

March 13, 2017

Oregon Department of Environmental Quality

Dear DEQ:

By letter dated November 28, 2016, the Oregon Department of Environmental Quality (“DEQ” or the “Department”) requested that we provide information about potential emissions of 633 substances from our facility. Most of the substances identified in DEQ’s letter have never previously been subject to emissions inventory efforts in Oregon and/or are substances for which there is little or no reliable emissions rate data. This letter is being submitted with the Department generated spreadsheet which we have completed based on the best publicly available data that we could identify within the time allowed. In preparing our response we have attempted to determine our emissions of each the substances identified on DEQ’s spreadsheet and have not attempted to expand beyond those substances listed. This letter explains the approach taken in developing the values in the spreadsheet and clarifies elements of our response.

Best Publicly Available Data Employed

In submitting this emissions inventory, we are not certifying to its accuracy. Many of the substances for which data are requested are not substances we have ever tested for and nor are there reliable publicly available emissions factors that we consider accurate for our processes. By submitting this inventory we relied on what we considered to be the most representative, publicly available, emissions information that we could identify within the time allowed. No testing was performed specific to this response and we did not use emissions estimates deemed non-reliable or not representative of our process. If emission factors were a third party’s proprietary information or otherwise not publicly available, we have generally not relied upon them even if that meant that we were unable to report emissions as a result. Better information may become available in the future and we reserve the right to amend this inventory at any time. This inventory could be revised at any time and should not be used for regulatory purposes.

Engineering Judgment Applied

In evaluating possible sources of emissions data, we applied our best engineering judgment to identify what constitutes the best representative information. Where appropriate, we may have deviated from using the average of source test results if in our best engineering judgment doing

so provides a more accurate representation of our emissions. Similarly, we may not have relied on all available source test information if we believe that those data do not present the most accurate estimate of our current emissions. Overall, we strove to in completing this inventory to utilize what we considered the most representative of the emission factors and data available to us.

Categorically Insignificant Activities

We have not reported emissions associated with any of the categorically insignificant activities identified by the Department. With an activity like gasoline dispensing where the tanks are exempt, we have not included emissions related to emptying and filling of the tanks. Where an activity was not specifically listed, but appeared similar in nature to a listed categorically insignificant activity, we have excluded emissions associated with that activity. For example, emissions from permitted discharges to wastewater treatment facilities are identified as categorically insignificant. Similarly, we have not included in this inventory emissions from wastewater systems generally that are not identified in our current permit as emission units. Otherwise, we would be trying to estimate substances such as residual chlorine or naturally occurring trace metals in our water. We are sure that this was not intended.

Reliance on SDS

In preparing this inventory we have relied in part on Safety Data Sheets (“SDS”) provided to us by our vendors. State and federal law dictates when manufacturers must identify a substance on an SDS so as to communicate potential hazards. Accordingly, we have not attempted to determine the presence of any ingredients not shown on an SDS. Where an ingredient or its percentage is identified on an SDS as a trade secret, we have not reflected that ingredient in the inventory. Also, we want to clarify that where an ingredient is reflected as being present in a range, we have not simply taken the high end of the range as has been suggested as this would potentially give a seriously misleading result and could result in substantial over-reporting. Instead we have used our best engineering judgment to estimate the amount of the substance in the product.

Fugitive Emissions Not Quantified Unless Specifically Identified in Our Permit

We have generally not attempted in completing this inventory to calculate fugitive emissions that are not explicitly called out in our existing permit. Sources may have many small sources of fugitive emissions that would require tremendous effort to identify and quantify. We do not believe that such an effort is required by the information request or possible in the time allowed. Therefore, if a specific emission unit is called out in our permit and we have a reasonable basis using publicly available information to estimate its fugitive emissions, we have generally done

so. However, if an emissions unit is not identified in our permit or we could not quantify its fugitive emissions with a reasonable degree of confidence using publicly available information, we have not tried to guess whether any such emissions occur.

Unknown or Unquantifiable Emissions

For many of the 633 substances for which information has been requested, we have no reliable, publicly available data with which to estimate emissions. For some substances, we can say with a high degree of confidence that we would not expect the substance to be emitted from our facility. For other substances we just don't know enough, due to the inadequacy of the information available, to be able to quantify emissions (if any) with a reasonable degree of certainty. Where we lacked adequate certainty to estimate emissions, we have placed an "II" in the cell to indicate "insufficient information" was available to quantify emissions with a reasonable degree of certainty. Relatedly, consistent with the EPA methodology used in completing the Toxic Release Inventory ("TRI"), where we have listed a "0" in the spreadsheet, we believe that our emissions of that substance are likely less than 0.5 lbs/yr.

2016 and Projected Maximum Annual

DEQ requested that we provide information for calendar year 2016. Generally we have tried to do so to the best of our abilities in the time allowed and given that there is no legal obligation to gather or generate data that might have aided with this assessment. As a result, in preparing this response, we might not have all data that we would have otherwise collected if we had known of this reporting request as we entered 2016. In some circumstances 2016 might not present the most representative time period for estimating actual emissions. Where we thought a prior time period was more reflective of our facility's recent emission levels, we reported as such and flagged the data accordingly.

DEQ also requested that we provide information on projected maximum annual emissions. In responding to this request we have not in all circumstances used the consumption and production rates underlying our PSELs. There are many reasons for this. First, PSELs represent a maximum achievable scenario, not necessarily our projected maximum annual emissions. Therefore, always strictly following the assumptions underlying the PSELs would have yielded an inaccurate value that could potentially mislead the public. Second, not all activities that we are permitted to engage in are activities that we reasonably believe are going to take place over the next five years (i.e., the permit cycle). An example is that some facilities may be permitted to combust Bunker C fuel oil but rarely do so or do not even have the infrastructure in place to begin combusting Bunker C fuel oil. Reporting projected maximum annual emissions as if the maximum allowable levels of Bunker C combustion are anticipated over the next 5 years would be misleading. Similarly, an emergency engine would not be expected to operate more than a

few hours per year. Reporting the maximum allowable hours of operation of that emergency engine would, again, be misleading. In addition, not all permits are up to date and so may not reflect the most recent assumptions and understandings about the source. Many other examples abound. Therefore, in estimating our projected maximum annual emissions, we have focused on the next 5 year period and prepared our best estimate of our maximum projected actual emissions during that time period. This may or may not comport with all of the assumptions underlying our PSELS.

Efforts to Minimize Duplicate Reporting

Some substances could be reported in ways that result in double reporting. We have made every effort to avoid double reporting. For example, the spreadsheet provides a space to report elemental nickel, nickel oxide, nickel subsulfide, nickel acetate, nickel carbonate, nickel carbonyl, nickel hydroxide, nickelocene, nickel refinery dust from the pyrometallurgical process and nickel refinery dust. If we were to have to report nickel, then we would attempt to report an emission once and not double report it across two or more of the categories.

Listed Substances

DEQ has specified that we must use the Department form. We have done our best to adhere to that request. This has included filling in the spreadsheet for the specific substances identified on the Department's spreadsheet. We have not attempted to determine whether the spreadsheet has identified substances or substance categories as they are identified in the federal HAPs list. Instead, we have reported what is specifically identified on the spreadsheet and not modified the Department's categories. Where there was a disconnect between the CAS number and the chemical as identified, we reported based on the CAS number.

Closed Systems and Articles

We have not attempted to quantify emissions from any systems that are normally closed or from any products that are considered articles (as that term is defined by EPA under the TRI program). For example, we have not attempted to quantify any emissions that could conceivably come from a closed refrigeration system that is not intended to vent to atmosphere. Attempting to quantify possible emissions from these sorts of systems and objects would be a tremendous effort and would likely be misleading.

Startup, Shutdown and Malfunctions Not Included

We have not attempted to quantify emissions from startup, shutdown or malfunction emissions in preparing this inventory. Such emissions may occur, but reliable data characterizing the specific

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emissions profile during startup, shutdown and malfunction are either not available or not reliable. Lacking reliable publicly available emission factors for such events our best engineering judgment is that they should not be included at this time in our inventory.

Research & Development

In preparing this inventory we have made our best attempt to characterize emissions attributable to our manufacturing activities. We have not included emissions from research and development activities that are not part of our commercial manufacturing process (i.e., not resulting in salable product).