored into the PTE in the first place. *Id.* at 2. But in practical terms, for any source upset conditions are always unknown, and can only ever be an estimate. Relying as it is on nothing more than internal discussions and not characterizing itself as a policy pronouncement, the Riva Memo carries little weight and does not overcome DAQ’s stated decision that malfunction emissions, being unpredictable and thus unable to be estimated, are not included in PTE. *See Holly Order* at 40; 44-46.

Second, the commenter relies on EPA Region 8 comments on a Wyoming coal-to-liquids facility. However, EPA’s comments appear to apply only to startups. In this case, both startups and shutdowns are included in the PTE. Therefore, these EPA comments do not appear to contradict anything in the ITA. Moreover, EPA claims that “the regulations do not provide exemptions for excluding startup emissions from a facility’s Potential To Emit (PTE).” Ex. F, EPA Region 8 Comments to WYDEQ at 1 (attached to Environmental Coalition comments). However, EPA Region 8 does not explain to which regulations it refers.

Third, the commenter relies on *In re Masonite Corp.*, 5 E.A.D. 551, 1994 WL 615380 (E.P.A. 1994), raised in the context of PTE for the flare. *See Environmental Coalition comments* at 11, n.63. The commenter says two things: (1) “the Environmental Appeals Board remanded a PSD permit because the EPA failed to consider all emissions of particulate matter related to a modification of a paneling and siding facility. The EPA erred by not counting increases in fugitive emission of PM10 from the handling of wood chips at the facility, and the EAB ‘therefore remanded this issue to the Region to reconsider its determination that there was not a significant net increase of PM10’”; and (2) “[a]ssessing the net emissions increase from a major modification is akin to estimating the potential to emit from a new source; the estimate determines whether or not a BACT analysis must be performed.” *Id.* at 11-12.

The commenter misconstrues and thus misapplies *In re Masonite* to this proposed permitting action. The EAB stated that a remand was necessary because EPA Region 9 had “confused two distinct inquiries, which are subject to different standards.” *In re Masonite*, 1994 WL 615380, at \*18. Specifically, Region 9 had confused a “threshold applicability determination” with a “pollutant applicability determination.” *Id.*, at \*18-19. EAB stated that the first determination is whether a given increase in emissions of a regulated pollutant is major or minor. *See id.*, at \*19. Once determined, a second, distinct inquiry is necessary to determine which pollutants are subject to a BACT analysis. *See id.* EAB determined that fugitive emissions are not included in the former, but are considered in the latter. *See id.*

There are a number of fundamental distinctions between *In re Masonite* and the Revolution Fuels’ proposal. *In re Masonite* deals specifically with fugitive emissions, not malfunction emissions. In *In re Masonite*, EAB pointed to specific regulations that omitted fugitive

emissions from the threshold applicability determination. *See id.*, at \*19. In this case, the commenter points to no regulation stating that malfunction emissions must be either included or excluded from a threshold applicability determination.

In any event, even if the fugitive emissions in *In re Masonite* were directly analogous to the malfunction emissions in the Revolution Fuels proposal,<sup>18</sup> *In re Masonite* contradicts the commenter's claim that the malfunction emissions must be included in the PTE calculation. Specifically, the EAB in *In re Masonite* pointed out that under 40 C.F.R. § 52.21(i)(4)(vii),<sup>19</sup> the PSD requirements do not apply if "the modification would be a . . . major modification only if fugitive emissions, to the extent quantifiable, are considered in calculating the potential to emit of the . . . modification and the source does not belong to any of [a specified set of industry] categories . . ."). EAB pointed out that in *In re Masonite*,

all parties agree that the addition of the MPL will result in a significant net emissions increase of VOCs (and therefore a significant net emissions increase of ozone) without counting fugitive emissions of VOCs. Thus, there is no question that the addition of the MPL constitutes a major modification of the source.

*Id.* at \*19. In this case, Table 3.1 of the NOI shows that even excluding malfunction emissions, Revolution Fuels project would not be a major source. The commenters do not address this table, and in fact, do not address the threshold applicability determination at all, which is the only instance where this question would even be at issue.

In addition, fugitive emissions occur during normal operation, whereas malfunction emissions only occur during upset conditions. This further dilutes the commenter's effort to compare the two. The *In re Masonite* case also dealt with a major source, while the proposed action here is for a minor source.

The second inquiry discussed by EAB in *In re Masonite* relates to the inclusion of fugitive emissions in a BACT analysis in the separate pollutant applicability determination. *See id.*, at \*18-19. EAB stated that, based on the cited federal regulations, "once the Region determined that the addition of the MPL constituted a major modification on the basis of non-fugitive VOC emissions, the Region was required to count fugitive emissions (if quantifiable) of any other regulated pollutant when determining whether a BACT analysis was required for such pollutant." *Id.* Accordingly, EAB concluded "that the Region erred in not counting increases in fugitive emissions of PM10 that may have occurred or will occur from the handling of wood chips at the facility as a result of the major modification," and remanded the case so that EPA could "reconsider its determination that there was not a significant net emissions increase of PM10." *Id.* The critical point here is that in *In re Masonite*, EPA's error was in failing to acknowledge

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<sup>18</sup> Fugitive emissions and malfunction emissions are not analogous. Fugitive emissions occur during normal operation, whereas malfunction emissions only occur during upset conditions.

<sup>19</sup> The fact that *Masonite* addressed 40 C.F.R. § 52.21(i)(4)(vii) is another distinction. This regulation has no application here, as explained in Response to Comment 16.

that a significant net emissions increase had occurred such that a BACT analysis was required for PM10 once fugitive emissions were taken into account, *id.*, not that fugitive emissions had been excluded from the initial PTE determination under the threshold applicability analysis to determine whether the project was major or minor.

In this case, the commenter claims that malfunction emissions must be included in the PTE calculation but provides no analysis of *In re Masonite* other than the brief statement that “[a]ssessing the net emissions increase from a major modification is akin to estimating the potential to emit from a new source; the estimate determines whether or not a BACT analysis must be performed.” Environmental Coalition comments at 11, n.63. The comment does not explain how this statement applies to the comment it makes.

Regardless of the commenter’s misapplication of *In re Masonite*, the Executive Director of the Utah Department of Environmental Quality has already determined that PTE calculations do not include malfunction emissions, which the commenter does not address.

Fourth, the commenter relies on *In re BP Products North America, Inc.*, Order Responding to Petitioner’s Request that the Administrator Object to Issuance of State Operating Permit, Permit No. 089-254880—453 (Oct. 16, 2009) at 6 (hereafter *In re BP Products*), where EPA pointed out that the Indiana SIP “provides that the baseline actual emissions for a modification must include emissions associated with malfunctions, to the extent they are affected by the project.” In this case, the commenter points to no similar provision of the Utah SIP.

Aside from the fact that the commenter cannot point to an analogous provision of Utah law that requires the inclusion of malfunction emissions in PTE calculations (or at least confront previous UDEQ determinations holding to the contrary), there is also a crucial factual distinction present in *In re BP Products*. In that case, the design of the facility would use a recirculation system to reroute excess gas back through the refining process,” *id.*, which would reduce the frequency or amount of flaring at the existing flares. As a result, the permitting authority concluded that using the recirculation system constituted normal operation and did not require a limit on malfunction emissions. *Id.*

However, EPA determined that in some instances, BP would be allowed “to bypass the new flares if they are unavailable and to go directly to the existing flares” during emergencies or flare outages. *Id.* EPA determined that such use of existing flares might qualify as a malfunction. *Id.* EPA decided that even though the permitting authority had intended to “prohibit all emissions from the new and existing flares, including during periods of start-up, shut-down, and malfunctions, to obviate the need to account for such emissions in the potential to emit (PTE) calculation,” it had not placed a legally and practically enforceable prohibition on such emissions. EPA concluded that the permitting authority had to include such a prohibition on those emissions, or “follow any other approach to address flaring emissions during periods of start-up, shut-down, and malfunctions that is consistent with its nonattainment new source review (NNSR) and Prevention of Significant Deterioration) rules.” *Id.*, at \*7.

EPA based its decision on a provision of Indiana’s SIP that required that the “calculation of baseline actual emissions for a modification must include emissions associated with

malfunctions, to the extent they are affected by the project.” *Id.*, at \*6. In this case, commenter has not pointed to any such requirement in the Utah SIP, nor is the proposed project a modification of an existing source, as was the case in *In re BP Products*. It may be that Indiana has opted to require inclusion of malfunction emissions in its SIP, but the commenter points to no such requirement in Utah. Moreover, as explained earlier, the DEQ has already determined that malfunction emissions need not be included in PTE calculations, and such an approach is therefore consistent with Utah’s NSR rules, in this case for a new (as opposed to modified) minor source that is by definition not subject to NNSR or PSD review. The commenter addresses none of these considerations.

No changes were made to the AO as a result of this comment.

## **CO2e Emissions**

### **Comment 72a: Environmental Coalition**

Page 21, ¶ 2

*“The Director failed to consider the significant expected greenhouse gas emissions from the proposed Wellington coal project. The project is estimated to emit almost 300,000 tons per year of CO2e. Yet neither the Applicant nor the Director evaluated the technical and economic feasibility of a carbon capture (and injection) system and possible transport and storage opportunities. Instead, the project intends to simply vent the CO2 to the atmosphere.”*

### **Comment 72b: UPHE**

Page 5, ¶ 3

*“It is evident from the EPA’s diagram that if CTL without carbon sequestration were to become a widely-adopted technology it would become an environmental nightmare. It would reverse the recent progress that our economy has been making in transitioning away from dirty to clean forms of energy. In deciding whether to approve Revolution’s permit, DAQ needs to recognize that this project would be a net economic liability for Utah.”*

### **Comment 72c: UPHE**

Page 25, ¶ 5

*“Approving Revolution Fuel’s CTL project will hasten climate change. It is a hollow argument if DAQ dismisses this consideration because compared to all other climate forcing activities the additional impact of this project will be small. Obviously we must reduce CO2 emissions across the board, not add to them, even in small amounts.”*

### **Comment 72d: Individual Commenter Richard Kanner**

*“After the recent Paris agreement was reached we now have an obligation to reduce global greenhouse gas emissions. Thus, it looks very bad for Utah to permit a new facility that will emit nearly 300,000 tons of CO2. Revolution Fuels must find a way to produce this liquid without emitting that CO2 before this project is permitted.”*

**Comment 72e: Individual Commenter Hans Ehrbar**

1/10/2016 Email

*“Therefore I would be interested in the answers to the following questions: (1) Why is Revolution Fuels not capturing this CO2 and either storing it or selling it? (2) Does Revolution Fuels have plans to add such a facility later? (3) Did Revolution Fuels design the layout of its plant so that it is possible to add a CCS facility later?”*

DAQ Response:

None of the comments acknowledge that on June 3, 2010, the EPA finalized Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule (tailoring rule), which included CO2e regulations to be implemented by approved air regulatory programs to control CO2e emissions through the permitting process. *See* 75 Fed. Reg. 31514-01 (June 3, 2010). In 2014, the Supreme Court struck down parts of the tailoring rule. *See Utility Air Regulatory Group v. EPA*, 134 S.Ct. 2427 (2014). The Supreme Court retained regulations allowing the EPA to control CO2e emissions from New Source Review PSD sources. *See id.*, 134 S. Ct. at 2432. New Source Review PSD sources are defined as (1) sources listed in R307-101-2 exceeding 100 tons per year of any regulated pollutants under the Clean Air Act (see response to comment 19) (2) non-listed sources exceeding 250 tons per year of any regulated pollutants. 42 U.S.C. § 7479. Revolution Fuels is classified as a minor source and there is no existing regulatory authority to control emissions of CO2e for minor sources, and the commenters do not identify any. Consequently, there is no regulatory requirement to evaluate the various methods of controlling CO2 emissions suggested by the commenters.

No changes were made to the AO as a result of this comment.

**Comment 73: Individual Commenter Hans Ehrbar**

1/9/2016 Email

*“The report says that 295445 tons of CO2e are emitted per year. What is the breakdown into the different greenhouse gases . . .”*

DAQ Response:

The greenhouse gases being emitted from the source are CO2 emissions resulting from the combustion of the natural gas in the gasification and pyrolysis burners.

No changes were made to the AO as a result of this comment.

**Comment 74a: UPHE**

Pages 25-44

The commenter discusses the impacts of global warming on the Great Basin and social costs of those impacts if Utah continues to rely on carbon.

**Comment 74b: UPHE**

Pages 44-68

The Commenter discusses impacts of rising CO<sub>2</sub> on public health in Utah.

DAQ Response:

The comments are noted but no changes are made to the AO. As DAQ explained in response to Comments 6a through 6d, its responsibility is to ensure that the project meets all applicable requirements for pollution prevention and control. None of the laws and regulations governing permitting gives DAQ the authority to make what is essentially a policy decision to reject the projects that rely on carbon for producing energy because it is an inferior method of energy production, as the commenter suggests.

Moreover, Revolution Fuels is not an NSR PSD source as defined in 42 U.S.C. § 7479, and therefore is not subject to any existing controls for CO<sub>2</sub>e emissions. See also response to Comments 72a through 72e.

## **Stack Testing Frequency**

### **Comment 75a: WRA**

Page 3, ¶ 2

*“The proposed AO does not include any requirements for continuous emissions monitoring (CEMS) or similarly robust emissions monitoring. Rather, the proposed AO only requires stack testing for NO<sub>x</sub> and CO, with a compliance test to be completed ‘at least annually’ subsequent to an initial compliance test. See DAQE-IN154900001-15 at II.B.2.a.1. For the reasons articulated below, this infrequent stack testing requirement is legally and practically insufficient to demonstrate continuous compliance with emission limitations.”*

### **Comment 75b: WRA**

Page 6

*“Yearly stack tests are insufficient to demonstrate that the requirement to limit emissions ‘on a continuous basis’ or to show continuous compliance with an emission limitation has been met, and thus cannot show compliance with the emission limitations imposed in the AO. 42 U.S.C. §7602(k). Proper enforcement of the emission limitations and demonstration of compliance require continuous emissions monitoring or, at a minimum, some demonstration of continuous compliance.”*

DAQ Response:

This source is a minor source with the PTE below 100 tpy of criteria pollutants. A yearly stack test is sufficient to demonstrate compliance with an emission limit because in this case. Condition II.B.2.a.1 requires not only initial compliance testing, but also a minimum of an annual stack test. DAQ can also require testing at any time. This condition also requires the source to notify the Director of testing dates and use a testing protocol approved by the Director. The Director can then accept or reject the testing data after a validation of the completeness and quality of the data is completed. As a result of these permit requirements, the quality of the data from stack testing is known and an annual test is sufficient to verify emissions from the source. The commenter offers no explanation as to why this condition is insufficient to ensure continuous compliance and enforcement.

The source’s classification does not warrant continuous emissions monitoring. Section 7602(k) provides the same definition for both emission limitation and emission standard. See 42 U.S.C.

§ 7602(k) (footnote omitted) (“The terms ‘emission limitation’ and ‘emission standard’ mean a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under this chapter.”) This definition does not require continuous monitoring of an imposed limit but instead requires that a limit is never exceeded on a continuous basis. The Gasification Flue Gas Exhaust stack is the venting for the selective catalytic reduction (pollution control device) after having the routed exhaust from the gasification and pyrolysis burners. All equipment is designed to run optimally with manufacturer’s guarantee. Operating the equipment as it is not intended would void warranties and become costly to replace.

DAQ determined that CEMS is not warranted due to the high cost of purchasing and operating CEMS for a minor source of emissions. DAQ historically has required annual stack testing on sources that are within 20 tpy of an emission threshold value. In this case, Revolution Fuels is within 20 tpy of 100 tpy of any criteria pollutant. The threshold for a major listed source is 100 tpy. The DAQ is requiring the source to conduct annual testing for NOx and CO (Condition II.B.2.a.1). There is no state or federal rule requiring the source to test or monitor more frequently.

No changes were made to the AO as a result of this comment.

**Comment 76: WRA**

Page 6, ¶¶ 4-6; Page 7, ¶ 1

*“Furthermore, the proposed AO’s annual stack testing requirement renders any limitations the AO imposes on emissions from the Reaction Chamber/ Pyrolysis Vessel federally and practically unenforceable. Federal enforceability requires practical enforceability. EPA NSR Workshop Manual II.B.2 at A.5. The EPA has stated*

*that [p]ractical enforceability means the source and/or enforcement authority must be able to show continual compliance (or noncompliance) with each limitation or requirement. In other words, adequate testing, monitoring, and record-keeping procedures must be included either in an applicable federally issued permit, or in the applicable federally approved SIP or the permit issued under the same.*

*Id. Neither the source (Revolution Fuels) nor the enforcement authority (the Director) is able to show continual compliance or noncompliance with the proposed AO’s requirement that emissions from the Gasification Flue Gas Exhaust Stack not exceed 3.67 lb/hr of NOx or 14.68 lb/hr of CO, DAQE-IN154900001-15 at II.B.2.a, because the only monitoring requirement for this limitation is that a stack test be performed ‘at least annually subsequent to the initial compliance test.’ DAQE-IN154900001-15 at II.B.2.a.1. There are not ‘adequate testing, monitoring, and record-keeping procedures’ to show continual compliance as required by EPA NSR Workshop Manual II.B.2 at A.5.”*



DAQ Response:

Improperly relying on the NSR Manual as a requirement, the commenter suggests that an annual stack test and a yearly limit are insufficient to demonstrate continual compliance with the NO<sub>x</sub> and CO emissions from Reaction Chamber/Pyrolysis Vessel. *See* response to Comment 1 for an explanation of the status of the NSR Manual.

DAQ establishes the testing frequency and the limits based on the source's PTE and subsequent classification as either major or minor source. Revolution Fuels is a minor source, where potential to emit of all criteria pollutants is below 100 tpy. In these circumstances, a yearly limit is sufficient, which the facility may never exceed on a continuous basis.

The uncontrolled potential to emit NO<sub>x</sub> emissions and the potential to emit CO emissions are within 20 tpy of reclassifying this source a major source. DAQ's consistent practice is to impose annual stack testing because of the low emissions, where the cost of monitoring and testing on a more frequent basis exceeds the benefits of frequent tests. There are no state or federal requirements that impose a different testing schedule on these pollutants where PTE is this low, and the EPA NSR Manual, relied upon by the commenter, does not impose any such requirements.

*See* response to Comment 75a and 75b regarding DAQ oversight of emissions testing procedures. Condition II.B.2.a.1. requires not only initial compliance testing, but also a minimum of an annual stack test. DAQ can also require testing at any time. All testing data will be reviewed by DAQ. Additionally, DAQ's current testing schedules and procedures are very effective in ensuring compliance. The Division's data from 2012 through 2014 shows compliance rates for major and minor sources ranging from 96.1% in 2014 to 97.1% in 2013. Testing frequency is a case-by-case analysis, accounting for the specific emission unit, controls, emission rate, and other relevant considerations at a particular facility. Current testing and monitoring requirements establish more than just compliance or non-compliance—they establish operating parameters, including temperature, feed rate, etc. These parameters are then observed by the DAQ during the interim between the required testing as surrogates to determine compliance or non-compliance with the emission limitations. Changes in certain parameters indicate changes in emission rates. Thus, the DAQ continuously oversees the sources in the interim between the required tests.

No changes were made to the AO as a result of this comment.

**Comment 77: WRA**

Page3, ¶ 3

*“First, as the NOI admits, ‘emissions from the pyrolysis and gasification burner systems include NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, SO<sub>2</sub> and VOCs.’ Appendix G-1. Yet the proposed AO lacks any emission limitation, much less monitoring, reporting or recordkeeping requirements for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and VOCs. Yet the proposed AO lacks any emission limitation, much less monitoring, reporting or recordkeeping requirements for NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, SO<sub>2</sub> and VOCs from the auxiliary boiler. The natural gas fired process heaters will emit NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, SO<sub>2</sub> and VOCs. Appendix G-5. Yet there are no emission limitations, monitoring,*

*reporting or recordkeeping requirements for NOX, PM10, PM2.5, CO, SO2 and VOCs from the process heaters.”*

DAQ Response:

Revolution Fuels is a minor source with the PTE below 100 tpy of criteria pollutants. There are emission limits for NOx and CO (AO Condition II.B.2.a) as these are the pollutants with the highest PTEs. There are no requirements for testing of all pollutants.

There are many sources where limits are imposed only on a single pollutant rather than on the collection of all pollutants. This is an engineering-based decision following an engineering analysis conducted on that source. For sources operating with a clean fuel the only pollutants of concern (potential for high concentration) would be NOx and CO. Clean fuel sources have very little in the way of direct PM or SO2 (or VOC) emissions, as demonstrated in the PTE for this source. Imposing a limit on either PM or SO2 emissions (or for that matter on VOC emissions) gains nothing, since no additional control technology was required to limit those emissions (*see* the BACT analysis).

DAQ considers NOx and CO to be critical pollutants from this gas fired burner system. The PM10, PM2.5, SOx and VOCs emissions are not within 20 tpy of changing the classification of the source. There is no state or federal rule requiring the source to set emissions limits for every pollutant and the DAQ does not believe an emission limit is useful for these low-level emissions.

No changes were made to the AO as a result of this comment.

**Comment 78: WRA**

Page3, ¶ 3 (footnote omitted)

*“ . . . the proposed AO lacks any emission limitation, much less monitoring, reporting or recordkeeping requirements for NOX, PM10, PM2.5, CO, SO2 and VOCs from the auxiliary boiler. The natural gas fired process heaters will emit NOX, PM10, PM2.5, CO, SO2 and VOCs. Appendix G-5. Yet there are no emission limitations, monitoring, reporting or recordkeeping requirements for NOX, PM10, PM2.5, CO, SO2 and VOCs from the process heaters.”*

DAQ Response:

*See* response to Comment 77. The auxiliary boiler’s and process heaters’ combined emissions do not exceed the levels that define this proposed project as a minor source per R307-401-9. The auxiliary boiler has a 500 hour operational limitation in condition II.B.1.f., which limits all pollutants. The NOx, PM10, PM2.5, CO, SO2 and VOCs emissions from the process heaters are not within 20 tpy of changing the classification of the source. There is no state or federal rule requiring the source to set emissions limits for every pollutant and the DAQ does not believe an emission limit is useful for these low-level emissions.

No changes were made to the AO as a result of this comment.

## **New Source Performance Standards**

### **Comment 79: WRA**

Page 5, ¶ 2

*“The AO indicates that NSPS (Part 60), Subpart Y: Standards of Performance for Coal Preparation and Processing Plants applies to the project. DAQE-IN154900001-15 Section III: Applicable Federal Requirements. Subpart Y includes, and the AO must satisfy, each of the following: 40 C.F.R. § 60.255 Performance tests and other compliance requirements; 40 C.F.R. § 60.256 Continuous monitoring requirements; 40 C.F.R. § 60.258: Reporting and Recordkeeping. These provisions include various monitoring and reporting requirements, including requirements to monitor leak detection systems, certify monthly that the fugitive coal dust emissions control plan was implemented as described, and monitor wet scrubber performance. See 40 C.F.R. § 60.258. Any satisfactory AO must include provisions for meeting these monitoring and recordkeeping requirements. Continuous emission monitoring may play a major role in the satisfaction of these requirements, and the current requirements of the proposed AO likely do not satisfy many of the requirements, which often require monitoring and reporting more frequently than the proposed AO’s yearly stack test requirement.”*

*The AO also indicates that NSPS (Part 60), Subpart III: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines applies to the project. DAQEIN154900001-15 Section III: Applicable Federal Requirements. Subpart III includes, and the AO must satisfy, each of the following: 40 C.F.R. § 60.4214 Notification, Reports, and Records for Owners and Operators; Table 8 to Subpart III of Part 60 Applicability of General Provisions to Subpart III (indicating that 40 C.F.R. § 60.13 Monitoring Requirements applies to Subpart III). Any satisfactory AO must include provisions for meeting these monitoring and recordkeeping requirements. Continuous emission monitoring may play a major role in the satisfaction of these requirements, and the current requirements of the proposed AO likely do not satisfy many of the requirements.”*

#### **DAQ Response:**

DAQ NSR permits incorporate federal requirements by reference. Including federal requirements in the AO could lead to possible documentation conflicts when federal requirements are updated and minor NSR permits that are not updated. The source is subject to 40 CFR 60, NSPS Subpart A, Dc, Y and III along with 40 CFR 63, MACT Subpart A and ZZZZ.

No changes were made to the AO as a result of this comment.

## **National Ambient Air Quality Standards**

### **Comment 80: WRA**

Page 8, ¶ 2

*“. . . lack of any enforceable emission limits for NOx and CO – and for PM10, PM2.5, SO2 and VOCs – makes it impossible to know whether the project will cause Carbon County to become a nonattainment area for the relevant NAAQS. Without monitoring, recordkeeping and reporting*

*requirements sufficient to show continuous compliance with proposed AO emission limitations, the Director cannot guarantee that the plant will not cause or contribute to a violation of the short-term NAAQS. Utah Admin. Code R307-401-8(1)(b)(vii); 42 USC § 7410(a)(2)(C) (requiring a minor source permitting program as necessary to protect NAAQS). In the absence of a showing that the emission limitation will be met and is enforceable, the Director may not assume compliance for the purposes of Rule 307-401-8.”*

DAQ Response:

All emissions were estimated for normal operations as per R307-401. All estimated emissions were reviewed to determine whether levels would trigger the impact analysis in R307-410-4. Emissions that did trigger an analysis were evaluated and determined that the increase would not cause a violation of the 24-hour and annual NAAQS for PM and NOx.

No changes were made to the AO as a result of this comment.

**Comment 81: Individual Commenter Cindy King**

Page 2, ¶ 2 (footnote omitted)

*“The Federal air pollution control requirements of owners and operators of MACT sources to write and put into use a Startup, Shutdown and Malfunction Plan.”*

DAQ Response:

The startup, shutdown and malfunction plan is only required for HAP major source as defined in 40 C.F.R. § 63.2 as per section 40 C.F.R. § 63.6(a), Applicability(2), and the proposed project is not a HAP major source as defined under those regulations.

No changes were made to the AO as a result of this comment.