



Air Quality Permitting Response to Public Comments

September 15, 2016

**Permit to Construct No. P-2015.0056
Project 61607**

**Alta Mesa Services, LP
Kauffman 1-34
New Plymouth, Idaho**

Facility ID No. 075-00028

Prepared by:
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AIR QUALITY DIVISION

Final

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BACKGROUND

The Idaho Department of Environmental Quality (DEQ) provided for public comment on the proposed permit to construct for Alta Mesa Services, LP – Kauffman 1-34 from July 27 through August 26, 2016, in accordance with IDAPA 58.01.01.209.01.c. During this period, comments were submitted in response to DEQ’s proposed action. Each comment and DEQ’s response is provided in the following section.

PUBLIC COMMENTS AND RESPONSES

Public comments regarding the technical and regulatory analyses and the air quality aspects of the proposed permit are summarized below. Questions, comments, and/or suggestions received during the comment period that did not relate to the air quality aspects of the permit application, the Department’s technical analysis, or the proposed permit are not addressed. For reference purposes, a copy of the Rules for the Control of Air Pollution in Idaho can be found at:

<http://adminrules.idaho.gov/rules/current/58/0101.pdf>.

Comment 1: We strongly encourage DEQ to aggregate emissions from this well with all of the current or future wells within this valley. DEQ’s air impact modeling results highlight that emissions from these well sites have broad dispersions, impacting air quality up to 7 miles away from the source (Attachment 2: Figure 1 from DEQ’s Modeling Memorandum). The emissions from these wells will undoubtedly combine in the atmosphere and have a cumulative impact greater than what is predicted by solely analyzing each well site as an individual entity. Treating each well site does not capture the whole picture, and may inadvertently fail to predict harmful air quality violations as a result of cumulative impacts.

Within an 8-mile radius of these wells are the communities of Fruitland, New Plymouth, and Payette in Idaho and Ontario in Oregon. These communities are home to just under 25,000 residents (24,788 according to the most recent U.S. Census data), all of whom deserve access to clean air. At a minimum, these communities deserve to know the levels of constituents in the air they breathe, how those chemicals combine and interact once released to the atmosphere, and assurance that emission of these constituents are being regulated to the best extent possible. Aggregating emissions from well sites with overlapping dispersion areas would achieve all of these priorities.

Response 1: Based on the definition of facility as defined in the Rules for the Control of Air Pollution in Idaho, all three indicators identified in the definition of “facility” must be met for all of the pollutant-emitting activities to be considered one facility. These three indicators are common control, industrial grouping, and contiguous or adjacent properties.

On May 12, 2016, the U.S. Environmental Protection Agency (EPA) issued the Source Determination Rule to clarify permitting requirements for the oil and natural gas industry. EPA issued the rule to clarify when multiple pieces of equipment and activities in the oil and gas industry must be deemed a single source. The final rule defines the term “adjacent” to clarify that equipment and activities in the oil and gas sector that are under common control will be considered part of the same source if they are located on the same site, or on sites that share equipment and are within ¼ mile of each other.

The K 1-34 well site is not within ¼ mile of any other well site and does not share equipment with other well sites and is therefore not considered contiguous or adjacent to any other Alta Mesa facilities based on the physical proximity of the sources.

DEQ also disagrees with the comment stating that emissions from this site should be aggregated with all current or future wells within this valley when evaluating the air impacts. Within

approximately 0.4 miles, design value (equal to the 5-year average of upper 98th percentile impacts of the annual distribution of maximum daily 1-hour impacts, consistent with the form of the 1-hour NO₂ standard) drops to levels below 10 µg/m³. Within about 3 miles, design value impacts drop to levels below 1.0 µg/m³ at most locations.

DEQ analysts, responsible for evaluating air impact analyses of potential emissions from facilities applying for air emissions permits, conclude that it is unlikely a similar neighboring facility located outside of ¼ mile could have a measurable effect on the maximum design value impact for the 1-hour NO₂ standard. This is based on the magnitude of NO_x emissions from the well site facilities. The plume of the two sources must overlap almost exactly during a period when the primary source has relatively high impacts to enable a measurable co-contributing impact for a 1-hour averaging period. The probability of this is small for sources separated by more than ¼ mile. Also, the conservative manner in which background concentrations are considered in the analyses, using the design value concentrations for both the modeled impact and the background concentration, provides an adequate level of NAAQS compliance assurance.

Figure 1: Concentration Contours for 1-Hour NO₂ Design Value Impacts
Background Concentrations not Included

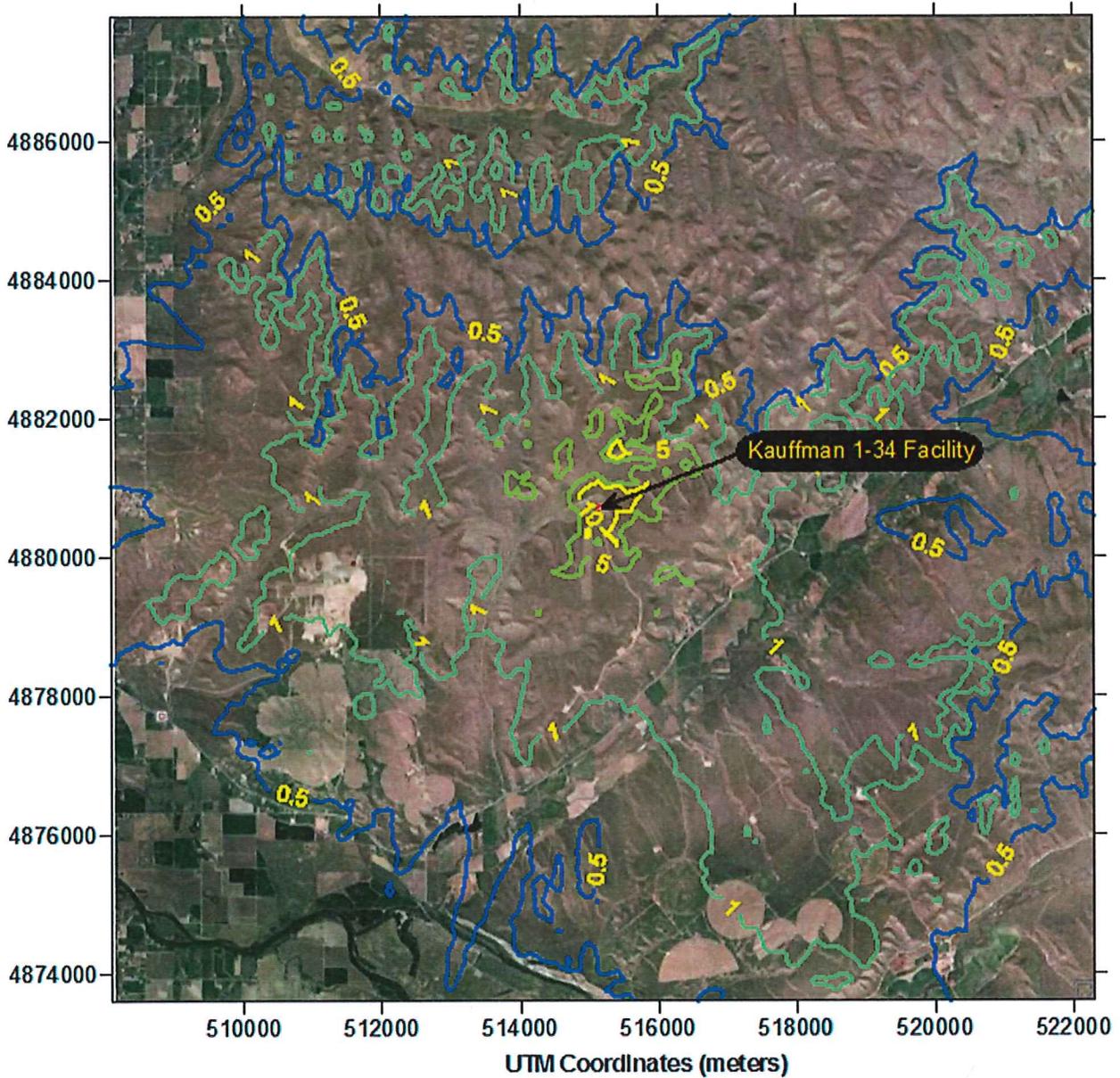
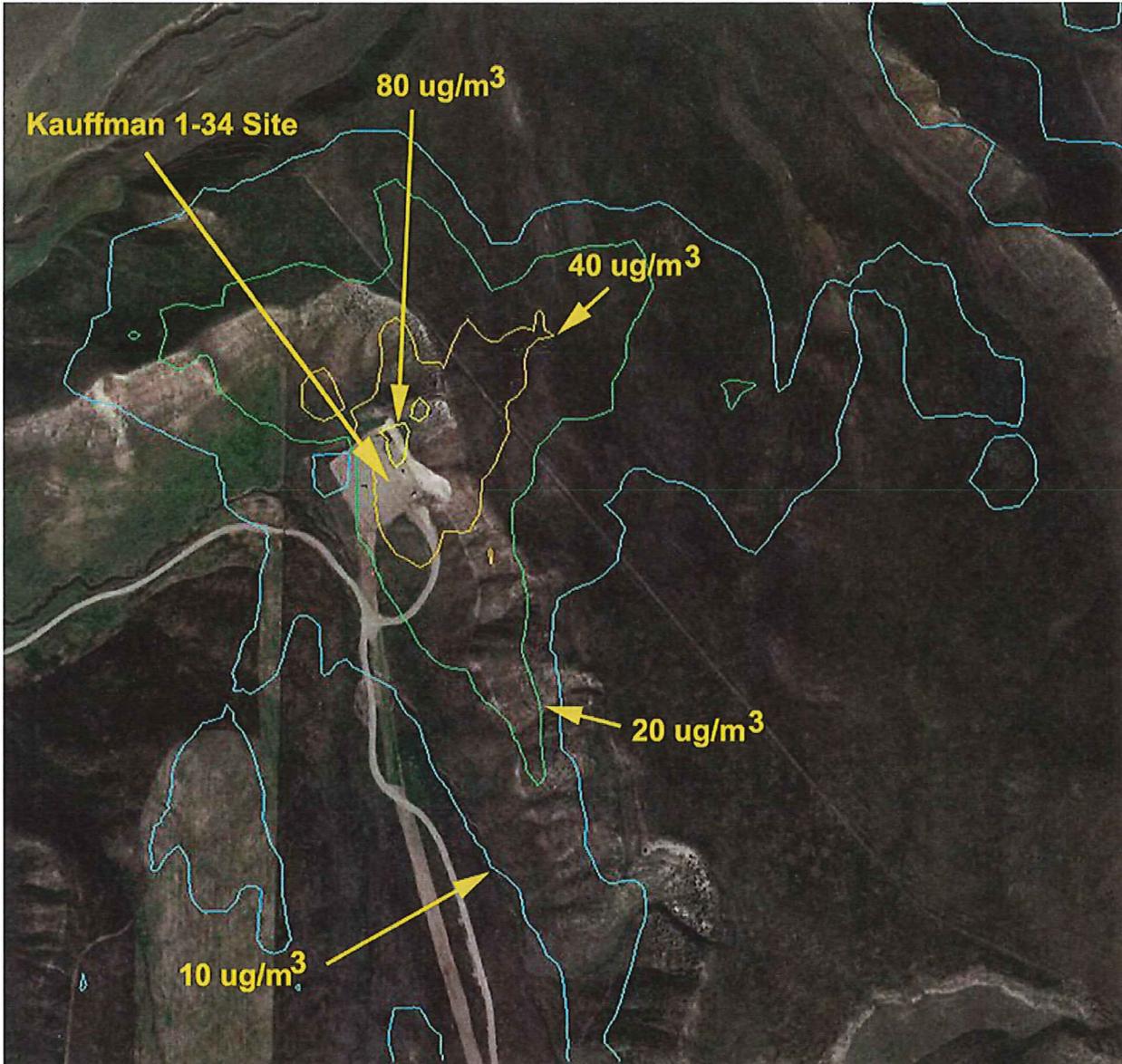


Figure 2: Concentration Contours for 1-Hour NO₂ Design Value Impacts in the Immediate Vicinity of the Kauffman 1-34 Site



Comment 2: As part of the NAAQS impact modeling DEQ selected a value of 52.6 µg/m³ for background 1-hour NO₂ concentrations. We are concerned over the repeated use of this background concentration value in multiple air impact analyses for well facilities that will have overlapping emissions, therefore necessitating a greater background concentration. During a meeting with DEQ Staff in July 2016, ICL was assured that DEQ Staff would account for increases in background concentrations associated with new oil and gas wells entering a production phase. Prior to the public comment period for this well, two previous wells (Kauffman 1-9 and DJS 1-15) underwent a public comment period and are being prepared to be permitted. In light of this, it seems DEQ has not accounted for the increases in background 1-hour NO₂ concentrations resulting from emissions from these two nearby wells.

We believe the selected 1-hour NO₂ concentrations value of 52.6 µg/m³ is not sufficient as it does not account for emissions from the remaining five (5) oil and gas wells that are either awaiting or currently undergoing acquisition of an air permit. These wells, which are all located in the same valley within a few miles of each other, will have overlapping and comingling emissions and therefore must be accounted for when calculating background concentrations.

Results from NAAQS impact modeling for this well indicate that emissions from this source will span roughly 7 miles (Attachment 2). The majority, if not all of these wells will reside within the 1 µg/m³ increase in 1-hour NO₂ contour. As a result portions of the valley within the immediate vicinity of all of these wells will experience at a minimum an increase in 1-hour NO₂ concentrations of 6 µg/m³, bringing background concentrations for 1-hour NO₂ up to at least 58.6 µg/m³. This increase could have serious implications if wells have total maximum concentrations modeled close to the NAAQS threshold.

Given that PTCs for two well sites (Kauffman 1-9 and DJS 1-15) are currently ahead of this PTC, DEQ must – at a minimum – account for increases in background levels of 1-hour NO₂ concentrations associated with the two PTCs acquiring permits in order to appropriately demonstrate compliance with the NAAQS. We believe the air impact modeling has not adequately demonstrated compliance with the NAAQS if current model predictions did not account for these known increases in background concentrations. In addition, we encourage DEQ to also account for the future increases in background concentrations resulting from the three (3) wells waiting to receive PTCs.

Response 2: ICL is concerned that the background pollutant concentration value used in the 1-hour NO₂ impact analysis does not account for increases in pollutant emissions from other oil and gas wells in existence or planned for the area. DEQ staff contends that the contribution of such sources to an area-wide background concentration is negligible and definitely below the quantitative uncertainty in the background value used. NO_x emissions will be less than 8.0 ton/year, with maximum hourly emissions at 1.3 pounds/hour. At these rates, DEQ is confident that collective impacts to the airshed are inconsequential.

DEQ's permit modeling program requires modeling the permitted facility and any nearby co-contributing sources that have a high probability of affecting the maximum design value impact of permitted facility, considering the magnitude of emissions and distance from the permitted facility. A regionally applicable background concentration, based on monitoring data or a combination of regional scale modeling and monitoring data, is then added to the maximum modeled design value. The background value used is very conservative since it is also reflective of the design value impact rather than a long term average concentration. The final design value impact of the permitted facility (design value modeled impact of emissions from the permitted facility and potential nearby co-contributing sources added to the design value background concentration) could only be realized if the modeled design value impacts occur simultaneously with the design value background concentration. In most cases, this is not likely.

Nearby minor sources (less than 100 ton/year of emissions of any specific pollutant) have a higher potential impact as a co-contributing source, to be modeled explicitly with the permitted source, than as a contribution to the regional background. The potential for nearby well sites to contribute to the modeled design value impact was addressed in DEQ's response to Comment 1.

The modeled design value contour map for the DJS 1-15 facility cannot be interpreted as an appropriate contribution to general background pollutant levels. The design value is based on the 8th highest value of daily maximum 1-hour concentrations. For this value to contribute to design value impacts of other facilities, the impacts would need to coincide in time and space with the impacts of other facilities and periods of high regional background concentrations. This is highly unlikely.

Comment 3: Ozone is formed in the atmosphere through interactions between sunlight and precursor constituents such as VOCs and NOx. Air dispersion models used to model emissions from sites are incapable of modeling these chemical interactions and the formation of ozone; thus, DEQ must rely on more complex models such as the Community Multi-Scale Air Quality (CMAQ) modeling system.

DEQ chose not to model ozone using CMAQ, citing "the CMAQ model is very resource intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not typically a reasonable or necessary requirement for air quality permitting".

DEQ further justifies not modeling ozone based on a letter from Gina McCarthy of the EPA to Robert Ukeiley, acting on behalf of the Sierra Club. The letter contained the following statement:

. . . footnote 1 to sections 51.166(I)(5)(I) of the EPA's regulations says the following: "No de minimis air quality level is provided for ozone. However, any net emission increase of 100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD would be required to perform an ambient impact analysis, including the gathering of air quality data."

The EPA believes it unlikely a source emitting below these levels would contribute to such a violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY.

(emphasis added)

Based on the second portion of this exert, we interpret the intent of Ms. McCarthy's statement as requiring consultation with an EPA Regional Office for sources of NOx and VOC emissions below 100 TPY. However, it seems DEQ's interpretation directly conflicts with Ms. McCarthy's statement based on DEQ's response to this exert in their modeling memorandum, which states:

DEQ determined it was not appropriate or necessary to require a quantitative source specific O3 impact analysis because allowable emissions estimates of VOCs and NOx are below the 100 tons/year threshold.

To comply with EPA's recommended action per Ms. McCarthy's letter, DEQ should consult with EPA Region 10 staff on emissions of ozone precursors from this site. This permit should not be approved until EPA has concluded that this site, in combination with other nearby contributing sources, will not violate the 8-hour ozone NAAQS.

Response 3: DEQ believes the letter from Gina McCarthy was issued within the discussion context of the more extensive Prevention of Significant Deterioration (PSD) air permitting program for major sources and was not intended to be applied to all minor source permitting actions. DEQ asserts there is no benefit achieved by delaying this minor source project to obtain EPA input on minor source levels of VOC emissions from a facility that has less than major source levels of VOC emissions, and DEQ is not aware of any other air permitting agencies where minor source permit modeling of ozone is discussed with EPA on a source-by-source basis.

Comment 4: Section 3.1.3 of DEQ's modeling memorandum discusses sensitivity analyses that were ran to ensure emissions from this facility remained compliant over a broad range of performance scenarios. This section includes the following statement:

If release parameters change substantially with final design such that parameters no longer are a conservative representation of the emissions sources, then these air impact analyses may effectively be invalidated and will not satisfy the requirements of Idaho Air Rules Section 203.02 and 203.03. Substantial changes from what was submitted in the application would include: 1) a decrease in stack height by more than about 10 percent; 2) a decrease in stack gas flow temperature by more than about 20 percent; 3) a change in source location by more than 10 meters, especially if closer to an ambient air boundary or closer to the design value receptor location; 4) construction of buildings in the vicinity of emissions sources that could cause plume downwash.

Based on this statement, it appears that there are means for infrastructure at the facility to become noncompliant with permit limits. However, there currently does not exist any monitoring provisions within the permit necessary to ensure this infrastructure is operating at optimal conditions. We therefore believe it is necessary for DEQ to require monitoring of these parameters, primarily the less readily apparent stack gas flow temperature, to ensure that emission release parameters remain within the sensitivity ranges analyzed by DEQ.

Response 4: It is not DEQ's standard procedure to include permit monitoring provisions for stack release parameters or exact locations of emissions points. Furthermore, the DEQ air impact analyses performed to evaluate the sensitivity of modeled results to changes in modeling methods and release parameters showed that release parameters could change rather substantially without danger of causing a violation in 1-hour or annual NO₂ standards. The permit will be issued based on what was certified to be true, accurate, and complete in the permit application and will be granted on the basis of design information presented in the application.

Appendix

Public Comments Submitted for

Permit to Construct

P-2015.0056



208.343.6913 • PO Box 849, Boise, ID 83702 • www.idahoconservation.org

8/22/16

Anne Drier
Air Quality Division
DEQ State Office
1410 N. Hilton
Boise, ID 83706

Bill Rogers
Air Quality Permitting Analyst
DEQ State Office
1410 N. Hilton
Boise, ID 83706

Submitted via email: william.rogers@deq.idaho.gov and anne.drier@deq.idaho.gov

RE: PTC number P-2015.0056, Kauffman 1-34 Well Site Facility

Dear Ms. Drier and Mr. Rogers;

Thank you for the opportunity to comment on the draft air permit to construct (PTC) for Alta Mesa's Kauffman 1-34 Well Site Facility near New Plymouth, ID.

Since 1973, the Idaho Conservation League has been Idaho's leading voice for clean water, clean air and wilderness—values that are the foundation for Idaho's extraordinary quality of life. The Idaho Conservation League works to protect these values through public education, outreach, advocacy and policy development. As Idaho's largest state-based conservation organization, we represent over 25,000 supporters, many of whom have a deep personal interest in protecting Idaho's air quality.

Idaho's Air Quality rules (IDAPA 58.01.01.201) state "no owner or operator may commence construction or modification of any stationary source, facility, major facility, or major modification without first obtaining a permit to construct from the Department..." Given these explicit rules, we were surprised to find that this well is listed on the Idaho Department of Land's website as having a status of "producing," leading us to believe this well is violating this rule by currently operating without the proper permit(s).

This uncertainty over whether this facility is operating without a permit or not is concerning, and we plan to continue to monitor and investigate the matter. In addition,

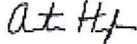
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DEQ must determine if this facility is currently operating without a required air permit. If so, these operations must immediately cease until a PTC is approved by DEQ.

Our remaining comments are described in detail following this letter. Please do not hesitate to contact me at 208-345-6933 ext. 23 or ahopkins@idahoconservation.org if you have any questions regarding our comments or if we can provide you with any additional information on this matter.

Sincerely,



Austin Hopkins
Conservation Assistant

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Cumulative Impact of Oil and Gas Wells

This PTC is for one of six wells located within the Little Willow Creek Valley, located roughly 5 miles from the city of Payette, ID (Attachment 1). We strongly encourage DEQ to aggregate emissions from this well with all of the current or future wells within this valley. DEQ's air impact modeling results highlight that emissions from these well sites have broad dispersions, impacting air quality up to 7 miles away from the source (Attachment 2: Figure 1 from DEQ's Modeling Memorandum). The emissions from these wells will undoubtedly combine in the atmosphere and have a cumulative impact greater than what is predicted by solely analyzing each well site as an individual entity. Treating each well site does not capture the whole picture, and may inadvertently fail to predict harmful air quality violations as a result of cumulative impacts.

Within an 8-mile radius of these wells are the communities of Fruitland, New Plymouth, and Payette in Idaho and Ontario in Oregon. These communities are home to just under 25,000 residents (24,788 according to the most recent U.S. Census data), all of whom deserve access to clean air. At a minimum, these communities deserve to know the levels of constituents in the air they breathe, how those chemicals combine and interact once released to the atmosphere, and assurance that emission of these constituents are being regulated to the best extent possible. Aggregating emissions from well sites with overlapping dispersion areas would achieve all of these priorities.

NO_x Background Concentrations

Air impact modeling is required for certain facilities to demonstrate that a new source of emissions will not violate any national ambient air quality standards (NAAQS) for listed criteria pollutants. Pursuant to this requirement, DEQ performed an ambient air impact modeling analysis for this facility due to its potential to emit (PTE) NO_x at levels above regulatory concern.

As part of the NAAQS impact modeling DEQ selected a value of 52.6 µg/m³ for background 1-hour NO₂ concentrations. We are concerned over the repeated use of this background concentration value in multiple air impact analyses for well facilities that will have overlapping emissions, therefore necessitating a greater background concentration. During a meeting with DEQ Staff in July 2016, ICL was assured that DEQ Staff would account for increases in background concentrations associated with new oil and gas wells entering a production phase. Prior to the public comment period for this well, two previous wells (Kauffman 1-9 and DJS 1-15) underwent a public comment period and are being prepared to be permitted. In light of this, it seems DEQ has not accounted for the increases in background 1-hour NO₂ concentrations resulting from emissions from these two nearby wells.

We believe the selected 1-hour NO₂ concentrations value of 52.6 µg/m³ is not sufficient as it does not account for emissions from the remaining five (5) oil and gas wells that are either awaiting or currently undergoing acquisition of an air permit. These wells, which

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are all located in the same valley within a few miles of each other, will have overlapping and comingling emissions and therefore must be accounted for when calculating background concentrations.

Results from NAAQS impact modeling for this well indicate that emissions from this source will span roughly 7 miles (Attachment 2). The majority, if not all of these wells will reside within the 1 $\mu\text{g}/\text{m}^3$ increase in 1-hour NO_2 contour. As a result portions of the valley within the immediate vicinity of all of these wells will experience at a minimum an increase in 1-hour NO_2 concentrations of 6 $\mu\text{g}/\text{m}^3$, bringing background concentrations for 1-hour NO_2 up to at least 58.6 $\mu\text{g}/\text{m}^3$. This increase could have serious implications if wells have total maximum concentrations modeled close to the NAAQS threshold.

Given that PTCs for two well sites (Kauffman 1-9 and DJS 1-15) are currently ahead of this PTC, DEQ must – at a minimum – account for increases in background levels of 1-hour NO_2 concentrations associated with the two PTCs acquiring permits in order to appropriately demonstrate compliance with the NAAQS. We believe the air impact modeling has not adequately demonstrated compliance with the NAAQS if current model predictions did not account for these known increases in background concentrations. In addition, we encourage DEQ to also account for the future increases in background concentrations resulting from the three (3) wells waiting to receive PTCs.

VOC Emissions and Ozone Formation

Ozone is formed in the atmosphere through interactions between sunlight and precursor constituents such as VOCs and NO_x . Air dispersion models used to model emissions from sites are incapable of modeling these chemical interactions and the formation of ozone; thus, DEQ must rely on more complex models such as the Community Multi-Scale Air Quality (CMAQ) modeling system.

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The EPA believes it unlikely a source emitting below these levels would contribute to such a violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY."

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Monitoring of Emission Release Parameters

Section 3.1.3 of DEQ's modeling memorandum discusses sensitivity analyses that were ran to ensure emissions from this facility remained compliant over a broad range of performance scenarios. This section includes the following statement:

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temperature, to ensure that emission release parameters remain within the sensitivity ranges analyzed by DEQ.

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Attachment 1

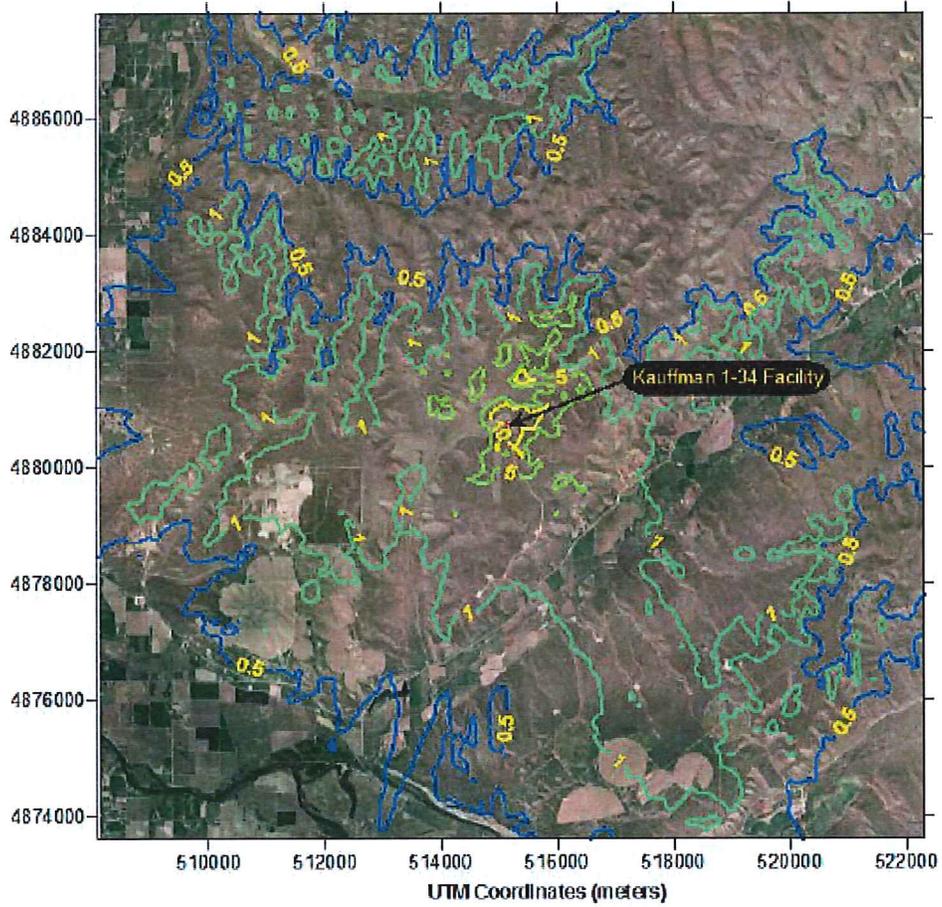


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Attachment 2

Figure 1: Concentration Contours for 1-Hour NO₂ Design Value Impacts
Background Concentrations not Included



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