Technical Support Document

Simplot US Food Group Holdings, LLC – Rainier Plant
AQPID No. A0250324
Moses Lake, WA

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1. Project Summary

Simplot US Food Group Holdings, LLC – Rainier Plant (the source) is a potato processing plant classified as a Title V source with new emissions units. This review is for the construction of the Rainier Plant, with revised elements from the initial Approval Order. Changes were made to the boiler size (120 to 99 MMBTU/hour), increased air make up unit capacity (12.6 to 55.2 MMBTU/hour), increased flow rate the fryer wet electrostatic precipitator, no additional lagoon, will use lagoon on adjacent property.

An initial Notice of Construction (NOC) application dated January 6, 2025, was submitted by Simplot US Food Group Holdings, LLC for the Rainier Plant project. The Washington State Department of Ecology (Ecology) reviewed the initial application and found it incomplete per WAC 173-400-111 on January 28, 2025. An amended NOC application was received by Ecology on April 22, 2025, and May 29, 2025, and found to be complete on June 5, 2025.

2. Application Processing

a. Public Notice

This project is subject to a mandatory 30-day public comment period per WAC 173-400-171(3)(b) for an order issued with emissions greater than an Emission Threshold Rate as defined in WAC 173-400-030. The comment period was held July 8, 2025, through August 15, 2025. Legal notices were posted in English and Spanish on Ecology's website and in the Columbia Basin Herald. Any comments received during the comment period, will be included in Attachment B.

Resources used to determine outreach:

Department Of Health Disparities map: Information by Location | Washington Tracking Network (WTN)

Washington GIS map: Limited English Proficiency Application (arcgis.com)

b. State Environmental Policy Act

Grant County issued a mitigated determination of non-significance (MDNS) on August 3, 2022. Mitigation requirements are listed in the NOC application materials, permits required include the Notice of Construction Approval Order and Construction General Stormwater Permit.

3. Applicable Regulations

a. State Regulations

i. Minor New Source Review Applicability

Per WAC 173-400-110, an NOC application and an order of approval must be issued by the permitting authority prior to the establishment of a new source or modification.

As stated in the NOC application and consistent with Ecology's review, the Rainier Plant emission units are being constructed for this project and therefore are subject to minor new source review (NSR).

A. Potential to Emit (Potential Emissions)

The potential emissions from the project are greater than the exemption levels listed under WAC 173-400-110(5) as shown below in Tables 1 and 2 (in bold). Potential emissions before control and permit limitations.

Table 1. Potential emissions for pollutants listed under WAC 173-400-110(5), NSR Exemption Levels

Pollutant	New Units (tons/year)	Minor NSR Exemption (tons/year)
Carbon Monoxide (CO)	**37.27**	5.0
Lead (Pb)	0.00033	0.005
Nitrogen Oxides (NOX)	**39.33**	2.0
PM_{10}	**125.7**	0.75
$PM_{2.5}$	**124.3**	0.5
Total Suspended Particulates (TSP)	**132.6**	1.25
Sulfur Dioxide (SO_2)	**213.4**	2.0
Volatile Organic Compounds, total (VOC)	**100.5**	2.0
Ozone Depleting Substances, total	0.00	1.0
Greenhouse Gases (GHG)	**79,043**	N/A

Table 2. Potential TAP emissions and de minimis emission values

Pollutant	Potential Emissions from Project (lb/period)	De Minimis Emission Values	Averaging Period
Acetaldehyde	2.25	3.00E+00	Year

Pollutant	Potential Emissions from Project (lb/period)	De Minimis Emission Values	Averaging Period
Acrolein	**5.37E-03**	1.30E-03	24-Hour
Arsenic	**2.65E-01**	2.50E-03	Year
Benzene	**4.55**	1.00E+00	Year
Benzo[a]anthracene	2.38E-03	4.50E-02	Year
Benzo[a]pyrene	1.59E-03	8.20E-03	Year
Benzo[b]fluoranthene	2.38E-03	4.50E-02	Year
Benzo[k]fluoranthene	2.38E-03	4.50E-02	Year
Beryllium	**1.59E-02**	3.40E-03	Year
Cadmium	**1.46**	1.90E-03	Year
Carbon Monoxide	**8.51**	1.10E+00	1-Hour
Chromium III	**4.88E-03**	3.70E-04	24-Hour
Chromium VI	**7.42E-02**	3.30E-05	Year
Chrysene	2.38E-03	4.50E-01	Year
Cobalt	3.05E-04	3.70E-04	24-Hour
Copper	1.29E-04	9.30E-03	1-Hour
Dibenzo(a,h)anthracene	1.59E-03	4.10E-03	Year
Dichlorobenzene	**1.59**	7.40E-01	Year
7,12-Dimethylbenz(a)anthracene (DMBA)	**2.12E-02**	6.90E-05	Year
Ethylbenzene	**4.99**	3.20E+00	Year
Formaldehyde	**9.93E+01**	1.40E+00	Year
Hexane	**6.53**	2.60E+00	24-Hour

Pollutant	Potential Emissions from Project (lb/period)	De Minimis Emission Values	Averaging Period
Hydrogen Sulfide	**1.58E+01**	7.40E-03	24-Hour
Indeno(1,2,3-cd)pyrene	2.38E-03	8.90E-01	Year
Lead	0.66	1.00E+01	Year
Manganese	**1.38E-03**	1.10E-03	24-Hour
3-Methylchloranthrene	**2.38E-03**	7.80E-04	Year
Mercury	**9.44E-04**	1.10E-04	24-Hour
Naphthalene	8.08E-01	4.80E+00	Year
Nickel	**2.78**	3.10E-02	Year
Nitrogen dioxide (NO_2)	**8.98**	4.60E-01	1-Hour
Propylene	7.29E-01	1.10E+01	24-Hour
Selenium	8.71E-05	7.40E-02	24-Hour
Sulfur dioxide (SO_2)	**4.87E+01**	4.60E-01	1-Hour
Toluene	5.28E-02	1.90E+01	24-Hour
Vanadium	**8.35E-03**	3.70E-04	24-Hour
Xylenes	3.93E-02	8.20E-01	24-Hour

ii. Prevention of Significant Deterioration

PSD does not apply, based on uncontrolled 8,760 hour/year PTE.

iii. Other Applicable Requirements

In accordance with WAC 173-400-113, the proposed new sources must comply with all applicable emission standards adopted under Chapter 70A.15 RCW. The following applicable emission standards are associated with the proposed project:

A. **WAC 173-400-040** General standards for maximum emissions. All emission units must meet 20 percent opacity or less for three minutes in one hour.

B. **WAC 173-400-050** Emission standards for combustion and incineration units. Limits emissions of particulate matter from combustion and general process units to 0.23 gram per dry cubic meter at standard conditions (0.10 grains per dry standard cubic foot) of exhaust gas.

C. **WAC 173-400-060** Emission standards for general process units. Limits emissions of particulate matter from combustion and general process units to 0.23 gram per dry cubic meter at standard conditions (0.10 grains per dry standard cubic foot) of exhaust gas.

D. **WAC 173-400-075** See below for Emission standards for sources emitting hazardous air pollutants.

E. **WAC 173-400-115** See below for Standards of performance for new sources.

b. Federal Regulations

In accordance with WAC 173-400-113, the proposed new sources must comply with all applicable new source performance standards (NSPS) included in 40 C.F.R. Part 60, national emission standards for hazardous air pollutants (NESHAPs) included in 40 C.F.R. Part 61, and NESHAPs for source categories included in 40 C.F.R. Part 63. The following applicable emission standards are associated with the proposed project:

i. Standards of Performance for New Stationary Sources

40 C.F.R. 60 Subpart A – General Provisions

40 C.F.R. 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial Institutional Steam-Generating Units does apply to the 99 MMBTU/hour boiler.

40 C.F.R. 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines does apply to the diesel fire water pump and the emergency generator.

ii. National Emission Standards for Hazardous Air Pollutants

40 C.F.R. 63 Subpart A – General Provisions

40 C.F.R. 63 Subpart ZZZZ -National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

4. Emissions

a. Emission Factors and Calculations

Boiler NOx and CO emissions are based on proposed BACT limits, similar to existing sites. PM, VOC, and lead based on AP-42 Section 1.4 natural gas combustion emission factors. SO_2 is based on worst case of burning all the produced biogas, sulfur content based on 3,800 ppmv H_2S in the biogas and iron sponge control of 98 percent. The remaining capacity of the boiler is based on burning natural gas,

emission factor from AP-42 Section 1.4. The calculated maximum potential SO_2 emissions rate is based on 100 percent conversion of H_2S to SO_2 and the H_2S emission rate is based on 98 percent conversion of H_2S to SO_2.

Fryer emission factors are based on emission results from an existing potato processing plant source test results for PM and VOC. PM emissions based on proposed BACT grain loading from the wet electrostatic precipitator, PM control from both fryers. The boiler supplies heat to the fryers.

Line 1 Main Dryer is heated by the boiler. PM and VOC emissions are based on source tests at a similar potato processing facility.

Line 2 Form Dryer is heated by the boiler. PM and VOC emissions are based on source tests at a similar potato processing facility.

Biogas Flare emissions are based on 3,800 ppmv H_2S from the biogas, assuming 100 percent is converted to SO_2 and then controlled with a 98 percent efficient iron sponge. H_2S emission rate is based on 98 percent conversion of H_2S to SO_2 and control with iron sponge. NOx, CO, PM, and lead are based on AP-42 Section 1.4.

Air Handling Units emission factors for NOx, CO, PM, and VOC are based on AP-42 Section 1.4.

Toxic Air Pollutants for the Boiler, Line 1 Dryer, Flare, and Air Handling Units are from the most conservative and fuel appropriate of the following sources: AP-42 Chapter 1.4 Natural Gas Combustion; Ventura County Air Pollution Control District; EPA WebFire Emission Factor Search and CATEF.

b. Best Available Control Technology | Best Available Control Technology for Toxics

Boiler – Low NOx burners, 30 ppmvd NOx and 50 ppmvd CO at three percent oxygen. Ultra-low NOx burners were technically not feasible due to smaller turn down ratio not providing the operational flexibility needed for the project. BACT and tBACT for VOC, PM and toxic air pollutants is good combustion practices.

Line 1 and 2 Fryers – are heated by the boiler and produce PM and VOC. A wet electrostatic precipitator will be used to control PM to 0.018 grains per dry cubic feet. VOC may also be controlled somewhat by the WESP; however, emissions calculations assume zero control. Add on control for VOC such as a regenerative thermal oxidizer pose fire safety concerns due to oil in the exhaust stream. High moisture and oil in the exhaust stream make carbon absorption difficult and it has not been used other potato processors. BACT for VOC will be best management practices of the fryer equipment and the WESP.

Line 1 Main Dryer – is heated by the boiler and produces PM and VOC. BACT for the Main Dryer will be best management practices of the Main Dryer.

Line 2 Form Dryer is heated by the boiler and produces PM and VOC. BACT for the Form Dryer will be best management practices of the Form Dryer.

Anaerobic Digester and Biogas – Biogas will be used as fuel for the boiler. An elevated flare will be used to combust biogas when the boiler is not operating or is unavailable to burn biogas. The flare will combust volatile organic compounds at 98 percent efficiency. An iron sponge will be used to remove 98 percent of H_2S from the biogas before it is burned in the flare or boiler.

Air Handling Units – the 49 units are all quite small (between 0.08 and 4.6 MMBTU/hr), BACT and tBACT for these units will be best management practices and pipeline quality natural gas. The Air Handling Units inside the production building will be limited by fuel use to allow for operation of 3900 hours per year for heating during colder months.

Site Roads – All site roads will be paved and swept. A fugitive dust control plant will be required to determine road sweeping frequency and address any other fugitive dust issues.

c. Allowable Emissions

The allowable emissions from the project, considering all emission and operational limits contained in the approval order, are shown in the tables below.

Table 3. Allowable emissions for pollutants listed under WAC 173-400-110(5)

Pollutant	New Units (tons/year)
Carbon Monoxide (CO)	26.2
Nitrogen Oxides (NOX)	26.2
PM_{10}	27.0
$PM_{2.5}$	26.7
Total Suspended Particulates (TSP)	28.8
Sulfur Dioxide (SO_2)	9.0
Volatile Organic Compounds, total (VOC)	99.8
Greenhouse Gases (GHG)	63,340

Table 4. Allowable TAP emissions

Pollutant	New Units (tons/year)	Averaging Period
Acrolein	6.25E-04	24-Hour
Arsenic	1.06E-04	Year

Pollutant	New Units (tons/year)	Averaging Period
Benzene	1.54E-03	Year
Beryllium	6.37E-06	Year
Cadmium	5.84E-04	Year
CO	2.62E+01	1-Hour
Chromium III	7.13E-04	24-Hour
Chromium VI	2.97E-05	Year
Dichlorobenzene	6.37E-04	Year
DMBA	8.49E-06	Year
Ethylbenzene	1.58E-03	Year
Formaldehyde	3.98E-02	Year
Hexane	9.55E-01	24-Hour
Hydrogen sulfide	5.78E-02	24-Hour
Manganese	2.02E-04	24-Hour
3-Methylchloranthrene	9.55E-07	Year
Mercury	1.38E-04	24-Hour
Nickel	1.11E-03	Year
NO_2	2.62E+01	1-Hour
SO_2	8.95E+00	1-Hour
Vanadium	1.22E-03	24-Hour

The table below presents the potential emissions and allowable emissions for the Permittee with the emissions from the project included. The permittee is Title V major, due to combined emissions from this project and the existing site in Moses Lake.

Table 5. Potential and Allowable Emissions for Total Source

Pollutant	Rainier Plant Potential Emissions (tons/year)	Rainier Plant Allowable Emissions (tons/year)	Existing Moses Lake Plant Allowable Emissions (tons/year)	Both Plants Allowable Emissions (tons/year)
Carbon Monoxide (CO)	37.27	26.21	75.8	102.0
Nitrogen Oxides (NOX)	39.33	26.17	55.2	81.4
PM_{10}	125.7	27.0	18.9	45.9
$PM_{2.5}$	124.3	26.7	18.9	45.6
Total Suspended Particulates (TSP)	132.6	28.8	18.9	47.7
Sulfur Dioxide (SO_2)	213.4	8.95	58.2	67.2
Volatile Organic Compounds, total (VOC)	100.5	99.8	90.5	190.3
Greenhouse Gases (GHG)	79,043	63,340	~110,125	173,465

5. Ambient Air Quality Standards

As specified in WAC 173-400-113, the proposed new or modified source(s) must not cause or contribute to a violation of any ambient air quality standard. This includes the ambient air quality standards for both criteria and toxic air pollutants.

a. Pollutants Listed Under WAC 173-400-110 (Except TAPs)

For SO_2, PM_{10}, $PM_{2.5}$ NO_2, modeling was performed to satisfy the requirements of Chapter 173-476 WAC. The modeling demonstrates that the emission increases as a result of the project will not exceed the ambient air quality standards. The modeling results are included in the table below.

Table 6. Criteria Pollutant Modeling Results.

Criteria Pollutant	Averaging Period	Maximum Modeled Concentration (µg/m3)	Background Concentration (µg/m3)	Total Concentration (µg/m3)	Ambient Air Quality Standard (µg/m3)
CO	8-Hour	48	938	986	10,000
CO	1-Hour	153	1,305	1,458	40,000
SO_2	3-Hour	24.4	16.8	41.2	1,310
SO_2	1-Hour	24.4	12	36.4	200
PM_{10}	24-Hour	11.4	80	91.4	150
$PM_{2.5}$	Annual	2.4	5.7	8.1	12
$PM_{2.5}$	24-Hour	8.8	17	25.8	35
NO_2	Annual	6.3	4.7	11.0	100
NO_2	1-Hour	109	26	134	188

b. Toxic Air Pollutants

In accordance with WAC 173-460-040, new TAP sources must meet the requirements of Chapter 173-460 WAC, unless they are exempt by WAC 173-400-110(5).

As shown in Table 2, minor NSR is required for the Rainier Plant Project. As such, the new emission units must comply with WAC 173-460-070 (ambient impact requirement). The facility may demonstrate compliance with the ambient impact requirement by either showing that the emissions increase is less than the small quantity emissions rates (SQER) or through dispersion modeling. The table below includes the estimated emissions increases associated with the project and the applicable SQER.

Table 7. TAP Analysis

TAP	Estimated Increase (lb/averaging period)	SQER (lb/averaging period)	Modeling Required?
Acrolein	5.37E-03	2.60E-02	No