DEPARTMENT OF ECOLOGY
State of Washington

Notice of Construction Application

A notice of construction permit is required before installing a new source of air pollution or modifying an existing source of air pollution. This application applies to facilities in Ecology's jurisdiction. Submit this application for review of your project. For general information about completing the application, refer to Ecology Forms ECY 070-410a-g, "Instructions for Ecology's Notice of Construction Application."

Ecology offers up to two hours of free pre-application assistance. We encourage you to schedule a pre-application meeting with the contact person specified for the location of your proposal, below. If you use up your two hours of free pre-application assistance, we will continue to assist you after you submit Part 1 of the application and the application fee. You may schedule a meeting with us at any point in the process.

Upon completion of the application, please enclose a check for the initial fee and mail to:

Department of Ecology
Cashiering Unit
PO Box 47611
Olympia, WA 98504-7611

For Fiscal Office Use Only: 0299-3030404-B00-216--001--000404

Check the box for the location of your proposal. For assistance, call the appropriate office listed below:

Check box	Ecology Permitting Office	Contact
☐	**Chelan, Douglas, Kittitas, Klickitat, or Okanogan County** Ecology Central Regional Office (509) 575-2490	Lynnette Haller (509) 457-7126 lynnette.haller@ecy.wa.gov
☑	**Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla, or Whitman County** Ecology Eastern Regional Office (509) 329-3400	Karin Baldwin (509) 329-3452 karin.baldwin@ecy.wa.gov
☐	**San Juan County** Ecology Northwest Regional Office (206) 594-0000	David Adler (425) 649-7267 david.adler@ecy.wa.gov
☐	**For actions taken at Kraft and Sulfite Paper Mills and Aluminum Smelters Only** Ecology Industrial Section (360) 407-6900	James DeMay (360) 407-6868 james.demay@ecy.wa.gov
☐	**For actions taken on the US Department of Energy Hanford Reservation Only** Ecology Nuclear Waste Program (509) 372-7950	Lilyann Murphy (509) 372-7951 lilyann.murphy@ecy.wa.gov

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1190.00

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Check the box below for the fee that applies to your application.

New project or equipment:

- ☐ **$1,904: Basic project** initial fee covers up to 16 hours of review.
- ☐ **$12,614: Complex project** initial fee covers up to 106 hours of review.

Change to an existing permit or equipment:

- ☐ **$357: Administrative or simple change** initial fee covers up to 3 hours of review. Ecology may determine your change is complex during the completeness review of your application. If you project is complex, you must pay the additional xxx before we will continue working on your application
- ☑ **$1,190: Complex** change initial fee covers up to 10 hours of review
- ☐ **$350flat fee**: Replace or alter control technology equipment under WAC 173-400-114. Ecology will contact you if we determine your change belongs in another fee category. You must pay the fee associated with that category before we will continue working on your application.

Read each statement below, then check the box next to it to acknowledge that you agree.

- ☑ The initial fee you submitted may not cover the cost of processing your application. Ecology will track the number of hours spent on your project. If the number of hours Ecology spends exceeds the hours included in your initial fee, Ecology will bill you $119 per hour for the extra time.
- ☑ You must include all information requested by this application. Ecology may not process your application if it does not include all the information requested.
- ☑ Submittal of this application allows Ecology staff to visit and inspect your facility.

Part 1: General Information

I. Project, Facility, and Company Information

1. Project Name: Dryer Addition
2. Facility Name: Tri-Cities Grain
3. Facility Street Address:

   600 Tank Farm Rd, Pasco, WA 99301

4. Facility Legal Description: Parcel #112570040
5. Company Legal Name (if different from Facility Name):

   _____

6. Company Mailing Address (street, city, state, zip)

   600 Tank Farm Rd, Pasco, WA 99301

II. Contact Information and Certification

1. Facility Contact Name (who will be onsite): Mark Weber
2. Facility Contact Mailing Address (if different than Company Mailing Address:

   _____

3. Facility Contact Phone Number: (509) 545-0900
4. Facility Contact E-mail: mark@tcgrain.com
5. Billing Contact Name (who should receive billing information):
   Mark Weber
6. Billing Contact Mailing Address (if different Company Mailing Address):

7. Billing contact Phone Number: (509) 545-0900
8. Billing Contact E-mail: mark@tcgrain.com
9. Consultant Name (optional – if 3rd party hired to complete application elements):
   Beth Fifield Hodgson
10. Consultant Organization/Company: Spring Environmental, Inc
11. Consultant Mailing Address (street, city, state, zip): 1011 N Cedar St, Spokane, WA 99201
12. Consultant Phone Number: (509) 328-7500
13. Consultant E-mail: beth@springenvironmental.com
14. Responsible Official Name and Title (who is responsible for project policy or decision making):
    Mark Weber
15. Responsible Official Phone: (509) 545-0900
16. Responsible Official E-mail: mark@tcgrain.com
17. Responsible Official Certification and Signature:

    I certify that the information on this application is accurate and complete.

    Signature: Mark Weber Date: 6/3/25

Part 2: Technical Information

The Technical Information may be sent with this application form to the Cashiering Unit, or may be sent directly to the Ecology regional office with jurisdiction along with a copy of this application form.

For all sections, check the box next to each item as you complete it.

III. Project Description

- [x] Written narrative describing your proposed project.
- [x] Projected construction start and completion dates.
- [x] Operating schedule and production rates.
- [x] List of all major process equipment and manufacturer and maximum rated capacity.
- [x] Process flow diagram with all emission points identified.
- [x] Plan view site map.
- [x] Manufacturer specification sheets for major process equipment components
- [ ] Manufacturer specification sheets for pollution control equipment.
- [x] Fuel specifications, including type, consumption (per hour and per year) and percent sulfur.

IV. State Environmental Policy Act (SEPA) Compliance

Check the appropriate box below.

- [ ] SEPA review is complete. Include a copy of the final SEPA checklist and SEPA determination (e.g., DNS, MDNS, and EIS) with your application.
- [x] SEPA review has not been conducted:
  - [ ] If review will be conducted by another agency, list the agency. You must provide a copy of the final SEPA checklist and SEPA determination before Ecology will issue your permit. Agency reviewing SEPA: _____
  - [x] If the review will be conducted by Ecology, fill out a SEPA checklist and submit it with your application. You can find a SEPA checklist online at https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-document-templates

V. Emissions Estimations of Criteria Pollutants

Does your project generate criteria air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please proved the following information regarding your criteria emissions in the application.

- [x] The names of the criteria air pollutants emitted (i.e., NO_X, SO_2, CO, $PM_{2.5}$, PM_{10}, TSP, VOC, and Pb)
- [x] Potential emissions of criteria air pollutants in tons per hour, tons per day, and tons per year (include calculations)
- [x] If there will be any fugitive criteria pollutant emissions, clearly identify the pollutant and quantity

VI. Emissions Estimations of Toxic Air Pollutants

Does your project generate toxic air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please provide the following information regarding your toxic air pollutant emissions in your application.

☑ The names of the toxic air pollutants emitted (specified in WAC 173-460-150[1])

☑ Potential emissions of toxic air pollutants in pounds per hour, pounds per day, and pounds per year (include calculations)

☑ If there will be any fugitive toxic air pollutant emissions, clearly identify the pollutant and quantity

VII. Emission Standard Compliance

☑ Provide a list of all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, and emission standards adopted under Chapter 70A.15 RCW.

Does your project comply with all applicable standards identified? ☑ **Yes** ☐ **No**

VIII. Best Available Control Technology

☑ Provide a complete evaluation of Best Available Control Technology (BACT) for your proposal.

IX. Ambient Air Impacts Analyses

Please provide the following:

☑ Ambient air impacts analyses for Criteria Air Pollutants (including fugitive emissions)

☑ Ambient air impacts analyses for Toxic Air Pollutants (including fugitive emissions)

☑ Discharge point data for each point included in air impacts analyses (include only if modeling is required)

- ☑ Exhaust height
- ☑ Exhaust inside dimensions (ex. diameter or length and width)
- ☑ Exhaust gas velocity or volumetric flow rate
- ☑ Exhaust gas exit temperature
- ☑ The volumetric flow rate
- ☑ Description of the discharges (i.e., vertically or horizontally) and whether there are any obstructions (ex., raincap)
- ☑ Identification of the emission unit(s) discharging from the point
- ☑ The distance from the stack to the nearest property line
- ☑ Emission unit building height, width, and length
- ☑ Height of tallest building on-site or in the vicinity and the nearest distance of that building to the exhaust
- ☑ Whether the facility is in an urban or rural location

Does your project cause or contribute to a violation of any ambient air quality standard or acceptable source impact level? ☐ **Yes** ☑ **No**

To request ADA accommodation, call Ecology at (360) 407-6800, 711 (relay service), or (877) 833-6341 (TTY)

[1] http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150

Tri-Cities Grain

Criteria Pollutants

	New Dryer		Existing Dryer		Modified Storage Piles[1]		Existing Storage Piles[2]		Conveyor from SP5 to SP6		Transfers[3]					
Pollutant	**lb/yr**	**ton/yr**	**lb/yr**	**tpy**	**lb/yr**	**tpy**	**lb/yr**	**tpy**	**lb/yr**	**tpy**	**tpy**	**Δ lb/yr**	**Δ tpy**	**Total Modified (tpy)**	**Exemption Level (tpy)**	**Permit and Modelling Required[4]**
NO_x	5.07E+03	2.54E+00	5.07E+03	2.54E+00								0.00E+00	0.00E+00	2.54E+00	2.0	No
CO	4.18E+03	2.09E+00	4.18E+03	2.09E+00								0.00E+00	0.00E+00	2.09E+00	5.0	No
PM_{10}	1.68E+04	8.41E+00	1.68E+04	8.41E+00	6.73E+01	3.37E-02	3.57E+01	1.78E-02	1.43E+03	7.14E-01	3.59E+00	1.46E+03	7.30E-01	1.28E+01	0.5	Yes
$PM_{2.5}$	2.98E+03	1.49E+00	2.98E+03	1.49E+00	1.02E+01	5.10E-03	5.41E+00	2.70E-03	2.44E+02	1.22E-01		2.48E+02	1.24E-01	1.62E+00	0.75	No
Lead	2.29E-02	1.14E-05	2.29E-02	1.14E-05								0.00E+00	0.00E+00	1.14E-05	5.0E-03	No
SO_2	2.75E+01	1.37E-02	2.75E+01	1.37E-02								0.00E+00	0.00E+00	1.37E-02	2.0	No
VOC	2.52E+02	1.26E-01	2.52E+02	1.26E-01								0.00E+00	0.00E+00	1.26E-01	2.0	No

Greenhouse Gases

	New Dryer				Existing Dryer						
Pollutant	**lb/yr**	**metric ton/yr**	**Global Warming Potential (metric tpy)**	**CO_2e (metric tpy)**	**lb/yr**	**metric ton/yr**	**Global Warming Potential (metric tpy)**	**CO_2e (metric tpy)**	**Δ CO_2e**	**Exceeds WA GHG Threshold?**	**Exceeds Federal GHG Threshold?**
CO_2	5.49E+06	2.49E+03	1	2.49E+03	5.49E+06	2.49E+03	1	2.49E+03			
N_2O	1.01E+02	4.57E-02	265	1.21E+01	1.01E+02	4.57E-02	265	1.21E+01			
Methane	1.05E+02	4.77E-02	28	1.34E+00	1.05E+02	4.77E-02	28	1.34E+00			
Total				2.50E+03				2.50E+03	0.00E+00	No	No

Toxic Air Pollutants

		New Dryer		Existing Dryer							
CAS #	**Pollutant**	**lb/hr**	**lb/yr**	**lb/hr**	**lb/yr**	**Δ lb/hr**	**Δ lb/yr**	**Averaging Period**	**De Minimis (lb/avg per)**	**Permitting Required?**	**SQER (lb/avg per)**	**Modeling Required?**
107-02-8	Acrolein	1.10E-04	1.24E-01	1.10E-04	1.24E-01	0.00E+00	0.00E+00	24-hr	1.30E-03	No	2.60E-02	No
56-55-3	Benz(a)anthracene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	4.50E-02	No	8.90E-01	No
71-43-2	Benzene	8.58E-05	9.61E-02	8.58E-05	9.61E-02	0.00E+00	0.00E+00	Year	1.00E+00	No	2.10E+01	No
50-32-8	Benzo(a)pyrene	4.90E-08	5.49E-05	4.90E-08	5.49E-05	0.00E+00	0.00E+00	Year	8.20E-03	No	1.60E-01	No
205-99-2	Benzo(b)fluoranthene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	4.50E-02	No	8.90E-01	No
207-08-9	Benzo(k)fluoranthene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	4.50E-02	No	8.90E-01	No
630-08-0	Carbon Monoxide	3.73E+00	3.48E+02	3.73E+00	3.48E+02	0.00E+00	0.00E+00	1-hr	1.10E+00	No	4.30E+01	No
218-01-9	Chrysene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	4.50E-01	No	8.90E+00	No
53-70-3	Dibenzo(a,h)anthracene	4.90E-08	5.49E-05	4.90E-08	5.49E-05	0.00E+00	0.00E+00	Year	4.10E-03	No	8.20E-02	No
57-97-6	7,12-Dimethylbenz(a)anthracene	6.54E-07	7.32E-04	6.54E-07	7.32E-04	0.00E+00	0.00E+00	Year	6.90E-05	No	1.40E-03	No
50-00-0	Formaldehyde	3.06E-03	3.43E+00	3.06E-03	3.43E+00	0.00E+00	0.00E+00	Year	1.40E+00	No	2.70E+01	No
110-54-3	n-Hexane	7.35E-02	8.24E+01	7.35E-02	8.24E+01	0.00E+00	0.00E+00	24-hr	2.60E+00	No	5.20E+01	No
193-39-5	Indeno(1,2,3-cd)pyrene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	4.50E-02	No	8.90E-01	No
56-49-5	3-Methylcholanthrene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	7.80E-04	No	1.60E-02	No
91-20-3	Naphthalene	2.49E-05	2.79E-02	2.49E-05	2.79E-02	0.00E+00	0.00E+00	Year	2.40E-01	No	4.80E+00	No
10102-44-0	Nitrogen Dioxide	4.53E+00	4.18E+03	4.53E+00	4.18E+03	0.00E+00	0.00E+00	1-hr	4.60E-01	No	8.70E-01	No
108-88-3	Toluene	1.39E-04	1.56E-01	1.39E-04	1.56E-01	0.00E+00	0.00E+00	24-hr	1.90E+01	No	3.70E+02	No
7440-38-2	Arsenic	8.17E-06	9.15E-03	8.17E-06	9.15E-03	0.00E+00	0.00E+00	Year	2.50E-03	No	4.90E-02	No
7440-41-7	Beryllium	4.90E-07	5.49E-04	4.90E-07	5.49E-04	0.00E+00	0.00E+00	Year	3.40E-03	No	6.80E-02	No
7440-43-9	Cadmium	4.49E-05	5.03E-02	4.49E-05	5.03E-02	0.00E+00	0.00E+00	Year	1.90E-03	No	3.90E-02	No
7440-47-3	Chromium	5.72E-05	6.41E-02	5.72E-05	6.41E-02	0.00E+00	0.00E+00	24-hr	1.90E-02	No	3.70E-01	No
7440-48-4	Cobalt	3.43E-06	3.84E-03	3.43E-06	3.84E-03	0.00E+00	0.00E+00	24-hr	3.70E-04	No	7.40E-03	No
7440-50-8	Copper	3.47E-05	3.89E-02	3.47E-05	3.89E-02	0.00E+00	0.00E+00	1-hr	9.30E-03	No	1.90E-01	No
7439-96-5	Manganese	1.55E-05	1.74E-02	1.55E-05	1.74E-02	0.00E+00	0.00E+00	24-hr	1.10E-03	No	2.20E-02	No
7439-97-6	Mercury	1.06E-05	1.19E-02	1.06E-05	1.19E-02	0.00E+00	0.00E+00	24-hr	1.10E-04	No	2.20E-03	No
7440-02-0	Nickel	8.58E-05	9.61E-02	8.58E-05	9.61E-02	0.00E+00	0.00E+00	Year	3.10E-02	No	6.20E-01	No
7782-49-2	Selenium	9.81E-07	1.10E-03	9.81E-07	1.10E-03	0.00E+00	0.00E+00	24-hr	7.40E-02	No	1.50E+00	No
7446-09-5	Sulfur Dioxide	2.45E-02	2.75E+01	2.45E-02	2.75E+01	0.00E+00	0.00E+00	1-hr	4.60E-01	No	1.20E+00	No
7440-62-2	Vanadium	9.40E-05	1.05E-01	9.40E-05	1.05E-01	0.00E+00	0.00E+00	24-hr	3.7E-04	No	7.40E-03	No

1. Emissions from storage piles 1-6
2. Emissions from storage piles 1-4
3. From 2010 NOC Application
4. Permit and modelling required based on change in emission from drying and storage piles + emissions from new conveyor

Dryer (New) Emissions

Max Throughput	280000	ton/yr		
	10000000	bu/yr	bushels	
Heat Capacity	41.918	MMBtu/hr		
Natural Gas Heating Value	1,026	Btu/scf	40 CFR 98, Table C-1 [12/9/2016]	

Operation Schedule

16	hr/day
7	day/wk
10	wk/yr
56	lb/bu

Criteria Pollutants

Pollutant	Emission Factor[1]	Units	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)	Potential Emissions (tpy)
NO_X[2]	NA		4.527	5070.24	2.54E+00
CO[2]	NA		3.731	4178.72	2.09E+00
PM	7.6	lb/10^6 scf	3.11E-01	347.76	1.74E-01
PM_{10}	7.6	lb/10^6 scf	3.11E-01	347.76	1.74E-01
$PM_{2.5}$[3]	7.6	lb/10^6 scf	3.11E-01	347.76	1.74E-01
Lead[4]	0.0005	lb/10^6 scf	2.04E-05	0.02	1.14E-05
SO_2	0.6	lb/10^6 scf	2.45E-02	27.46	1.37E-02
VOC	5.5	lb/10^6 scf	2.25E-01	251.67	1.26E-01

Greenhouse Gases

Pollutant	Emission Factor[1] lb/10^6 scf	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)	Potential Emissions Metric tpy	Global Warming Potential[5] (metric tpy)	CO_2e (metric tpy)
CO_2	120,000	4.90E+03	5.49E+06	2.49E+03	1	2.49E+03
N_2O	2.2	8.99E-02	1.01E+02	4.57E-02	265	1.21E+01
Methane	2.3	9.40E-02	1.05E+02	4.77E-02	28	1.34E+00
Total						2.50E+03

Toxic Air Pollutants

CAS #	Pollutant	Emission Factor[4] (lb/MMscf)	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)
107-02-8	Acrolein	2.7E-03	1.10E-04	1.24E-01
56-55-3	Benz(a)anthracene	1.8E-06	7.35E-08	8.24E-05
71-43-2	Benzene	2.1E-03	8.58E-05	9.61E-02
50-32-8	Benzo(a)pyrene	1.2E-06	4.90E-08	5.49E-05
205-99-2	Benzo(b)fluoranther	1.8E-06	7.35E-08	8.24E-05
207-08-9	Benzo(k)fluoranther	1.8E-06	7.35E-08	8.24E-05
630-08-0	Carbon Monoxide	NA	3.73E+00	3.48E+02
218-01-9	Chrysene	1.8E-06	7.35E-08	8.24E-05
53-70-3	Dibenzo(a,h)anthrac	1.2E-06	4.90E-08	5.49E-05
57-97-6	7,12-Dimethylbenz(a)anthracene	1.6E-05	6.54E-07	7.32E-04
50-00-0	Formaldehyde	7.5E-02	3.06E-03	3.43E+00
110-54-3	n-Hexane	1.8E+00	7.35E-02	8.24E+01
193-39-5	Indeno(1,2,3-cd)pyr	1.8E-06	7.35E-08	8.24E-05
56-49-5	3-Methylcholanthrer	1.8E-06	7.35E-08	8.24E-05
91-20-3	Naphthalene	6.1E-04	2.49E-05	2.79E-02
10102-44-0	Nitrogen Dioxide	NA	4.53E+00	4.18E+03
108-88-3	Toluene	3.4E-03	1.39E-04	1.56E-01
7440-38-2	Arsenic	2.0E-04	8.17E-06	9.15E-03
7440-41-7	Beryllium	1.2E-05	4.90E-07	5.49E-04
7440-43-9	Cadmium	1.1E-03	4.49E-05	5.03E-02
7440-47-3	Chromium	1.4E-03	5.72E-05	6.41E-02
7440-48-4	Cobalt	8.4E-05	3.43E-06	3.84E-03
7440-50-8	Copper	8.5E-04	3.47E-05	3.89E-02
7439-96-5	Manganese	3.8E-04	1.55E-05	1.74E-02
7439-97-6	Mercury	2.6E-04	1.06E-05	1.19E-02
7440-02-0	Nickel	2.1E-03	8.58E-05	9.61E-02
7782-49-2	Selenium	2.4E-05	9.81E-07	1.10E-03
7446-09-5	Sulfur Dioxide	NA	2.45E-02	2.75E+01
7440-62-2	Vanadium	2.3E-03	9.40E-05	1.05E-01

1. AP-42 Section 1.4, Table 1.4-1 and 1.4-2 (July, 2008)
2. Nox and CO emissions from manufacturers data
3. PM2.5 and PM10 emissions assumed to be the same
4. AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (July, 2008)
5. GWP factors per 40 CFR 98 Table A-1.

Emissions from Grain Drying

PM Emission Rate 14.716 lb/hr (*from manufacturer data*)

	lb/hr	lb/day	lb/yr	ton/yr
PM[6]	14.716	235.456	16481.92	8.24096
PM10[6]	14.716	235.456	16481.92	8.24096
PM2.5[7]	2.35	37.6	2632	1.316

	Emission Factor (lb/Ton)			Emission Factor Source
	PM	PM10	PM2.5	
Column Dryer	0.22	0.055	0.0094	AP-42, 5th Edition, Chapter 9.9.1, Table 9.9.1-1

6. Calculations for these factors used PM emission rate from manufacturer
7. Calculations for $PM_{2.5}$ used emission factor from AP-42

Dryer (Existing) Emissions

Max Throughput	280000	ton/yr		
	10000000	bu/yr	bushels	
Heat Capacity	41.918	MMBtu/hr		
Natural Gas Heating Value	1,026	Btu/scf	40 CFR 98, Table C-1 [12/9/2016]	

Operation Schedule

16	hr/day
7	day/wk
10	wk/yr
56	lb/bu

Criteria Pollutants

Pollutant	Emission Factor[1]	Units	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)	Potential Emissions (tpy)
NO_X[2]	NA		4.527	5070.24	2.54E+00
CO[2]	NA		3.731	4178.72	2.09E+00
PM	7.6	lb/10^6 scf	0.3105037	347.76	1.74E-01
PM_{10}	7.6	lb/10^6 scf	0.3105037	347.76	1.74E-01
$PM_{2.5}$[3]	7.6	lb/10^6 scf	0.3105037	347.76	1.74E-01
Lead[4]	0.0005	lb/10^6 scf	2.043E-05	0.02	1.14E-05
SO_2	0.6	lb/10^6 scf	0.0245135	27.46	1.37E-02
VOC	5.5	lb/10^6 scf	0.2247066	251.67	1.26E-01

Greenhouse Gases

Pollutant	Emission Factor[1] lb/10^6 scf	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)	Potential Emissions Metric tpy	Global Warming Potential[5] (metric tpy)	CO_2e (metric tpy)
CO_2	120,000	4.90E+03	5.49E+06	2.49E+03	1	2.49E+03
N_2O	2.2	8.99E-02	1.01E+02	4.57E-02	265	1.21E+01
Methane	2.3	9.40E-02	1.05E+02	4.77E-02	28	1.34E+00
Total						2.50E+03

Toxic Air Pollutants

CAS #	Pollutant	Emission Factor[4] (lb/MMscf)	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)
107-02-8	Acrolein	2.7E-03	1.10E-04	1.24E-01
56-55-3	Benz(a)anthracene	1.8E-06	7.35E-08	8.24E-05
71-43-2	Benzene	2.1E-03	8.58E-05	9.61E-02
50-32-8	Benzo(a)pyrene	1.2E-06	4.90E-08	5.49E-05
205-99-2	Benzo(b)fluoranther	1.8E-06	7.35E-08	8.24E-05
207-08-9	Benzo(k)fluoranther	1.8E-06	7.35E-08	8.24E-05
630-08-0	Carbon Monoxide	NA	3.73E+00	3.48E+02
218-01-9	Chrysene	1.8E-06	7.35E-08	8.24E-05
53-70-3	Dibenzo(a,h)anthrac	1.2E-06	4.90E-08	5.49E-05
57-97-6	7,12-Dimethylbenz(a)anthracene	1.6E-05	6.54E-07	7.32E-04
50-00-0	Formaldehyde	7.5E-02	3.06E-03	3.43E+00
110-54-3	n-Hexane	1.8E+00	7.35E-02	8.24E+01
193-39-5	Indeno(1,2,3-cd)pyr	1.8E-06	7.35E-08	8.24E-05
56-49-5	3-Methylcholanthrer	1.8E-06	7.35E-08	8.24E-05
91-20-3	Naphthalene	6.1E-04	2.49E-05	2.79E-02
10102-44-0	Nitrogen Dioxide	NA	4.53E+00	4.18E+03
108-88-3	Toluene	3.4E-03	1.39E-04	1.56E-01
7440-38-2	Arsenic	2.0E-04	8.17E-06	9.15E-03
7440-41-7	Beryllium	1.2E-05	4.90E-07	5.49E-04
7440-43-9	Cadmium	1.1E-03	4.49E-05	5.03E-02
7440-47-3	Chromium	1.4E-03	5.72E-05	6.41E-02
7440-48-4	Cobalt	8.4E-05	3.43E-06	3.84E-03
7440-50-8	Copper	8.5E-04	3.47E-05	3.89E-02
7439-96-5	Manganese	3.8E-04	1.55E-05	1.74E-02
7439-97-6	Mercury	2.6E-04	1.06E-05	1.19E-02
7440-02-0	Nickel	2.1E-03	8.58E-05	9.61E-02
7782-49-2	Selenium	2.4E-05	9.81E-07	1.10E-03
7446-09-5	Sulfur Dioxide	NA	2.45E-02	2.75E+01
7440-62-2	Vanadium	2.3E-03	9.40E-05	1.05E-01

1. AP-42 Section 1.4, Table 1.4-1 and 1.4-2 (July, 2008)
2. Nox and CO emissions from manufacturers data
3. PM2.5 and PM10 emissions assumed to be the same
4. AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (July, 2008)
5. GWP factors per 40 CFR 98 Table A-1.

Emissions from Grain Drying

PM Emission Rate 14.716 lb/hr (*from manufacturer data*)

	lb/hr	lb/day	lb/yr	ton/yr
PM[6]	14.716	235.456	16481.92	8.24096
PM10[6]	14.716	235.456	16481.92	8.24096
PM2.5[7]	2.35	37.6	2632	1.316

	Emission Factor (lb/Ton)			Emission Factor Source
	PM	PM10	PM2.5	
Column Dryer	0.22	0.055	0.0094	AP-42, 5th Edition, Chapter 9.9.1, Table 9.9.1-1

6. Calculations for these factors used PM emission rate from manufacturer
7. Calculations for $PM_{2.5}$ used emission factor from AP-42

Storage Piles (New) Emissions

56 lb/bushel

Storage Pile 1	1.40E+06	bushel	Storage Pile 2	1.40E+06	bushel	Storage Pile 3	1.20E+06 bushel
	7.84E+07	lbs		7.84E+07	lbs		6.72E+07 lbs
	3.92E+04	tons		3.92E+04	tons		3.36E+04 tons
Storage Pile 4	1.00E+06	bushel	Storage Pile 5	1.80E+06	bushel	Storage Pile 6	1.50E+06 bushel
	5.60E+07	lbs		1.01E+08	lbs		8.40E+07 lbs
	2.80E+04	tons		5.04E+04	tons		4.20E+04 tons

			Uncontrolled		90% Emissions Control[3]	
Source	**Pollutant**	**Emission Factor (lb/ton)[1]**	**lb/yr**	**ton/yr**	**lb/yr**	**ton/yr**
Storage Pile 1	PM_{10}	2.90E-04	1.14E+01	5.68E-03	1.14E+00	5.68E-04
	$PM_{2.5}$	4.39E-05	1.72E+00	8.60E-04	1.72E-01	8.60E-05
Storage Pile 2	PM_{10}	2.90E-04	1.14E+01	5.68E-03	1.14E+00	5.68E-04
	$PM_{2.5}$	4.39E-05	1.72E+00	8.60E-04	1.72E-01	8.60E-05
Storage Pile 3	PM_{10}	2.90E-04	9.74E+00	4.87E-03	9.74E-01	4.87E-04
	$PM_{2.5}$	4.39E-05	1.47E+00	7.37E-04	1.47E-01	7.37E-05
Stoage Pile 4	PM_{10}	2.90E-04	8.11E+00	4.06E-03	8.11E-01	4.06E-04
	$PM_{2.5}$	4.39E-05	1.23E+00	6.14E-04	1.23E-01	6.14E-05
Stoage Pile 5	PM_{10}	2.90E-04	1.46E+01	7.30E-03	1.46E+00	7.30E-04
	$PM_{2.5}$	4.39E-05	2.21E+00	1.11E-03	2.21E-01	1.11E-04
Storage Pile 6	PM_{10}	2.90E-04	1.22E+01	6.08E-03	1.22E+00	6.08E-04
	$PM_{2.5}$	4.39E-05	1.84E+00	9.21E-04	1.84E-01	9.21E-05
Total	PM_{10}		6.73E+01	3.37E-02	6.73E+00	3.37E-03
	$PM_{2.5}$		1.02E+01	5.10E-03	1.02E+00	5.10E-04

k [2]	0.35	PM_{10}	
	0.053	$PM_{2.5}$	
U	10.0	mph	*(Based on 2010 NOC)*
M	10	%	*(Based on 2010 NOC)*

1. Emission factors calculated using $E(lb/ton)=0.0032k(U/5)^{1.3}(M/2)^{-1.4}$ from AP-42, Chapter 13.2.4
2. Factors for k found in AP-42, Chapter 13.2.4
3. 90% control emissions based on 2010 NOC statement

Storage Pile (Old) Emissions

56 lb/bushel

Storage Pile 1	1.40E+06 bushel	Storage Pile 2	1.20E+06 bushel	Storage Pile 3	1.00E+06 bushel	Stoage Pile 4	8.00E+05 bushel
	7.84E+07 lbs		6.72E+07 lbs		5.60E+07 lbs		4.48E+07 lbs
	3.92E+04 tons		3.36E+04 tons		2.80E+04 tons		2.24E+04 tons

			Uncontrolled		90% Emissions Control[3]	
Source	**Pollutant**	**Emission Factor (lb/ton)[1]**	**lb/yr**	**ton/yr**	**lb/yr**	**ton/yr**
Storage Pile 1	PM_{10}	2.90E-04	1.14E+01	5.68E-03	1.14E+00	5.68E-04
	$PM_{2.5}$	4.39E-05	1.72E+00	8.60E-04	1.72E-01	8.60E-05
Storage Pile 2	PM_{10}	2.90E-04	9.74E+00	4.87E-03	9.74E-01	4.87E-04
	$PM_{2.5}$	4.39E-05	1.47E+00	7.37E-04	1.47E-01	7.37E-05
Storage Pile 3	PM_{10}	2.90E-04	8.11E+00	4.06E-03	8.11E-01	4.06E-04
	$PM_{2.5}$	4.39E-05	1.23E+00	6.14E-04	1.23E-01	6.14E-05
Stoage Pile 4	PM_{10}	2.90E-04	6.49E+00	3.25E-03	6.49E-01	3.25E-04
	$PM_{2.5}$	4.39E-05	9.83E-01	4.91E-04	9.83E-02	4.91E-05
Total	PM_{10}	2.90E-04	3.57E+01	1.78E-02	3.57E+00	1.78E-03
	$PM_{2.5}$	4.39E-05	5.41E+00	2.70E-03	5.41E-01	2.70E-04

k [2]	0.35	PM10	
	0.053	PM2.5	
U	10.0	mph	*(Based on data from 2010 NOC)*
M	10	%	*(Based on data from 2010 NOC)*

1. Emission factors calculated using $E(lb/ton)=0.0032k(U/5)^{1.3}(M/2)^{-1.4}$ from AP-42, Chapter 13.2.4
2. Factors for k found in AP-42, Chapter 13.2.4
3. 90% control emissions based on 2010 NOC statement

Overhead Conveyor from SP5 to SP6

		Emission Rate	
	EF (lb/ton)[1]	lb/yr	ton/yr
PM_{10}	0.034	1.43E+03	7.14E-01
$PM_{2.5}$	0.0058	2.44E+02	1.22E-01

Storage Pile 6	1.50E+06	bushel	56 bu/lb
	8.40E+07	lbs	
	4.20E+04	tons	

1. AP 42 Section 9.9.1, Table 9.9.1 (May 2023)

Notice of Construction Application

A notice of construction permit is required before installing a new source of air pollution or modifying an existing source of air pollution. This application applies to facilities in Ecology's jurisdiction. Submit this application for review of your project. For general information about completing the application, refer to Ecology Forms ECY 070-410a-g, "Instructions for Ecology's Notice of Construction Application."

Ecology offers up to two hours of free pre-application assistance. We encourage you to schedule a pre-application meeting with the contact person specified for the location of your proposal, below. If you use up your two hours of free pre-application assistance, we will continue to assist you after you submit Part 1 of the application and the application fee. You may schedule a meeting with us at any point in the process.

Upon completion of the application, please enclose a check for the initial fee and mail to:

Department of Ecology
Cashiering Unit
PO Box 47611
Olympia, WA 98504-7611

For Fiscal Office Use Only: 0299-3030404-B00-216--001--000404

Check the box for the location of your proposal. For assistance, call the appropriate office listed below:

Check box	Ecology Permitting Office	Contact
☐	**Chelan, Douglas, Kittitas, Klickitat, or Okanogan County** Ecology Central Regional Office (509) 575-2490	Lynnette Haller (509) 457-7126 lynnette.haller@ecy.wa.gov
☑	**Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla, or Whitman County** Ecology Eastern Regional Office (509) 329-3400	Karin Baldwin (509) 329-3452 karin.baldwin@ecy.wa.gov
☐	**San Juan County** Ecology Northwest Regional Office (206) 594-0000	David Adler (425) 649-7267 david.adler@ecy.wa.gov
☐	**For actions taken at Kraft and Sulfite Paper Mills and Aluminum Smelters Only** Ecology Industrial Section (360) 407-6900	James DeMay (360) 407-6868 james.demay@ecy.wa.gov
☐	**For actions taken on the US Department of Energy Hanford Reservation Only** Ecology Nuclear Waste Program (509) 372-7950	Lilyann Murphy (509) 372-7951 lilyann.murphy@ecy.wa.gov

Check the box below for the fee that applies to your application.

New project or equipment:

- ☐ **$1,904: Basic project** initial fee covers up to 16 hours of review.
- ☐ **$12,614: Complex project** initial fee covers up to 106 hours of review.

Change to an existing permit or equipment:

- ☐ **$357: Administrative or simple change** initial fee covers up to 3 hours of review. Ecology may determine your change is complex during the completeness review of your application. If you project is complex, you must pay the additional xxx before we will continue working on your application
- ☑ **$1,190: Complex** change initial fee covers up to 10 hours of review
- ☐ **$350flat fee**: Replace or alter control technology equipment under WAC 173-400-114. Ecology will contact you if we determine your change belongs in another fee category. You must pay the fee associated with that category before we will continue working on your application.

Read each statement below, then check the box next to it to acknowledge that you agree.

- ☑ The initial fee you submitted may not cover the cost of processing your application. Ecology will track the number of hours spent on your project. If the number of hours Ecology spends exceeds the hours included in your initial fee, Ecology will bill you $119 per hour for the extra time.
- ☑ You must include all information requested by this application. Ecology may not process your application if it does not include all the information requested.
- ☑ Submittal of this application allows Ecology staff to visit and inspect your facility.

Part 1: General Information

I. Project, Facility, and Company Information

1. Project Name: Dryer Addition
2. Facility Name: Tri-Cities Grain
3. Facility Street Address:

   600 Tank Farm Rd, Pasco, WA 99301

4. Facility Legal Description: Parcel #112570040
5. Company Legal Name (if different from Facility Name):

   _____

6. Company Mailing Address (street, city, state, zip)

   600 Tank Farm Rd, Pasco, WA 99301

II. Contact Information and Certification

1. Facility Contact Name (who will be onsite): Mark Weber
2. Facility Contact Mailing Address (if different than Company Mailing Address:

   _____

3. Facility Contact Phone Number: (509) 545-0900
4. Facility Contact E-mail: mark@tcgrain.com
5. Billing Contact Name (who should receive billing information):
   Mark Weber
6. Billing Contact Mailing Address (if different Company Mailing Address):

7. Billing contact Phone Number: (509) 545-0900
8. Billing Contact E-mail: mark@tcgrain.com
9. Consultant Name (optional – if 3rd party hired to complete application elements):
   Beth Fifield Hodgson
10. Consultant Organization/Company: Spring Environmental, Inc
11. Consultant Mailing Address (street, city, state, zip): 1011 N Cedar St, Spokane, WA 99201
12. Consultant Phone Number: (509) 328-7500
13. Consultant E-mail: beth@springenvironmental.com
14. Responsible Official Name and Title (who is responsible for project policy or decision making):
    Mark Weber
15. Responsible Official Phone: (509) 545-0900
16. Responsible Official E-mail: mark@tcgrain.com
17. Responsible Official Certification and Signature:

    I certify that the information on this application is accurate and complete.

    Signature: Mark Weber Date: 6/3/25

Part 2: Technical Information

The Technical Information may be sent with this application form to the Cashiering Unit, or may be sent directly to the Ecology regional office with jurisdiction along with a copy of this application form.

For all sections, check the box next to each item as you complete it.

III. Project Description

- [x] Written narrative describing your proposed project.
- [x] Projected construction start and completion dates.
- [x] Operating schedule and production rates.
- [x] List of all major process equipment and manufacturer and maximum rated capacity.
- [x] Process flow diagram with all emission points identified.
- [x] Plan view site map.
- [x] Manufacturer specification sheets for major process equipment components
- [ ] Manufacturer specification sheets for pollution control equipment.
- [x] Fuel specifications, including type, consumption (per hour and per year) and percent sulfur.

IV. State Environmental Policy Act (SEPA) Compliance

Check the appropriate box below.

- [ ] SEPA review is complete. Include a copy of the final SEPA checklist and SEPA determination (e.g., DNS, MDNS, and EIS) with your application.
- [x] SEPA review has not been conducted:
  - [ ] If review will be conducted by another agency, list the agency. You must provide a copy of the final SEPA checklist and SEPA determination before Ecology will issue your permit. Agency reviewing SEPA: _____
  - [x] If the review will be conducted by Ecology, fill out a SEPA checklist and submit it with your application. You can find a SEPA checklist online at https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-document-templates

V. Emissions Estimations of Criteria Pollutants

Does your project generate criteria air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please proved the following information regarding your criteria emissions in the application.

- [x] The names of the criteria air pollutants emitted (i.e., NO_X, SO_2, CO, $PM_{2.5}$, PM_{10}, TSP, VOC, and Pb)
- [x] Potential emissions of criteria air pollutants in tons per hour, tons per day, and tons per year (include calculations)
- [x] If there will be any fugitive criteria pollutant emissions, clearly identify the pollutant and quantity

VI. Emissions Estimations of Toxic Air Pollutants

Does your project generate toxic air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please provide the following information regarding your toxic air pollutant emissions in your application.

☑ The names of the toxic air pollutants emitted (specified in WAC 173-460-150[1])

☑ Potential emissions of toxic air pollutants in pounds per hour, pounds per day, and pounds per year (include calculations)

☑ If there will be any fugitive toxic air pollutant emissions, clearly identify the pollutant and quantity

VII. Emission Standard Compliance

☑ Provide a list of all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, and emission standards adopted under Chapter 70A.15 RCW.

Does your project comply with all applicable standards identified? ☑ **Yes** ☐ **No**

VIII. Best Available Control Technology

☑ Provide a complete evaluation of Best Available Control Technology (BACT) for your proposal.

IX. Ambient Air Impacts Analyses

Please provide the following:

☑ Ambient air impacts analyses for Criteria Air Pollutants (including fugitive emissions)

☑ Ambient air impacts analyses for Toxic Air Pollutants (including fugitive emissions)

☑ Discharge point data for each point included in air impacts analyses (include only if modeling is required)

- ☑ Exhaust height
- ☑ Exhaust inside dimensions (ex. diameter or length and width)
- ☑ Exhaust gas velocity or volumetric flow rate
- ☑ Exhaust gas exit temperature
- ☑ The volumetric flow rate
- ☑ Description of the discharges (i.e., vertically or horizontally) and whether there are any obstructions (ex., raincap)
- ☑ Identification of the emission unit(s) discharging from the point
- ☑ The distance from the stack to the nearest property line
- ☑ Emission unit building height, width, and length
- ☑ Height of tallest building on-site or in the vicinity and the nearest distance of that building to the exhaust
- ☑ Whether the facility is in an urban or rural location

Does your project cause or contribute to a violation of any ambient air quality standard or acceptable source impact level? ☐ **Yes** ☑ **No**

To request ADA accommodation, call Ecology at (360) 407-6800, 711 (relay service), or (877) 833-6341 (TTY)

[1] http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150

ATTACHMENT 1

Process Description and Facility Layout

Tri-Cities Grain
Dryer Addition – Project Description

Background

Tri-Cities Grain was founded in 1999 and currently operates a five hundred thousand bushel river terminal on the Snake River in Franklin County. They have storage space for up to 680 thousand bushels in upright storage bins and 4.2 million bushels in ground pile storage. Tri-Cities Grain handles multiple types of wheat as well as trading corn and barely into the local feed markets. Tri-Cities Grain operates at 600 Tank Farm Rd in Pasco, Washington in Franklin County. Tri-Cities Grain currently is permitted under Order No. 12AQ-E454.

Project Description

Tri-Cities Grain is proposing adding a Zimmerman Z-7060 tower dryer to their facility. Tri-Cities Grain is also proposing two additional storage piles, an overhead conveyor between the two new piles, and changes to capacities of 3 of their 4 existing storage piles.

Project Timeline

Tri-Cities Grain plans to have the dryer up and running by October 1, 2025.

Operations Schedule

The estimated operation schedule for the Zimmerman tower is 16 hours a day, 7 days a week for 10 weeks of the year.

Equipment List

- Zimmerman Z-7060, seven thousand bushels per hour (bph) natural gas fired tower dryer; burner capacity 73 MMBtu/hr; average heat 42 MMBtu/hr

Fuel Specifications

- Natural gas

Storage Pile/Conveyor List

- Storage Pile 1 – No change from 1,400,000 bushel capacity
- Storage Pile 2 – Increase capacity from 1,200,000 bushels to 1,400,000 bushels
- Storage Pile 3 – Increase capacity from 1,000,000 bushels to 1,200,000 bushels
- Storage Pile 4 – Increase capacity from 800,000 bushels to 1,000,000 bushels
- Storage Pile 5 – New storage pile proposed with capacity of 1,800,000 bushels
- Storage Pile 6 – New storage pile proposed with capacity of 1,500,000 bushels
- Overhead conveyor between piles 5 and 6

Emissions Calculations

Emission calculations for the drying tower, storage piles, and conveyor can be found in Attachment #3. Emission levels from three criteria pollutants exceed exemption levels and trigger permitting and modeling. No toxic air pollutants (TAPs) exceed their *de minimis* levels.

Federal Rule Applicability

- 40 CFR 63 Subpart A (General Provisions)
- 40 CFR 70.2 - Source is a non-major (area) source of hazardous air pollutants (HAPs) and non-major source of criteria pollutants
- 40 CFR 60 Subpart DD (Standards of Performance for Grain Elevators)

ATTACHMENT 2

SEPA Checklist

A. Background

1. **Name of proposed project, if applicable:**

   Drying tower addition, storage pile addition, changes to existing storage piles

2. **Name of applicant:**

   Tri-Cities Grain

3. **Address and phone number of applicant and contact person:**

   600 Tank Farm Rd

   Pasco, WA 99301

   Project Contact: Mark Weber @ (509) 545-0900

   Environmental Contact: Beth Fifield Hodgson @ (509) 328-7500

4. **Date checklist prepared:**

   February 27, 2025

5. **Agency requesting checklist:**

   Washington State Department of Ecology

6. **Proposed timing of schedule (including phasing, if applicable):**

   Drying tower addition is proposed to be up and running by October 1, 2025

7. **Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

   No

8. **List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

   Department of Ecology – NOC Application

9. **Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

   No

10. **List any government approvals or permits that will be needed for your proposal, if known.**

    Department of Ecology – NOC Approval Order

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Tri-Cities Grain was founded in 1999 and currently operates a five hundred thousand bushel river terminal on the Snake River in Franklin County. They have storage space for up to 680 thousand bushels in upright bin storage and 4.2 million bushels in ground pile storage. Tri-Cities Grain handles multiple types of wheat as well as trading corn and barely into the local feed markets. Tri-Cities Grain operates at 600 Tank Farm Rd in Pasco, Washington in Franklin County. Tri-Cities Grain currently is permitted under Order No. 12AQ-E454. Tri-Cities Grain is adding a Zimmerman Z-7060 tower dryer to their facility. Tri-Cities Grain is also proposing two additional storage piles, an overhead conveyor between the new storage piles, and changes to capacities of 3 of their 4 existing storage piles.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Parcel # 112570040

1. Earth

a. General description of the site:

Circle or highlight one: Flat, rolling, hilly, steep slopes, mountainous, other:

b. What is the steepest slope on the site (approximate percent slope)?

3-5%

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Gravel, silt loam, sandy loam

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

None

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

No

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately the same percentage. Drying tower is 24 feet wide and the facility is approximately in a square shape with 0.25 miles sides. Overall the drying tower will not make a large change in the impervious surfaces

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

NA

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

There is currently a drying tower on site. Emissions from the drying tower include NO_x, CO, PM, lead, SO_2, VOCs, and toxic air pollutants. There are also already multiple storage piles on site that emit PM. There is not expected to be any new types of emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Existing measures in place at facility will continued to be used.

3. Water

a. Surface:

1. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Yes. Facility is located on the banks of the Snake River which flows into the Columbia River.

2. **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

   No. Work for this project does not occur within 200 feet of the described water

3. **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

   NA

4. **Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.**

   No

5. **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

   No

6. **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

   No

b. Ground:

1. **Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.**

   No

2. **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

   None

c. Water Runoff (including stormwater):

1. **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

   No changes in water runoff

2. **Could waste materials enter ground or surface waters? If so, generally describe.**

   No

3. **Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

   NA

d. **Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:**

   NA

4. Plants

a. **Check the types of vegetation found on the site:**

   ☐ **deciduous tree: alder, maple, aspen, other**

   ☐ **evergreen tree: fir, cedar, pine, other**

   ☒ **shrubs**

   ☐ **grass**

   ☐ **pasture**

   ☐ **crop or grain**

   ☐ **orchards, vineyards, or other permanent crops.**

   ☐ **wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other**

   ☐ **water plants: water lily, eelgrass, milfoil, other**

   ☒ **other types of vegetation**

b. **What kind and amount of vegetation will be removed or altered?**

   Dry shrubs will be removed during this project

c. **List threatened and endangered species known to be on or near the site.**

   None

   Reference – US Fish and Wildlife Service

d. **Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.**

   None

e. **List all noxious weeds and invasive species known to be on or near the site.**

   None

5. Animals

a. **List any birds and other animals that have been observed on or near the site or are known to be on or near the site.**

Examples include:

- **Birds: hawk, heron, eagle, songbirds, other:**
- **Mammals: deer, bear, elk, beaver, other:**
- **Fish: bass, salmon, trout, herring, shellfish, other:**

b. **List any threatened and endangered species known to be on or near the site.**

Bull Trout - Threatened

Yellow-billed Cuckoo - Threatened

Monarch Butterfly - Threatened

Reference: IPaC – US Fish and Wildlife Service

c. **Is the site part of a migration route? If so, explain.**

No

d. **Proposed measures to preserve or enhance wildlife, if any.**

None

e. **List any invasive animal species known to be on or near the site.**

None

6. Energy and natural resources

a. **What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.**

Natural gas – Used for manufacturing

b. **Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.**

No

c. **What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.**

There are no new proposed energy conservation features

7. Environmental health

a. **Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.**

Natural gas – Leak Hazard

1. **Describe any known or possible contamination at the site from present or past uses.**

   None

2. **Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**

   None

3. **Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.**

   Natural Gas

4. **Describe special emergency services that might be required.**

   No change in emergency services requirements due to this proposed project

5. **Proposed measures to reduce or control environmental health hazards, if any.**

   No changes to measures to reduce or control environmental health hazard

b. Noise

1. **What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

   Current noise due to site operation and traffic are not expected to affect this project

2. **What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?**

   There will not be an increase in noise as a result of the proposed project

3. **Proposed measures to reduce or control noise impacts, if any:**

   None

8. Land and shoreline use

a. **What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.**

   The current site is industrial. Adjacent properties are also industrial. Proposal will not affect current land uses on adjacent properties

b. **Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?**

   No change in land use

1. **Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?**

   No

c. Describe any structures on the site.

Facility currently has six grain silos, a drying tower, a building for maintenance, and an administrative building

d. Will any structures be demolished? If so, what?

No existing structures will be demolished

e. What is the current zoning classification of the site?

I-2: General Industrial

f. What is the current comprehensive plan designation of the site?

Industrial

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable. No shoreline nearby

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

No. Facility is located next to an area deemed "steep slope" but site is not in that critical area.

i. Approximately how many people would reside or work in the completed project?

No change in the amount of people working at the site is expected

j. Approximately how many people would the completed project displace?

Project is not expected to displace any people

k. Proposed measures to avoid or reduce displacement impacts, if any.

None

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

None

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

None

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing units will be provided

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing units will be eliminated

c. Proposed measures to reduce or control housing impacts, if any:

None

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Tallest proposed structure is the drying tower at 117 feet, 10 inches tall. The principal exterior building material is steel

b. What views in the immediate vicinity would be altered or obstructed?

The addition of the drying tower will slightly alter views but is not expected to make a large impact as it will be placed next to several similarly tall structures. The addition storage piles and changes to existing storage piles are not expected to alter any views.

c. Proposed measures to reduce or control aesthetic impacts, if any:

None

11. Light and glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The addition of drying tower may produce a little addition glare but is not expected to have a large effect as it will be placed next to multiple other structures that have steel exteriors. No light or glare expected from the storage piles

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

There are no off-site light sources that would affect this proposal

d. Proposed measures to reduce or control light and glare impacts, if any:

Not applicable

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

There are no known designated or informal recreational opportunities in the immediate vicinity.

b. Would the proposed project displace any existing recreational uses? If so, describe.

The project would not displace any existing recreational uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Not applicable.

13. Historic and cultural preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

There are no known places or objects on or near the project site which are listed on or proposed for national preservation registers.

Reference: National Register of Historical Places.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There are no known landmarks or evidence of historic, archaeological, scientific, or cultural importance on or near the site.

Reference: National Register of Historical Places.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Not applicable. No evidence of historic or cultural importance on or near the site.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Not applicable. There is no change in risk to historic resources as a result of this proposal.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The site is accessed by Tank Farm Rd, accessible via US-12

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No. The city of Pasco is served by Ben Franklin Transit. The nearest transit stop is on Rd 40 and approximately 1 mile away as the crow flies.

c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No

d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No

e. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

There is not expected to be an increase in vehicular trips as a result of this proposed project.

f. Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

The proposal will not be affected by the movement of agricultural and forest products on area roads.

g. Proposed measures to reduce or control transportation impacts, if any:

No proposed measures

15. Public services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Not applicable

b. Proposed measures to reduce or control direct impacts on public services, if any.

Not applicable

16. Utilities

Find help answering utilities questions[1]

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None

[1] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-16-utilities

B.Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

X 

Type name of signee: Mark Weber

Position and agency/organization: General Manager

Date submitted: 6/3/25

ATTACHMENT 3

Emissions Inventory

Tri-Cities Grain

Criteria Pollutants

	New Dryer		Existing Dryer		Modified Storage Piles[1]		Existing Storage Piles[2]		Conveyor from SP5 to SP6		Transfers[3]					
Pollutant	**lb/yr**	**ton/yr**	**lb/yr**	**tpy**	**lb/yr**	**tpy**	**lb/yr**	**tpy**	**lb/yr**	**tpy**	**tpy**	**Δ lb/yr**	**Δ tpy**	**Total Modified (tpy)**	**Exemption Level (tpy)**	**Permit and Modelling Required[4]**
NO_x	5.07E+03	2.54E+00	5.07E+03	2.54E+00								0.00E+00	0.00E+00	2.54E+00	2.0	Yes
CO	4.18E+03	2.09E+00	4.18E+03	2.09E+00								0.00E+00	0.00E+00	2.09E+00	5.0	No
PM_{10}	1.68E+04	8.41E+00	1.68E+04	8.41E+00	5.60E+01	2.80E-02	2.43E+01	1.22E-02	1.43E+03	7.14E-01	3.59E+00	1.46E+03	7.30E-01	1.27E+01	0.5	Yes
$PM_{2.5}$	2.98E+03	1.49E+00	2.98E+03	1.49E+00	8.48E-01	4.24E-04	3.69E-01	1.84E-04	2.44E+02	1.22E-01		2.44E+02	1.22E-01	1.61E+00	0.75	Yes
Lead	2.29E-02	1.14E-05	2.29E-02	1.14E-05								0.00E+00	0.00E+00	1.14E-05	5.0E-03	No
SO_2	2.75E+01	1.37E-02	2.75E+01	1.37E-02								0.00E+00	0.00E+00	1.37E-02	2.0	No
VOC	2.52E+02	1.26E-01	2.52E+02	1.26E-01								0.00E+00	0.00E+00	1.26E-01	2.0	No

Greenhouse Gases

	New Dryer				Existing Dryer						
Pollutant	**lb/yr**	**metric ton/yr**	**Global Warming Potential (metric tpy)**	**CO_2e (metric tpy)**	**lb/yr**	**metric ton/yr**	**Global Warming Potential (metric tpy)**	**CO_2e (metric tpy)**	**Δ CO_2e**	**Exceeds WA GHG Threshold?**	**Exceeds Federal GHG Threshold?**
CO_2	5.49E+06	2.49E+03	1	2.49E+03	5.49E+06	2.49E+03	1	2.49E+03			
N_2O	1.01E+02	4.57E-02	265	1.21E+01	1.01E+02	4.57E-02	265	1.21E+01			
Methane	1.05E+02	4.77E-02	28	1.34E+00	1.05E+02	4.77E-02	28	1.34E+00			
Total				2.50E+03				2.50E+03	0.00E+00	No	No

Toxic Air Pollutants

		New Dryer		Existing Dryer								
CAS #	**Pollutant**	**lb/hr**	**lb/yr**	**lb/hr**	**lb/yr**	**Δ lb/hr**	**Δ lb/yr**	**Averaging Period**	**De Minimis (lb/avg per)**	**Permitting Required?**	**SQER (lb/avg per)**	**Modeling Required?**
107-02-8	Acrolein	1.10E-04	1.24E-01	1.10E-04	1.24E-01	0.00E+00	0.00E+00	24-hr	1.30E-03	No	2.60E-02	No
56-55-3	Benz(a)anthracene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	4.50E-02	No	8.90E-01	No
71-43-2	Benzene	8.58E-05	9.61E-02	8.58E-05	9.61E-02	0.00E+00	0.00E+00	Year	1.00E+00	No	2.10E+01	No
50-32-8	Benzo(a)pyrene	4.90E-08	5.49E-05	4.90E-08	5.49E-05	0.00E+00	0.00E+00	Year	8.20E-03	No	1.60E-01	No
205-99-2	Benzo(b)fluoranthene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	4.50E-02	No	8.90E-01	No
207-08-9	Benzo(k)fluoranthene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	4.50E-02	No	8.90E-01	No
630-08-0	Carbon Monoxide	3.73E+00	3.48E+02	3.73E+00	3.48E+02	0.00E+00	0.00E+00	1-hr	1.10E+00	No	4.30E+01	No
218-01-9	Chrysene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	4.50E-01	No	8.90E+00	No
53-70-3	Dibenzo(a,h)anthracene	4.90E-08	5.49E-05	4.90E-08	5.49E-05	0.00E+00	0.00E+00	Year	4.10E-03	No	8.20E-02	No
57-97-6	7,12-Dimethylbenz(a)anthracene	6.54E-07	7.32E-04	6.54E-07	7.32E-04	0.00E+00	0.00E+00	Year	6.90E-05	No	1.40E-03	No
50-00-0	Formaldehyde	3.06E-03	3.43E+00	3.06E-03	3.43E+00	0.00E+00	0.00E+00	Year	1.40E+00	No	2.70E+01	No
110-54-3	n-Hexane	7.35E-02	8.24E+01	7.35E-02	8.24E+01	0.00E+00	0.00E+00	24-hr	2.60E+00	No	5.20E+01	No
193-39-5	Indeno(1,2,3-cd)pyrene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	4.50E-02	No	8.90E-01	No
56-49-5	3-Methylcholanthrene	7.35E-08	8.24E-05	7.35E-08	8.24E-05	0.00E+00	0.00E+00	Year	7.80E-04	No	1.60E-02	No
91-20-3	Naphthalene	2.49E-05	2.79E-02	2.49E-05	2.79E-02	0.00E+00	0.00E+00	Year	2.40E-01	No	4.80E+00	No
10102-44-0	Nitrogen Dioxide	4.53E+00	4.18E+03	4.53E+00	4.18E+03	0.00E+00	0.00E+00	1-hr	4.60E-01	No	8.70E-01	No
108-88-3	Toluene	1.39E-04	1.56E-01	1.39E-04	1.56E-01	0.00E+00	0.00E+00	24-hr	1.90E+01	No	3.70E+02	No
7440-38-2	Arsenic	8.17E-06	9.15E-03	8.17E-06	9.15E-03	0.00E+00	0.00E+00	Year	2.50E-03	No	4.90E-02	No
7440-41-7	Beryllium	4.90E-07	5.49E-04	4.90E-07	5.49E-04	0.00E+00	0.00E+00	Year	3.40E-03	No	6.80E-02	No
7440-43-9	Cadmium	4.49E-05	5.03E-02	4.49E-05	5.03E-02	0.00E+00	0.00E+00	Year	1.90E-03	No	3.90E-02	No
7440-47-3	Chromium	5.72E-05	6.41E-02	5.72E-05	6.41E-02	0.00E+00	0.00E+00	24-hr	1.90E-02	No	3.70E-01	No
7440-48-4	Cobalt	3.43E-06	3.84E-03	3.43E-06	3.84E-03	0.00E+00	0.00E+00	24-hr	3.70E-04	No	7.40E-03	No
7440-50-8	Copper	3.47E-05	3.89E-02	3.47E-05	3.89E-02	0.00E+00	0.00E+00	1-hr	9.30E-03	No	1.90E-01	No
7439-96-5	Manganese	1.55E-05	1.74E-02	1.55E-05	1.74E-02	0.00E+00	0.00E+00	24-hr	1.10E-03	No	2.20E-02	No
7439-97-6	Mercury	1.06E-05	1.19E-02	1.06E-05	1.19E-02	0.00E+00	0.00E+00	24-hr	1.10E-04	No	2.20E-03	No
7440-02-0	Nickel	8.58E-05	9.61E-02	8.58E-05	9.61E-02	0.00E+00	0.00E+00	Year	3.10E-02	No	6.20E-01	No
7782-49-2	Selenium	9.81E-07	1.10E-03	9.81E-07	1.10E-03	0.00E+00	0.00E+00	24-hr	7.40E-02	No	1.50E+00	No
7446-09-5	Sulfur Dioxide	2.45E-02	2.75E+01	2.45E-02	2.75E+01	0.00E+00	0.00E+00	1-hr	4.60E-01	No	1.20E+00	No
7440-62-2	Vanadium	9.40E-05	1.05E-01	9.40E-05	1.05E-01	0.00E+00	0.00E+00	24-hr	3.7E-04	No	7.40E-03	No

1. Emissions from storage piles 1-6
2. Emissions from storage piles 1-4
3. From 2010 NOC Application
3. Permit and modelling required based on emissions from new dryer + change in emission from the modified storage piles and existing storage piles + emissions from new conveyor

Dryer (New) Emissions

Max Throughput	280000	ton/yr		
	10000000	bu/yr	bushels	
Heat Capacity	41.918	MMBtu/hr		
Natural Gas Heating Value	1,026	Btu/scf	40 CFR 98, Table C-1 [12/9/2016]	

Operation Schedule

16	hr/day
7	day/wk
10	wk/yr
56	lb/bu

Criteria Pollutants

Pollutant	Emission Factor[1]	Units	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)	Potential Emissions (tpy)
NO_x[2]	NA		4.527	5070.24	2.54E+00
CO[2]	NA		3.731	4178.72	2.09E+00
PM	7.6	lb/10^6 scf	3.11E-01	347.76	1.74E-01
PM_{10}	7.6	lb/10^6 scf	3.11E-01	347.76	1.74E-01
$PM_{2.5}$[3]	7.6	lb/10^6 scf	3.11E-01	347.76	1.74E-01
Lead[4]	0.0005	lb/10^6 scf	2.04E-05	0.02	1.14E-05
SO_2	0.6	lb/10^6 scf	2.45E-02	27.46	1.37E-02
VOC	5.5	lb/10^6 scf	2.25E-01	251.67	1.26E-01

Greenhouse Gases

Pollutant	Emission Factor[1] lb/10^6 scf	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)	Potential Emissions Metric tpy	Global Warming Potential[5] (metric tpy)	CO_2e (metric tpy)
CO_2	120,000	4.90E+03	5.49E+06	2.49E+03	1	2.49E+03
N_2O	2.2	8.99E-02	1.01E+02	4.57E-02	265	1.21E+01
Methane	2.3	9.40E-02	1.05E+02	4.77E-02	28	1.34E+00
Total						2.50E+03

Toxic Air Pollutants

CAS #	Pollutant	Emission Factor[4] (lb/MMscf)	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)
107-02-8	Acrolein	2.7E-03	1.10E-04	1.24E-01
56-55-3	Benz(a)anthracene	1.8E-06	7.35E-08	8.24E-05
71-43-2	Benzene	2.1E-03	8.58E-05	9.61E-02
50-32-8	Benzo(a)pyrene	1.2E-06	4.90E-08	5.49E-05
205-99-2	Benzo(b)fluoranther	1.8E-06	7.35E-08	8.24E-05
207-08-9	Benzo(k)fluoranther	1.8E-06	7.35E-08	8.24E-05
630-08-0	Carbon Monoxide	NA	3.73E+00	3.48E+02
218-01-9	Chrysene	1.8E-06	7.35E-08	8.24E-05
53-70-3	Dibenzo(a,h)anthrac	1.2E-06	4.90E-08	5.49E-05
57-97-6	7,12-Dimethylbenz(a)anthracene	1.6E-05	6.54E-07	7.32E-04
50-00-0	Formaldehyde	7.5E-02	3.06E-03	3.43E+00
110-54-3	n-Hexane	1.8E+00	7.35E-02	8.24E+01
193-39-5	Indeno(1,2,3-cd)pyr	1.8E-06	7.35E-08	8.24E-05
56-49-5	3-Methylcholanthrer	1.8E-06	7.35E-08	8.24E-05
91-20-3	Naphthalene	6.1E-04	2.49E-05	2.79E-02
10102-44-0	Nitrogen Dioxide	NA	4.53E+00	4.18E+03
108-88-3	Toluene	3.4E-03	1.39E-04	1.56E-01
7440-38-2	Arsenic	2.0E-04	8.17E-06	9.15E-03
7440-41-7	Beryllium	1.2E-05	4.90E-07	5.49E-04
7440-43-9	Cadmium	1.1E-03	4.49E-05	5.03E-02
7440-47-3	Chromium	1.4E-03	5.72E-05	6.41E-02
7440-48-4	Cobalt	8.4E-05	3.43E-06	3.84E-03
7440-50-8	Copper	8.5E-04	3.47E-05	3.89E-02
7439-96-5	Manganese	3.8E-04	1.55E-05	1.74E-02
7439-97-6	Mercury	2.6E-04	1.06E-05	1.19E-02
7440-02-0	Nickel	2.1E-03	8.58E-05	9.61E-02
7782-49-2	Selenium	2.4E-05	9.81E-07	1.10E-03
7446-09-5	Sulfur Dioxide	NA	2.45E-02	2.75E+01
7440-62-2	Vanadium	2.3E-03	9.40E-05	1.05E-01

1. AP-42 Section 1.4, Table 1.4-1 and 1.4-2 (July, 2008)
2. Nox and CO emissions from manufacturers data
3. PM2.5 and PM10 emissions assumed to be the same
4. AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (July, 2008)
5. GWP factors per 40 CFR 98 Table A-1.

Emissions from Grain Drying

PM Emission Rate 14.716 lb/hr (*from manufacturer data*)

	lb/hr	lb/day	lb/yr	ton/yr
PM[6]	14.716	235.456	16481.92	8.24096
PM10[6]	14.716	235.456	16481.92	8.24096
PM2.5[7]	2.35	37.6	2632	1.316

	Emission Factor (lb/Ton)			Emission Factor Source
	PM	PM10	PM2.5	
Column Dryer	0.22	0.055	0.0094	AP-42, 5th Edition, Chapter 9.9.1, Table 9.9.1-1

6. Calculations for these factors used PM emission rate from manufacturer
7. Calculations for $PM_{2.5}$ used emission factor from AP-42

Dryer (Existing) Emissions

				Operation Schedule	
Max Throughput	280000	ton/yr			
	10000000	bu/yr	bushels	16	hr/day
Heat Capacity	41.918	MMBtu/hr		7	day/wk
Natural Gas Heating Value	1,026	Btu/scf	40 CFR 98, Table C-1 [12/9/2016]	10	wk/yr
				56	lb/bu

Criteria Pollutants

Pollutant	Emission Factor[1]	Units	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)	Potential Emissions (tpy)
NO_X[2]	NA		4.527	5070.24	2.54E+00
CO[2]	NA		3.731	4178.72	2.09E+00
PM	7.6	$lb/10^6$ scf	0.3105037	347.76	1.74E-01
PM_{10}	7.6	$lb/10^6$ scf	0.3105037	347.76	1.74E-01
$PM_{2.5}$[3]	7.6	$lb/10^6$ scf	0.3105037	347.76	1.74E-01
Lead[4]	0.0005	$lb/10^6$ scf	2.043E-05	0.02	1.14E-05
SO_2	0.6	$lb/10^6$ scf	0.0245135	27.46	1.37E-02
VOC	5.5	$lb/10^6$ scf	0.2247066	251.67	1.26E-01

Greenhouse Gases

Pollutant	Emission Factor[1] $lb/10^6$ scf	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)	Potential Emissions Metric tpy	Global Warming Potential[5] (metric tpy)	CO_2e (metric tpy)
CO_2	120,000	4.90E+03	5.49E+06	2.49E+03	1	2.49E+03
N_2O	2.2	8.99E-02	1.01E+02	4.57E-02	265	1.21E+01
Methane	2.3	9.40E-02	1.05E+02	4.77E-02	28	1.34E+00
Total						2.50E+03

Toxic Air Pollutants

CAS #	Pollutant	Emission Factor[4] (lb/MMscf)	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)
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50-32-8	Benzo(a)pyrene	1.2E-06	4.90E-08	5.49E-05
205-99-2	Benzo(b)fluoranther	1.8E-06	7.35E-08	8.24E-05
207-08-9	Benzo(k)fluoranther	1.8E-06	7.35E-08	8.24E-05
630-08-0	Carbon Monoxide	NA	3.73E+00	3.48E+02
218-01-9	Chrysene	1.8E-06	7.35E-08	8.24E-05
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57-97-6	7,12-Dimethylbenz(a)anthracene	1.6E-05	6.54E-07	7.32E-04
50-00-0	Formaldehyde	7.5E-02	3.06E-03	3.43E+00
110-54-3	n-Hexane	1.8E+00	7.35E-02	8.24E+01
193-39-5	Indeno(1,2,3-cd)pyr	1.8E-06	7.35E-08	8.24E-05
56-49-5	3-Methylcholanthrer	1.8E-06	7.35E-08	8.24E-05
91-20-3	Naphthalene	6.1E-04	2.49E-05	2.79E-02
10102-44-0	Nitrogen Dioxide	NA	4.53E+00	4.18E+03
108-88-3	Toluene	3.4E-03	1.39E-04	1.56E-01
7440-38-2	Arsenic	2.0E-04	8.17E-06	9.15E-03
7440-41-7	Beryllium	1.2E-05	4.90E-07	5.49E-04
7440-43-9	Cadmium	1.1E-03	4.49E-05	5.03E-02
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7439-96-5	Manganese	3.8E-04	1.55E-05	1.74E-02
7439-97-6	Mercury	2.6E-04	1.06E-05	1.19E-02
7440-02-0	Nickel	2.1E-03	8.58E-05	9.61E-02
7782-49-2	Selenium	2.4E-05	9.81E-07	1.10E-03
7446-09-5	Sulfur Dioxide	NA	2.45E-02	2.75E+01
7440-62-2	Vanadium	2.3E-03	9.40E-05	1.05E-01

1. AP-42 Section 1.4, Table 1.4-1 and 1.4-2 (July, 2008)
2. Nox and CO emissions from manufacturers data
3. PM2.5 and PM10 emissions assumed to be the same
4. AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 (July, 2008)
5. GWP factors per 40 CFR 98 Table A-1.

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PM2.5[7]	2.35	37.6	2632	1.316

	Emission Factor (lb/Ton)			Emission Factor Source
	PM	PM10	PM2.5	
Column Dryer	0.22	0.055	0.0094	AP-42, 5th Edition, Chapter 9.9.1, Table 9.9.1-1

6. Calculations for these factors used PM emission rate from manufacturer
7. Calculations for $PM_{2.5}$ used emission factor from AP-42

Storage Piles (New) Emissions

56 lb/bushel

Storage Pile 1	1.40E+06	bushel	Storage Pile 2	1.40E+06	bushel	Storage Pile 3	1.20E+06 bushel
	7.84E+07	lbs		7.84E+07	lbs		6.72E+07 lbs
	3.92E+04	tons		3.92E+04	tons		3.36E+04 tons
Storage Pile 4	1.00E+06	bushel	Storage Pile 5	1.80E+06	bushel	Storage Pile 6	1.50E+06 bushel
	5.60E+07	lbs		1.01E+08	lbs		8.40E+07 lbs
	2.80E+04	tons		5.04E+04	tons		4.20E+04 tons

			Uncontrolled		90% Emissions Control[3]	
Source	**Pollutant**	**Emission Factor (lb/ton)[1]**	**lb/yr**	**ton/yr**	**lb/yr**	**ton/yr**
Storage Pile 1	PM_{10}	2.90E-04	1.14E+01	5.68E-03	1.14E+00	5.68E-04
	$PM_{2.5}$	4.39E-06	1.72E-01	8.60E-05	1.72E-02	8.60E-06
Storage Pile 2	PM_{10}	2.90E-04	1.14E+01	5.68E-03	1.14E+00	5.68E-04
	$PM_{2.5}$	4.39E-06	1.72E-01	8.60E-05	1.72E-02	8.60E-06
Storage Pile 3	PM_{10}	2.90E-04	9.74E+00	4.87E-03	9.74E-01	4.87E-04
	$PM_{2.5}$	4.39E-06	1.47E-01	7.37E-05	1.47E-02	7.37E-06
Stoage Pile 4	PM_{10}	2.90E-04	8.11E+00	4.06E-03	8.11E-01	4.06E-04
	$PM_{2.5}$	4.39E-06	1.23E-01	6.14E-05	1.23E-02	6.14E-06
Stoage Pile 5	PM_{10}	2.90E-04	1.46E+01	7.30E-03	1.46E+00	7.30E-04
	$PM_{2.5}$	4.39E-06	2.21E-01	1.11E-04	2.21E-02	1.11E-05
Storage Pile 6	PM_{10}	2.90E-04	1.22E+01	6.08E-03	1.22E+00	6.08E-04
	$PM_{2.5}$	4.39E-06	1.84E-01	9.21E-05	1.84E-02	9.21E-06
Total	PM_{10}		5.60E+01	2.80E-02	5.60E+00	2.80E-03
	$PM_{2.5}$		8.48E-01	4.24E-04	8.48E-02	4.24E-05

k [2]	0.35	PM_{10}	
	0.0053	$PM_{2.5}$	
U	10.0	mph	*(Based on 2010 NOC)*
M	10	%	*(Based on 2010 NOC)*

1. Emission factors calculated using $E(lb/ton)=0.0032k(U/5)^{1.3}(M/2)^{-1.4}$ from AP-42, Chapter 13.2.4
2. Factors for k found in AP-42, Chapter 13.2.4
3. 90% control emissions based on 2010 NOC statement

Storage Pile (Old) Emissions

56 lb/bushel

Storage Pile 1	1.40E+06	bushel	Storage Pile 2	1.20E+06	bushel	Storage Pile 3	1.00E+06	bushel	Stoage Pile 4	8.00E+05	bushel
	7.84E+07	lbs		6.72E+07	lbs		5.60E+07	lbs		4.48E+07	lbs
	3.92E+04	tons		3.36E+04	tons		2.80E+04	tons		2.24E+04	tons

			Uncontrolled		90% Emissions Control[3]	
Source	**Pollutant**	**Emission Factor (lb/ton)[1]**	**lb/yr**	**ton/yr**	**lb/yr**	**ton/yr**
Storage Pile 1	PM_{10}	2.90E-04	1.14E+01	5.68E-03	1.14E+00	5.68E-04
	$PM_{2.5}$	4.39E-06	1.72E-01	8.60E-05	1.72E-02	8.60E-06
Storage Pile 2	PM_{10}	2.90E-04	9.74E+00	4.87E-03	9.74E-01	4.87E-04
	$PM_{2.5}$	4.39E-06	1.47E-01	7.37E-05	1.47E-02	7.37E-06
Storage Pile 3	PM_{10}	2.90E-04	8.11E+00	4.06E-03	8.11E-01	4.06E-04
	$PM_{2.5}$	4.39E-06	1.23E-01	6.14E-05	1.23E-02	6.14E-06
Stoage Pile 4	PM_{10}	2.90E-04	6.49E+00	3.25E-03	6.49E-01	3.25E-04
	$PM_{2.5}$	4.39E-06	9.83E-02	4.91E-05	9.83E-03	4.91E-06
Total	PM_{10}	2.90E-04	2.43E+01	1.22E-02	2.43E+00	1.22E-03
	$PM_{2.5}$	4.39E-06	3.69E-01	1.84E-04	3.69E-02	1.84E-05

k [2]	0.35	PM10	
	0.0053	PM2.5	
U	10.0	mph	*(Based on data from 2010 NOC)*
M	10	%	*(Based on data from 2010 NOC)*

1. Emission factors calculated using $E(lb/ton)=0.0032k(U/5)^{1.3}(M/2)^{-1.4}$ from AP-42, Chapter 13.2.4
2. Factors for k found in AP-42, Chapter 13.2.4
3. 90% control emissions based on 2010 NOC statement

Overhead Conveyor from SP5 to SP6

		Emission Rate	
	EF (lb/ton)[1]	lb/yr	ton/yr
PM_{10}	0.034	1.43E+03	7.14E-01
$PM_{2.5}$	0.0058	2.44E+02	1.22E-01

Storage Pile 6	1.50E+06	bushel	56 bu/lb
	8.40E+07	lbs	
	4.20E+04	tons	

1. AP 42 Section 9.9.1, Table 9.9.1 (May 2023)

ATTACHMENT 4

Air Dispersion Modeling

AIR DISPERSION MODELING REPORT

DRYER ADDITION

TRI-CITIES GRAIN

JUNE 2025

Prepared for:

Tri-Cities Grain
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Beth Fifield Hodgson
Beth Fifield Hodgson
Principal Engineer

Issue date:

June 3, 2025

AIR DISPERSION MODELING

TRI-CITIES GRAIN – DRYER ADDITION

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Appendices:

AIR DISPERSION MODELING

TRI-CITIES GRAIN – DRYER ADDITION

Tri-Cities Grain was founded in 1999 and currently operates a five hundred thousand bushel river terminal on the Snake River in Franklin County. They have storage space for up to 3.3 million bushels. Tri-Cities Grain handles multiple types of wheat as well as trading corn and barely into the local feed markets. Tri-Cities Grain operates at 600 Tank Farm Rd in Pasco, Washington in Franklin County. Tri-Cities Grain currently is permitted under Order No. 12AQ-E454. Tri-Cities Grain is proposing adding a natural gas-fired Zimmerman Z-7060 tower dryer to their facility. Tri-Cities Grain is also proposing two additional storage piles, an overhead conveyor between the two new piles, and changes to capacities of 3 of their 4 existing storage piles.

Based on potential emissions from the tower dryer, storage piles, and conveyors, modeling is required for particulate matter ten micrometers or less (PM_{10}), particulate matter two and a half micrometers or less ($PM_{2.5}$), and nitrogen oxides per WAC 173-400-110 and WAC 173-460. The following is a summary of the air dispersion modeling analysis.

1. Purpose

To determine the potential impact of the proposed project in relation to the National Ambient Air Quality Standards (NAAQS) and acceptable source impact level (ASIL) for toxic air emissions per 40 CFR 50 and WAC 173-460-150.

2. Model Description

EPA provides guidance in Subpart W of 40 CFR Part 51 on applicability of specific air quality dispersion models in the review and preparation of new source permits and State Implementation Plans (SIP) revisions. Based on the topography, land use, and meteorology, AERMOD was selected to model the air emissions.

The American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) is a steady-state Gaussian plume model which can be used to assess pollutant concentrations from a wide variety of sources. AERMOD utilizes surface boundary layer parameters and meteorological data profiles calculated by AERMET, which processes hourly surface observations and upper air data. AERMAP is a terrain preprocessor for AERMOD.

AERMOD: Since AERMOD was specifically developed to support EPA's regulatory modeling programs, the regulatory modeling options, as specified in the Guideline of Air Quality Models (Revised), are the default mode of operation for the model. These options include a routine for processing averages when calm winds or missing meteorological data occur.

The user may select either rural or urban dispersion parameters, depending on the characteristics of the source location. The user also has the option of calculating several short-term (1-, 2-, 3-, 4-, 6-, 8-, 12-, or 24-hr) averages in addition to long term (monthly, annual, or period) averages for concentration values or deposition values for a particular run.

The model is capable of handling multiple sources including point, volume, and area source types. Line sources may also be modeled using a string of volume or area sources. Several sources and groups of sources may be specified in a single run. The emission rates of the sources can be treated as constant or varied according to time of day, month, or season.

The user has the capability of specifying multiple receptor networks in a single run, and may mix Cartesian grid receptor networks and polar grid receptor networks. This is useful for applications where the user may need a coarse grid over the entire modeling domain, but a denser grid in the area of maximum expected impacts. The user has the option of specifying receptor elevations above ground to model flagpole receptors. Receptor elevations and hill height scales are calculated by AERMAP from USGS Digital Elevation Model files. In AERMOD, there is no distinction between elevated terrain below release height and terrain above release height as with earlier regulatory models that distinguished between simple and complex terrain.

The user has various options of printed output including summaries of high values, summaries of overall maximum values, and tables of multiple receptors for each averaging period and source group combination. The latter group of data may be used to generate contour and grid maps.

The latest version of AERMOD (24142) was used in the air dispersion modeling analysis for the proposed tower dryer and storage piles. Further information is available in the User's Guide in the EPA Guidance of Air Quality Models.

AERSURFACE: When applying the AERMET meteorological processor, the user must determine appropriate values for three surface characteristics: surface roughness length, noontime albedo, and daytime Bowen ratio. The AERSURFACE tool aids users in obtaining realistic and reproducible surface characteristic values for the three surface characteristics. The tool uses data from the National Land Cover Database (NLCD) from the United States Geological Survey (USGS) and look-up tables of surface characteristic values that vary by land cover type and season.

The latest version of AERSURFACE (24142) was used in the air dispersion modeling analysis for the proposed tower dryer and storage piles. Further information is available in the User's Guide in the EPA Guidance of Air Quality Models.

AERMET: Surface observations are available from meteorological towers operated by various agencies including local environmental agencies and the National Weather Service (NWS) of the National Oceanic & Atmospheric Administration (NOAA). Remote Automatic Weather Stations (RAWS) is a network of automated weather stations run by the U. S. Forest Service and the Bureau of Land Management (BLM) and monitored by the National Interagency Fire Center. NWS stations are usually located at significant airports while RAWS data is often located in remote areas. Upper air data is also collected by NOAA's NWS and stored in the NOAA Forecast Systems Laboratory Radiosonde Database (https://www.ncei.noaa.gov/data/integrated-global-radiosonde-archive/access/data-por/). See Section 7 for more information about the data selected for this modeling demonstration.

There are two stages to processing meteorological data. The first stage extracts meteorological data from archive data files and processes the data through various quality assessment checks. The second stage reads the processed meteorological data from Stage 1 and estimates the necessary boundary layer parameters for use by AERMOD. Two files are written for AERMOD: a file of hourly boundary

layer parameter estimates, and a file of multiple-level observations of wind speed and direction, temperature, and standard deviation of the fluctuating components of the wind.

AERMINUTE was used to process 1-minute wind data which helps reduce the number of calms and missing winds in the surface data. Due to gaps in 1-minute wind data for March and August 2018 and March 2019, 5-minute wind data was used for those months.

The latest version of AERMET (24142) and AERMINUTE (15272) were used to assess the meteorological data for the proposed tower dryer and storage piles. Further information is available in the User's Guide for the AERMOD Meteorological Pre-processor.

AERMAP: AERMAP processes commercially available Digital Elevation Data and creates a file suitable for use within an AERMOD control file. See Sections 4 and 5 for more information about the data selected for this modeling demonstration. This file would contain elevation and hill-height scaling factors for each receptor in the air dispersion study. AERMAP can also calculate the base elevations of the sources.

For complex terrain situations, AERMOD captures the essential physics of dispersion in complex terrain and therefore needs elevation data that conveys the features of the surrounding terrain. In response to this need, AERMAP searches for the terrain height and location that has the greatest influence on dispersion for each individual receptor. This height is referred to as the hill height scale. Both the base elevation and hill height scale data are produced by AERMAP as a file or files which can be directly inserted into an AERMOD input control file. Further information is available in the User's Guide for the AERMOD Terrain Pre-processor.

The latest version of AERMAP (18081) was used to assess terrain data for the proposed tower dryer and storage piles. Further information is available in the User's guide for AERMOD Terrain Preprocessor (AERMAP).

3. Emission and Source Data

Facility Layout

See Appendix A for the site plan and locations of the modeled source. A regional map is provided in Appendix A-1.

Process Overview

A propane-fired Zimmerman Z-7060 tower dryer is proposed to operate at Tri-Cities Grain's facility at 600 Tank Farm Rd, Pasco, WA 99301. Increases to capacities of three of four existing storage piles are also proposed. Proposed increases are 200,000 bushels for Piles 2, 3, and 4 (new capacities would be 1.4, 1.2, and 1.0 million bushels respectively). Two new outdoor storage piles (Piles 5 and 6) with a ae also proposed. They are proposed to have capacities of 1.8 million bushels (Pile 5) and 1.5 million bushels (Pile 6). Pile 6 is proposed to be fed by an overhead conveyor from Pile 5. See Appendix A-2 for a map showing the location of the exhaust points.

It is assumed operations for the tower dryer are 16 hours per day, 7 days per week, 10 weeks per year. Emission calculations for the tower dryer were performed based on 1,120 hours per year and an average heat capacity of 41.918 MMBtu/hr per manufacturer's data sheet. Operations for the outdoor storage piles are assumed to be year-round, 24 hours per day, 7 days per week. Emission calculations

were performed based on 8760 hours of operation per year and the piles being at capacity for the whole year.

Emissions Data

Based on preliminary emissions calculations, three criteria pollutants, (PM_{10}, $PM_{2.5}$, NOx) have emissions estimated to exceed exemption levels defined in WAC 173-400-110(5). Therefore, these pollutants require modeling.

Emissions estimates were developed using manufacturer data and AP-42 Sections 1.4, 1.5, 9.9, and 13.2. A summary of the air pollutants that have the potential to exceed their exemption level or SQER level can be found in Table 1.

Table 1. Air Pollutants Emissions

Source	Pollutant	Averaging Period	Maximum Emissions (tpy)
Tower Dryer	PM_{10}	24-hour	8.41E+0
	$PM_{2.5}$	24-hour	8.41E+0
		Year	
	Nitrogen Dioxide	1-hour	2.54E+0
		Year	
		Year	
Pile 2	PM_{10}	24-hour	8.10E-5
	$PM_{2.5}$	24-hour	1.23E-6
		Year	
Pile 3	PM_{10}	24-hour	8.10E-5
	$PM_{2.5}$	24-hour	1.23E-6
		Year	
Pile 4	PM_{10}	24-hour	8.10E-5
	$PM_{2.5}$	24-hour	1.23E-6
		Year	
Pile 5	PM_{10}	24-hour	7.30E-4
	$PM_{2.5}$	24-hour	1.11E-5
		Year	
Pile 6	PM_{10}	24-hour	6.08E-4
	$PM_{2.5}$	24-hour	9.21E-6
		Year	
Conveyor	PM_{10}	24-hour	7.14E-1
	$PM_{2.5}$	24-hour	1.22E-1
		Year	

Modeling Parameters

Modeling was performed as volume sources for the tunnel dryer and all storage piles. Modeling for the conveyor was performed as a line source. The worst-case impact was compared to its corresponding National Ambient Air Quality Standards (NAAQSs) for criteria pollutants and acceptable source impact levels (ASILs) for TAPs.

Table 2 presents a summary of the volume source modeling parameters. These parameters are consistent with manufacturer specifications and Tri-Cities Grain's intended installation.

Table 2. Volume Source Modeling Parameters

Source	Release Height[a] (ft)	Initial Lateral Dimension (ft)	Initial Vertical Dimension (ft)
Tower Dryer	117.8	5.3	54.8
Pile 2	65	71.2	30.2
Pile 3	65	61.6	30.2
Pile 4	65	64.0	30.2
Pile 5	65	71.2	30.2
Pile 6	65	71.2	30.2

a. Tower dryer height per Zimmerman data sheet

Table 3 presents a summary of the line source modeling parameters.

Table 3. Line Source Modeling Parameters

Source	Release Height[a] (ft)	Width (ft)
Conveyor	65	3.28

4. Receptor Network

A receptor flagpole height of 1.5 meters was used in the analysis. The ambient air boundary was considered to be the parcel boundary and the receptor grid extends beyond that. The general public is not allowed to access the property as a part of normal operation. A receptor grid was established based on Ecology's "Guidance Document; First, Second, and Third Tier Review of Toxic Air Pollutant Sources" (August 2015).

- 10-m spacing around the fence line
- 12.5-m spacing from the source out to 150 meters
- 25-m spacing from 150 to 400 meters
- 50-m spacing from 400 to 900 meters
- 100-m spacing from 900 to 2,000 meters
- 300-m spacing from 2,000 to 4,500 meters
- 600-m spacing from 4,500 meters to 10,000 meters

5. Elevation Data

Spring Environmental ran AERMAP for the volume sources and all receptors using a NED file (datum NAD 83) covering the area between 44.998 to 45.998 degrees North latitude and 119.002 to 120.002 degrees West longitude. Terrain data was obtained from the following website: https://viewer.nationalmap.gov/basic/ and converted from the compressed GeoTIFF format to the GeoTIFF format that can be processed with AERMAP. Coordinates, elevations, hill heights, and flagpole heights for all receptors (datum WGS 84) are included in the AERMOD input file (see electronic modeling files).

6. Surface Data

Spring Environmental ran AERSURFACE to process land cover data to determine the surface characteristics for use in AERMET. Landcover, impervious, and tree canopy data was obtained from the following website: https://www.mrlc.gov/viewer/.

7. Meteorological Data

Processed meteorological surface data was from the Tri-Cities Airport, station ID 24163, and upper air data from the National Weather Service - Spokane, station ID 72786. All of these stations are believed to be the best available data for Tri-Cities Grain's location. Surface data from 2018-2022 was obtained from the Tri-Cities Airport at https://www1.ncdc.noaa.gov/pub/data/noaa. Upper air data from 2018-2022 was obtained from National Weather Service - Spokane at https://www.ncei.noaa.gov/data/integrated-global-radiosonde-archive/access/data-por/.

8. Land Use Classification

Some of the immediate area surrounding the facility is used for industrial purposes, while other areas are used for agricultural purposes. More than 50% of the surrounding area within a 3-km radius of the site is zoned other than industrial, commercial, or multi-family residential; therefore, the land-use classification has been defined as Rural in accordance with EPA[1] guidelines.

9. Buildings

Eighteen buildings were within five release heights of the sources. However, due to all emission sources being considered volume and line sources, building downwash effects were not included.

10. Background Concentration

Background Concentrations 2014 – 2017 were obtained from the IDEQ and WA collaboration website[2] on February 14, 2025. The concentrations are summarized in Table 4.

Table 4. Background Concentrations

Pollutant	Averaging Period	Background Concentration
PM_{10}	24-hour	85.1 µg/m^3
$PM_{2.5}$	24-hour	18.9 µg/m^3
	Year	6.4 µg/m^3
Nitrogen Dioxide	1-hour	33.0 ppb (62.1 µg/m^3)
	Year	6.8 ppb (12.8 µg/m^3)

11. Evaluation of Compliance with Standards

Modeling was performed based on the parameters defined in this report. Table 5 provides the modeled off-site impact for PM_{10}, $PM_{2.5}$, and nitrogen dioxide in comparison to NAAQS and ASIL for each

[1] 40 C.F.R. §51 Appendix W, Section 7.2.3

[2] https://idahodeq.maps.arcgis.com/apps/MapSeries/index.html?appid=0c8a006e11fe4ec5939804b873098dfe

respective pollutant. The AERMOD output summary for each pollutant is provided in **Appendix B**. An electronic copy of the AERMOD files will be provided.

Table 5. AERMOD Air Pollutants Results Compared to NAAQS/ASIL

Pollutant	Averaging Period	Design Value ($\mu g/m^3$)[a,b]	Background Concentration ($\mu g/m^3$)	NAAQS/ ASIL	Total ($\mu g/m^3$)	Standard Exceeded? (Yes/No)
PM_{10}	24-hr	7.8	85.1	150 $\mu g/m^3$	92.9	No
$PM_{2.5}$	24-hr	1.1	18.9	35 $\mu g/m^3$	20.0	No
	Year	0.3	6.4	15 $\mu g/m^3$	6.7	No
Nitrogen Dioxide	1-hr	12.0	N/A (ASIL)	470 $\mu g/m^3$	12.0	No
	1-hr	9.0	62.1	100 ppb (188 $\mu g/m^3$)	71.1	No
	Year	0.5	12.8	53 ppb (99.6 $\mu g/m^3$)	13.3	No

a. Using maximum 6th highest value for PM_{10}, mean of maximum 8th highest value for $PM_{2.5}$ (24-hr), and mean of maximum 8th highest value for nitrogen dioxide per National Ambient Air Quality Standards 40 CFR 50.
b. Mean of the maximum highest value for nitrogen dioxide when comparing with the ASIL.

12. Conclusion

The results of the refined modeling indicate that the proposed drying tower and storage piles do not cause an exceedance of NAAQSs and ASILs.

This Air Quality Monitoring Report was prepared by Beth Fifield Hodgson, P.E. of Spring Environmental, Inc.

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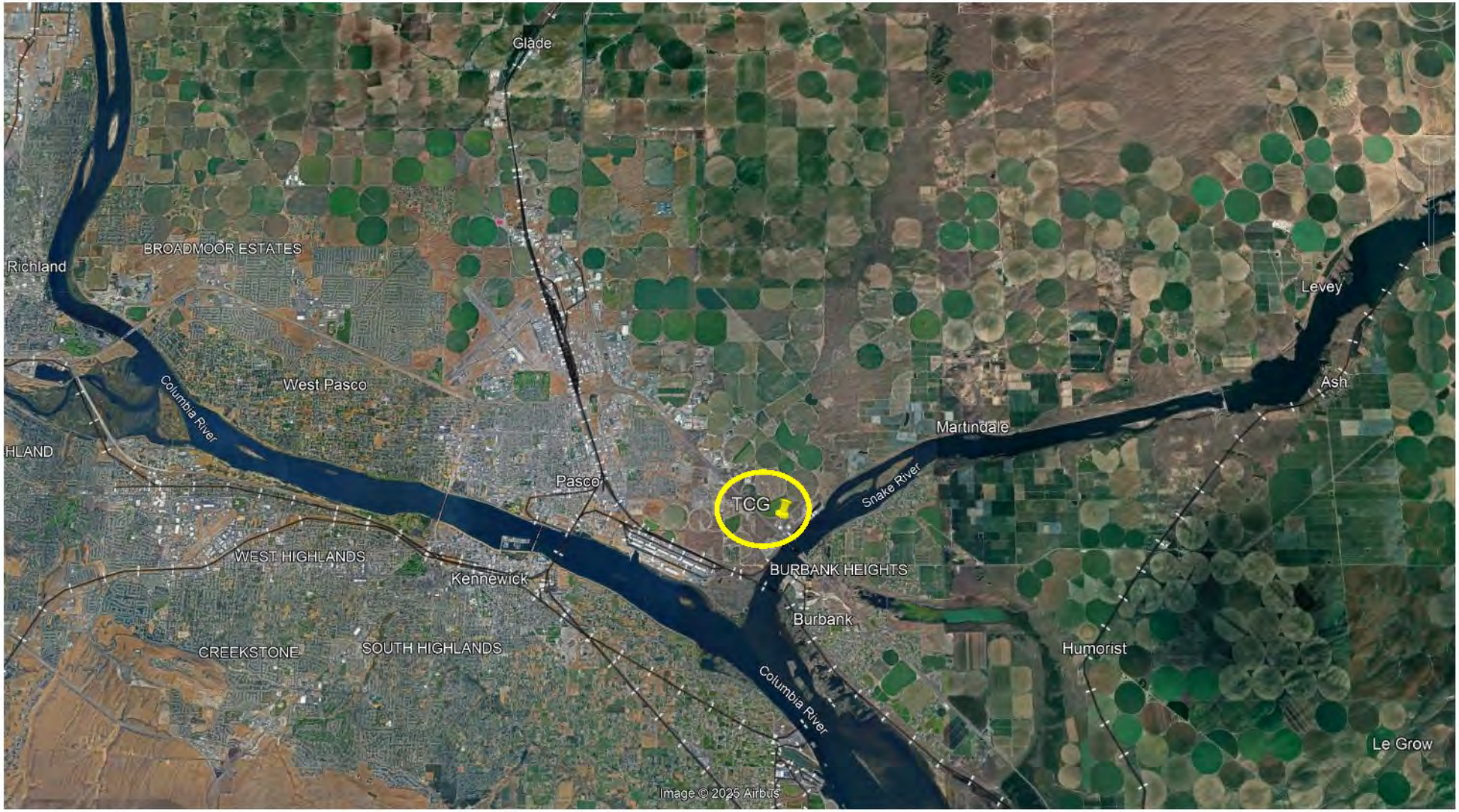
Fax: (509) 328-7501

Appendix A
Site Plan and Source Locations


Glade
BROADMOOR ESTATES
Richland
Levey
Columbia River
West Pasco
Ash
Martindale
HLAND
Pasco
TCG
Snake River
WEST HIGHLANDS
Kennewick
BURBANK HEIGHTS
Burbank
CREEKSTONE
SOUTH HIGHLANDS
Humorist
Columbia River
Le Grow
Image © 2025 Airbus


Site Boundary
Pile 4
Pile 6
Conveyor
Pile 3
Pile 5
Pile 2
Tower dryer

Appendix B
AERMOD Input and Results Summary

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

                                        ***   MODEL SETUP OPTIONS SUMMARY   ***
 -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE = F
      * Model Uses NO WET DEPLETION. WETDPLT = F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses RURAL Dispersion Only.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Accepts FLAGPOLE Receptor . Heights.
      * The User Specified a Pollutant Type of: PM10

 **Model Calculates 1 Short Term Average(s) of: 24-HR

 **This Run Includes: 7 Source(s);   1 Source Group(s); and   7282 Receptor(s)

                with: 0 POINT(s), including
                           0 POINTCAP(s) and   0 POINTHOR(s)
                 and: 6 VOLUME source(s)
                 and: 0 AREA type source(s)
                 and: 1 LINE source(s)
                 and: 0 RLINE/RLINEXT source(s)
                 and: 0 OPENPIT source(s)
                 and: 0 BUOYANT LINE source(s) with a total of   0 line(s)
                 and: 0 SWPOINT source(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date: 24142

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

```
**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   122.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.8 MB of RAM.

**Input Runstream File:          C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_PM10_24.DTA
**Output Print File:             C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_PM10_24.LST

**File for Summary of Results:   C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_PM10_24.SUM
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
PILE2	0	0.23301E-05	343708.8	5120503.8	140.4	19.81	21.70	9.21	NO		NO
NEWDRYER	0	0.24193E+00	343836.4	5120355.3	129.4	35.91	1.62	16.70	NO		NO
PILE3	0	0.23301E-05	343607.0	5120561.2	136.3	19.81	18.78	9.21	NO		NO
PILE4	0	0.23301E-05	343670.6	5120616.8	137.3	19.81	19.51	9.21	NO		NO
PILE5	0	0.21000E-04	343814.5	5120573.3	131.4	19.81	21.70	9.21	NO		NO
PILE6	0	0.17490E-04	343751.3	5120694.3	130.4	19.81	21.70	9.21	NO		NO

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** LINE SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	FIRST COORD X (METERS)	FIRST COORD Y (METERS)	SECOND COORD X (METERS)	SECOND COORD Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF LINE (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CONVEYOR	0	0.15209E-03	343751.5	5120693.1	343814.2	5120573.5	130.4	19.81	1.00	0.00	NO	

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	PILE2 , NEWDRYER , PILE3 , PILE4 , PILE5 , PILE6 , CONVEYOR ,

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	10.72629c	ON 20091724:	AT (343875.00, 5120275.00, 120.38, 129.86, 1.50)	DC	
	HIGH 6TH HIGH VALUE IS	7.79272	ON 18101624:	AT (343862.50, 5120262.50, 121.19, 129.86, 1.50)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

```
*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                              ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

** Model Options Selected:
     * Model Uses Regulatory DEFAULT Options
     * Model Is Setup For Calculation of Average CONCentration Values.
     * NO GAS DEPOSITION Data Provided.
     * NO PARTICLE DEPOSITION Data Provided.
     * Model Uses NO DRY DEPLETION. DDPLETE  =  F
     * Model Uses NO WET DEPLETION. WETDPLT  =  F
     * Stack-tip Downwash.
     * Model Accounts for ELEVated Terrain Effects.
     * Use Calms Processing Routine.
     * Use Missing Data Processing Routine.
     * No Exponential Decay.
     * Model Uses RURAL Dispersion Only.
     * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
     * CCVR_Sub - Meteorological data includes CCVR substitutions
     * TEMP_Sub - Meteorological data includes TEMP substitutions
     * Model Accepts FLAGPOLE Receptor . Heights.
     * The User Specified a Pollutant Type of: PM2.5

**Note that special processing requirements apply for the 24-hour PM2.5 NAAQS - check available guidance.
  Model will process user-specified ranks of high 24-hour values averaged across the number of years modeled, and
  the multi-year average of individual ANNUAL values, averaged across the number of years modeled.

**Model Calculates  1 Short Term Average(s) of:  24-HR

**This Run Includes:      7 Source(s);       1 Source Group(s); and    7282 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      6 VOLUME source(s)
                and:      0 AREA type source(s)
                and:      1 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)
                and:      0 SWPOINT source(s)


**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date:  24142

**Output Options Selected:
```

```
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   122.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.9 MB of RAM.

**Input Runstream File:          C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_PM2.5_24.DTA
**Output Print File:             C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_PM2.5_24.LST

**File for Summary of Results:   C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_PM2.5_24.SUM
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
PILE2	0	0.35383E-07	343708.8	5120503.8	140.4	19.81	21.70	9.21	NO		NO
NEWDRYER	0	0.42862E-01	343836.4	5120355.3	129.4	35.91	1.62	16.70	NO		NO
PILE3	0	0.35383E-07	343607.0	5120561.2	136.3	19.81	18.78	9.21	NO		NO
PILE4	0	0.35383E-07	343670.6	5120616.8	137.3	19.81	19.51	9.21	NO		NO
PILE5	0	0.31931E-06	343814.5	5120573.3	131.4	19.81	21.70	9.21	NO		NO
PILE6	0	0.26494E-06	343751.3	5120694.3	130.4	19.81	21.70	9.21	NO		NO

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** LINE SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	FIRST COORD X (METERS)	FIRST COORD Y (METERS)	SECOND COORD X (METERS)	SECOND COORD Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF LINE (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CONVEYOR	0	0.25987E-04	343751.5	5120693.1	343814.2	5120573.5	130.4	19.81	1.00	0.00	NO	

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	PILE2 , NEWDRYER , PILE3 , PILE4 , PILE5 , PILE6 , CONVEYOR ,

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 8TH-HIGHEST 24-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF PM2.5 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	1.10876 AT	(343858.16, 5120262.27, 121.97, 129.86, 1.50)	DC	
	2ND HIGHEST VALUE IS	1.09212 AT	(343862.50, 5120262.50, 121.19, 129.86, 1.50)	DC	
	3RD HIGHEST VALUE IS	1.00371 AT	(343875.00, 5120262.50, 118.80, 130.04, 1.50)	DC	
	4TH HIGHEST VALUE IS	1.00365 AT	(343875.00, 5120275.00, 120.38, 129.86, 1.50)	DC	
	5TH HIGHEST VALUE IS	0.99320 AT	(343875.24, 5120279.19, 120.86, 129.86, 1.50)	DC	
	6TH HIGHEST VALUE IS	0.99156 AT	(343862.50, 5120250.00, 119.80, 130.04, 1.50)	DC	
	7TH HIGHEST VALUE IS	0.97214 AT	(343850.00, 5120250.00, 122.46, 129.53, 1.50)	DC	
	8TH HIGHEST VALUE IS	0.94315 AT	(343875.00, 5120250.00, 117.11, 130.04, 1.50)	DC	
	9TH HIGHEST VALUE IS	0.90706 AT	(343862.50, 5120237.50, 117.67, 130.04, 1.50)	DC	
	10TH HIGHEST VALUE IS	0.87749 AT	(343875.00, 5120237.50, 114.66, 130.04, 1.50)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

                                        ***   MODEL SETUP OPTIONS SUMMARY   ***
 -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE = F
      * Model Uses NO WET DEPLETION. WETDPLT = F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses RURAL Dispersion Only.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Accepts FLAGPOLE Receptor . Heights.
      * The User Specified a Pollutant Type of: PM2.5

 **Note that special processing requirements apply for the 24-hour PM2.5 NAAQS - check available guidance.
   Model will process user-specified ranks of high 24-hour values averaged across the number of years modeled, and
   the multi-year average of individual ANNUAL values, averaged across the number of years modeled.

 **Model Calculates ANNUAL Averages Only

 **This Run Includes: 7 Source(s);   1 Source Group(s); and   7282 Receptor(s)

                with: 0 POINT(s), including
                           0 POINTCAP(s) and   0 POINTHOR(s)
                 and: 6 VOLUME source(s)
                 and: 0 AREA type source(s)
                 and: 1 LINE source(s)
                 and: 0 RLINE/RLINEXT source(s)
                 and: 0 OPENPIT source(s)
                 and: 0 BUOYANT LINE source(s) with a total of   0 line(s)
                 and: 0 SWPOINT source(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date: 24142

 **Output Options Selected:

```
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   122.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.7 MB of RAM.

**Input Runstream File:          C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_PM2.5_annual_01
**Output Print File:             C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_PM2.5_annual_01

**File for Summary of Results:   C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_PM2.5_annual_01
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
PILE2	0	0.35383E-07	343708.8	5120503.8	140.4	19.81	21.70	9.21	NO		NO
NEWDRYER	0	0.42862E-01	343836.4	5120355.3	129.4	35.91	1.62	16.70	NO		NO
PILE3	0	0.35383E-07	343607.0	5120561.2	136.3	19.81	18.78	9.21	NO		NO
PILE4	0	0.35383E-07	343670.6	5120616.8	137.3	19.81	19.51	9.21	NO		NO
PILE5	0	0.31931E-06	343814.5	5120573.3	131.4	19.81	21.70	9.21	NO		NO
PILE6	0	0.26494E-06	343751.3	5120694.3	130.4	19.81	21.70	9.21	NO		NO

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** LINE SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	FIRST COORD X (METERS)	FIRST COORD Y (METERS)	SECOND COORD X (METERS)	SECOND COORD Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF LINE (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CONVEYOR	0	0.25987E-04	343751.5	5120693.1	343814.2	5120573.5	130.4	19.81	1.00	0.00	NO	

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	PILE2 , NEWDRYER , PILE3 , PILE4 , PILE5 , PILE6 , CONVEYOR ,

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF PM2.5 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.30981 AT	(343858.16, 5120262.27, 121.97, 129.86, 1.50)	DC	
	2ND HIGHEST VALUE IS	0.30708 AT	(343862.50, 5120262.50, 121.19, 129.86, 1.50)	DC	
	3RD HIGHEST VALUE IS	0.29680 AT	(343875.24, 5120279.19, 120.86, 129.86, 1.50)	DC	
	4TH HIGHEST VALUE IS	0.29404 AT	(343875.00, 5120275.00, 120.38, 129.86, 1.50)	DC	
	5TH HIGHEST VALUE IS	0.28017 AT	(343875.00, 5120262.50, 118.80, 130.04, 1.50)	DC	
	6TH HIGHEST VALUE IS	0.27794 AT	(343862.50, 5120250.00, 119.80, 130.04, 1.50)	DC	
	7TH HIGHEST VALUE IS	0.27384 AT	(343850.00, 5120250.00, 122.46, 129.53, 1.50)	DC	
	8TH HIGHEST VALUE IS	0.26405 AT	(343875.00, 5120250.00, 117.11, 130.04, 1.50)	DC	
	9TH HIGHEST VALUE IS	0.25183 AT	(343862.50, 5120237.50, 117.67, 130.04, 1.50)	DC	
	10TH HIGHEST VALUE IS	0.25092 AT	(343841.07, 5120245.34, 123.72, 129.25, 1.50)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

                                        ***   MODEL SETUP OPTIONS SUMMARY   ***
 -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE = F
      * Model Uses NO WET DEPLETION. WETDPLT = F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Full Conversion Assumed for NO2.
      * Model Uses RURAL Dispersion Only.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Accepts FLAGPOLE Receptor . Heights.
      * The User Specified a Pollutant Type of: NO2

 **Note that special processing requirements apply for the 1-hour NO2 NAAQS - check available guidance.
   Model will process user-specified ranks of daily maximum 1-hour values averaged across the number of years modeled.
   For annual NO2 NAAQS modeling, the multi-year maximum of PERIOD values can be simulated using the MULTYEAR keyword.
   Multi-year PERIOD and 1-hour values should only be done in a single model run using the MULTYEAR option with a
   single multi-year meteorological data file using STARTEND keyword.

 **Model Calculates 1 Short Term Average(s) of: 1-HR

 **This Run Includes: 1 Source(s);   1 Source Group(s); and   7282 Receptor(s)

                with: 0 POINT(s), including
                           0 POINTCAP(s) and   0 POINTHOR(s)
                 and: 1 VOLUME source(s)
                 and: 0 AREA type source(s)
                 and: 0 LINE source(s)
                 and: 0 RLINE/RLINEXT source(s)
                 and: 0 OPENPIT source(s)
                 and: 0 BUOYANT LINE source(s) with a total of   0 line(s)
                 and: 0 SWPOINT source(s)

 **Model Set To Continue RUNning After the Setup Testing.

```
**The AERMET Input Meteorological Data Version Date:  24142

**Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   122.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.9 MB of RAM.

**Input Runstream File:          C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_NO2_1hr.DTA
**Output Print File:             C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_NO2_1hr.LST

**File for Summary of Results:   C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_NO2_1hr.SUM
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
NEWDRYER	0	0.73067E-01	343836.4	5120355.3	129.4	35.91	1.62	16.70	NO		NO

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	NEWDRYER ,

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	11.95194 AT	(343824.11,	5120260.90,	127.23,	127.23,	1.50)	DC	
	2ND HIGHEST VALUE IS	11.93151 AT	(343807.16,	5120276.47,	129.11,	129.11,	1.50)	DC	
	3RD HIGHEST VALUE IS	11.56394 AT	(343800.00,	5120275.00,	129.14,	129.14,	1.50)	DC	
	4TH HIGHEST VALUE IS	11.51631 AT	(343773.24,	5120307.59,	129.71,	129.71,	1.50)	DC	
	5TH HIGHEST VALUE IS	11.47548 AT	(343762.50,	5120312.50,	129.69,	129.69,	1.50)	DC	
	6TH HIGHEST VALUE IS	11.34117 AT	(343825.00,	5120250.00,	126.85,	126.85,	1.50)	DC	
	7TH HIGHEST VALUE IS	11.15005 AT	(343756.28,	5120323.15,	129.77,	129.77,	1.50)	DC	
	8TH HIGHEST VALUE IS	11.10569 AT	(343800.00,	5120262.50,	128.94,	128.94,	1.50)	DC	
	9TH HIGHEST VALUE IS	11.03029 AT	(343787.50,	5120275.00,	129.25,	129.25,	1.50)	DC	
	10TH HIGHEST VALUE IS	11.01626 AT	(343858.16,	5120262.27,	121.97,	129.86,	1.50)	DC	

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM 8TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	8.98499 AT	(343773.24,	5120307.59,	129.71,	129.71,	1.50)	DC	
	2ND HIGHEST VALUE IS	8.95835 AT	(343790.20,	5120292.03,	129.49,	129.49,	1.50)	DC	
	3RD HIGHEST VALUE IS	8.69727 AT	(343807.16,	5120276.47,	129.11,	129.11,	1.50)	DC	
	4TH HIGHEST VALUE IS	8.65203 AT	(343775.00,	5120300.00,	129.60,	129.60,	1.50)	DC	
	5TH HIGHEST VALUE IS	8.48707 AT	(343787.50,	5120287.50,	129.40,	129.40,	1.50)	DC	
	6TH HIGHEST VALUE IS	8.40237 AT	(343762.50,	5120312.50,	129.69,	129.69,	1.50)	DC	
	7TH HIGHEST VALUE IS	8.35711 AT	(343756.28,	5120323.15,	129.77,	129.77,	1.50)	DC	
	8TH HIGHEST VALUE IS	8.34647 AT	(343800.00,	5120275.00,	129.14,	129.14,	1.50)	DC	
	9TH HIGHEST VALUE IS	8.05484 AT	(343812.50,	5120262.50,	128.34,	128.34,	1.50)	DC	
	10TH HIGHEST VALUE IS	7.92992 AT	(343750.00,	5120325.00,	129.79,	129.79,	1.50)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

                                        ***   MODEL SETUP OPTIONS SUMMARY   ***
 -

 ** Model Options Selected:
     * Model Uses Regulatory DEFAULT Options
     * Model Is Setup For Calculation of Average CONCentration Values.
     * NO GAS DEPOSITION Data Provided.
     * NO PARTICLE DEPOSITION Data Provided.
     * Model Uses NO DRY DEPLETION. DDPLETE = F
     * Model Uses NO WET DEPLETION. WETDPLT = F
     * Stack-tip Downwash.
     * Model Accounts for ELEVated Terrain Effects.
     * Use Calms Processing Routine.
     * Use Missing Data Processing Routine.
     * No Exponential Decay.
     * Full Conversion Assumed for NO2.
     * Model Uses RURAL Dispersion Only.
     * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
     * CCVR_Sub - Meteorological data includes CCVR substitutions
     * TEMP_Sub - Meteorological data includes TEMP substitutions
     * Model Accepts FLAGPOLE Receptor . Heights.
     * The User Specified a Pollutant Type of: NO2

 **NOTE: Special processing requirements applicable for the 1-hour NO2 NAAQS have been disabled!!!
        User has specified non-standard averaging periods:
        High ranked 1-hour values are NOT averaged across the number of years modeled, and
        complete years of data are NOT required.

 **Model Calculates ANNUAL Averages Only

 **This Run Includes: 1 Source(s);   1 Source Group(s); and   7282 Receptor(s)

               with: 0 POINT(s), including
                           0 POINTCAP(s) and   0 POINTHOR(s)
                and: 1 VOLUME source(s)
                and: 0 AREA type source(s)
                and: 0 LINE source(s)
                and: 0 RLINE/RLINEXT source(s)
                and: 0 OPENPIT source(s)
                and: 0 BUOYANT LINE source(s) with a total of   0 line(s)
                and: 0 SWPOINT source(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date: 24142

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**Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   122.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.7 MB of RAM.

**Input Runstream File:          C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_NO2_annual.D
**Output Print File:             C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_NO2_annual.L

**File for Summary of Results:   C:\Beework\TCG-002 Modelling Files\TCG Beest - New SP6 Location 250421_2018-2022_NO2_annual.S
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
NEWDRYER	0	0.73067E-01	343836.4	5120355.3	129.4	35.91	1.62	16.70	NO		NO

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	NEWDRYER ,

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.51514 AT	(343858.16, 5120262.27, 121.97, 129.86, 1.50)	DC	
	2ND HIGHEST VALUE IS	0.51040 AT	(343862.50, 5120262.50, 121.19, 129.86, 1.50)	DC	
	3RD HIGHEST VALUE IS	0.49222 AT	(343875.24, 5120279.19, 120.86, 129.86, 1.50)	DC	
	4TH HIGHEST VALUE IS	0.48765 AT	(343875.00, 5120275.00, 120.38, 129.86, 1.50)	DC	
	5TH HIGHEST VALUE IS	0.46435 AT	(343875.00, 5120262.50, 118.80, 130.04, 1.50)	DC	
	6TH HIGHEST VALUE IS	0.46104 AT	(343862.50, 5120250.00, 119.80, 130.04, 1.50)	DC	
	7TH HIGHEST VALUE IS	0.45428 AT	(343850.00, 5120250.00, 122.46, 129.53, 1.50)	DC	
	8TH HIGHEST VALUE IS	0.43718 AT	(343875.00, 5120250.00, 117.11, 130.04, 1.50)	DC	
	9TH HIGHEST VALUE IS	0.41682 AT	(343862.50, 5120237.50, 117.67, 130.04, 1.50)	DC	
	10TH HIGHEST VALUE IS	0.41550 AT	(343841.07, 5120245.34, 123.72, 129.25, 1.50)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR