OLYMPIC REGION CLEAN AIR AGENCY

2940 Limited Lane NW - Olympia, Washington 98502 - 360-539-7610 – Fax 360-491-6308

FORM 1- NOTICE OF CONSTRUCTION

TO CONSTRUCT - INSTALL - ESTABLISH OR MODIFY AN AIR CONTAMINANT SOURCE

Form 1 Instructions:

1. Please complete all the fields below. **This NOC application is considered incomplete until signed.**
2. If the application contains any confidential business information, please complete a Request of Confidentiality of Records (www.orcaa.org/forms).
3. Duty to Correction Application: An applicant has the duty to supplement or correct an application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application must, upon becoming aware of such failure or incorrect submittal, promptly submit supplementary factors or corrected information.

Business Name: L&I/WSDA Safety and Health Laboratory & Training Center

Mailing Address: Dept. of Labor & Industries
7273 Linderson SW, P.O. Box 44837
Olympia, WA 98504-4837

Physical Address of Project or New Source: 7321 ~~7345~~ Linderson Way SW, Olympia, WA ~~98504~~ 98501

Billing Address: Dept of L&I
7273 Linderson Way SW, Olympia WA, 98504-4837

For ORCAA use only

File No: 123
County No: 67
Source No: 151
Application No: 22NOC1564

Date Received:

Received
JUN 13 2022
ORCAA

Project or Equipment to be installed/established:

Emergency Stanby Generator

Anticipated startup date: 01/30/2023 Is facility currently registered with ORCAA? Yes ☐ No ☑

This project must meet the requirements of the State Environmental Policy Act (SEPA) before ORCAA can issue final approval. Indicate the SEPA compliance option:

- ☑ SEPA was satisfied by _____ (government agency) on 2/8/21 (date) - Include a copy of the SEPA determination
- ☑ SEPA threshold determination by _____ (government agency) is pending - Include a copy of the environmental checklist
- ☐ ORCAA is the only government agency requiring a permit - Include ORCAA Environmental Checklist
- ☐ This project is exempt from SEPA per _____ (WAC citation).

Name of Owner of Business: Wesley Kirkman, L&I Fac. Serv. Progm.

Title: Facilities Serv. Program Director

Email: Kirw235@lni.wa.gov Phone: 360-902-6941

Authorized Representative for Application (if different than owner): Dr. Reuben E. Amamilo, Capital Proj. E&A Services

Title: Capital Projects Director

Email: amar253@lni.wa.gov Phone: 360-902-3515

I hereby certify that the information contained in this application is, to the best of my knowledge, complete and correct.

Signature of Owner or Authorized Representative: (sign in Blue Ink)

Date: 6/6/2022

IMPORTANT: Do not send via email or other electronic means. ORCAA must receive Original, hardcopy, signed application and payment prior to processing application.

Agency Use Only

Revised 2/11/2020

OLYMPIC REGION CLEAN AIR AGENCY (ORCAA)
2940 Limited Lane NW, Olympia, WA 98502
Engineering Division (360) 539-7610
Website: orcaa.org fax (360) 491-6308

Form 18
Internal Combustion Engines

NOC #	Date	File #

Form 18 is to be completed for all internal combustion engines except turbines. (For turbines, submit Form 17). Submit one form for each engine. If this is a new engine or a modification to an existing engine, your application must also include Form 5 and an analysis of toxic air pollutant emissions in accordance with Chapter 173-460 of the Washington Administrative Code. Completion of Form 5 requires determining daily and annual toxic air pollutant emissions based on the maximum potential to emit of the engine. Additional forms and all ORCAA regulations and rules are available on the Agency's web site. Contact ORCAA's Engineering Division at the above telephone number if you need assistance completing this form. Please include the engine manufacturer's equipment specification sheet or brochure if one is available.

1. SUMMARY ☒ New Engine ☐ Engine Modification ☐ New/Additional Fuel ☐ Other:

Company Name L&I/WSDA Safety and Health Laboratory & Training Center County No.* _____

Source Description Project Design Source No.* _____ *(If unknown leave blank)*

Initial Date of Operation 3/30/23 *(Not required for modification of an existing permitted source)*

Operating Schedule *Typical hrs/day* _____ *Days/week* _____ *Weeks/yr* _____ *Maximum hrs/day* 2 - 3

2. ENGINE INFORMATION ☐ *Check here if applying for approval of portable equipment.*
(See ORCAA Regulation 6.1.1 for portable equipment requirements)

Engine Type: *(Check one)* ☐ 4 Stroke ☒ 2 Stroke Compression Ignition (Diesel) or ☐ 4 Stroke ☐ 2 Stroke Spark Ignition

Engine Manufacturer Cat Model C18 ATAAC Model Year 2022

EPA/CARB Engine Family Name EPA tier II Engine Serial No. TBD

Engine Displacement 1106.3 *(cu in)* Maximum rated output *(bhp)* 871 Typical load as % of bhp rating _____

Is this an emergency/standby engine? ☒ Yes ☐ No

(*Complete and check all that apply)*

Certification: ☒ EPA Certified ☐ CARB Certified _____

☐ None *(If None is checked, please indicate below the items applicable to this engine.)*

☐ Naturally aspirated ☐ Supercharged ☒ Turbocharged ☐ Inter-cooled ☒ After-cooled

☐ Timing retard ≥ 4º ☐ Lean-burn ☐ Rich-burn

Primary Use: ☒ Electrical generation ☐ Cogeneration ☐ Pump driver ☐ Fire pump driver

☐ Compressor driver ☐ Tub grinder driver ☐ Other: _____

3. CONTROL DEVICE INFORMATION *Complete this section only if the engine exhausts to an add-on control device.*
☐ *Check here if the engine has more than one add-on control device and repeat this section for each. Include manufacturer's technical specification sheet or brochure for each control device.*

Control device number # _____ *(If unknown leave blank)* ☐ New ☐ Existing

Device type: ☐ Diesel catalyzed particulate filter ☐ Oxidation catalyst ☐ Selective catalytic reduction (SCR)

☐ Non-selective catalytic reduction (NSCR or 3-way catalyst) ☐ Other: _____

Make, Model, and Rated Capacity _____

Control device control efficiencies at typical operation *(Use the basis codes listed below. If unknown leave blank)*

Control Efficiency/Emission Factor Basis Codes: *(Submit supporting documentation if available)*

(1) Source testing or other measurement by plant
(2) Source testing or measurement by ORCAA
(3) Specification from vendor
(4) Material balance by plant using knowledge of process
(5) Material balance by ORCAA
(6) EPA Document AP-42 Emission Factors
(7) Taken from literature other than AP-42
(8) Guess
(9) EPA/CARB Certification

Pollutant Name	Wt % Reduction	Basis Code
Particulates		
Organics		
Nitrogen Oxides		
Sulfur Dioxide		
Carbon Monoxide		
Others – ☐ Check here and attach a separate list of pollutants. Include the basis code and the control efficiency.		

Continued on reverse side

OLYMPIC REGION CLEAN AIR AGENCY

Form 18 (continued)
Internal Combustion Engines

4. EMISSION POINT/STACK INFORMATION ☐ *Check here if the engine has more than one stack or has a continuous pollutant emission monitor and repeat this section for each.*

Emission point number # _____ *(If unknown leave blank)* ■ New ☐ Existing

Stack outlet height from ground level *(ft)* 8.5

Diameter of stack outlet *(inches)* 6 or Outlet cross-section area *(square inches)* _____

Direction of outlet *(check one)* ■ Horizontal ☐ Vertical End of outlet *(check one)* ☐ Open/hinged flap ☐ Rain cap

Exhaust rate at typical operation *(acfm)* 5618 Exhaust temperature at typical operation *(ºF)* 797

5. AIR TOXIC ASSESSMENT INFORMATION.

Distance from engine to the property line of the nearest residence *(ft)* 1500 or *(check if)* ☐ Greater than one mile

Distance from engine to the property line of the nearest school[1] *(ft)* _____ or *(check if)* ■ Greater than 1000 ft

Describe the nearest non-residential, non-school site *(check one)* ☐ Industrial ☐ Commercial ☐ Hospital

☐ Day care center ■ Other Washington State Department of Corrections

Distance from engine to the property line of the nearest non-residential, non- school site*(ft)* 500 or ☐ Greater than one mile

1. *K-12 and more than twelve children only.*

6. FUEL DATA *Complete the table below for each fuel burned. If you are using a fuel other than those listed in the fuel table, attach a* ***fuel analysis*** *indicating the higher heating value, sulfur content, and nitrogen content. Please clearly indicate the measurement unit that corresponds to the information you are submitting.* ☐ *Check here if you are using more than two fuels, and attach a copy of this page listing the additional fuels.*

Primary Fuel

Fuel[1] _____ Name Diesel

Maximum Fuel Use Rate[2] 48.8 *gal/hr or SCF/hr*

Annual Fuel Usage[3] 183 *gal/yr or therm/yr or SCF/yr*

Typical Heat Content[4] _____ *BTU/gal or BTU/SCF*

Sulfur Content[4] _____ *wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Control Factor (√)[7]
Particulates		0.03		☐
Organics		0.09		☐
Nitrogen Oxides		4.59		☐
Carbon Monoxide		0.21		☐

Others – ☐ Check here and attach a separate list under each fuel used.

Secondary Fuel

Fuel[1] _____ Name _____

Maximum Fuel Use Rate[2] _____ *gal/hr or SCF/hr*

Annual Fuel Usage[3] _____ *gal/yr or therm/yr or SCF/yr*

Typical Heat Content[4] _____ *BTU/gal or BTU/SCF*

Sulfur Content[4] _____ *wt% liquids or ppmv gases*

Emission Factors *(Optional)*

Pollutant Name	Emission Factor	Units[5]	Basis Code[6]	Control Factor (√)[7]
Particulates				☐
Organics				☐
Nitrogen Oxides				☐
Carbon Monoxide				☐

Others – ☐ Check here and attach a separate list under each fuel used.

1. *Fuel Table:* Diesel, Bio Diesel B100, Bio Diesel B20 Blend, Gasoline, Natural Gas, Landfill Gas, Digester Gas, Liquid Petroleum Gas (LPG)
2. *Maximum fuel use rate units: gallon/hr for liquid fuels and SCF/hr for gaseous fuels. (SCF =Standard Cubic Foot)*
3. *The annual fuel usage is the actual or projected engine fuel consumption over a rolling 12-month time period. Annual usage units: gallons for liquid fuel, therms for natural gas, and SCF for other gaseous fuels. (therm = 100,000 BTUs, BTU =British Thermal Unit)*
4. *If you are using diesel, natural gas, or gasoline, you may skip this entry. Heat content units: BTU/gallon for liquid fuels, BTU/SCF for gaseous fuels. Sulfur content* units: weight % for liquid fuels, ppmv for gaseous fuels. (ppmv = parts per million by volume)
5. *Emission factors may be reported as gram/brakehp-hr, or as lb per gallon, or as lb per therm, or as lb per SCF.*
6. *See the Control Efficiency/Emission Factor Basis Code table under Section 3 on page 1 of this form.*
7. *Place a check in this column if the emission factor applies to emissions after an add-on control device.*

7. CERTIFICATION I hereby certify that all information contained herein is true and correct. *(Please sign and date this form)*

AJ Zvibleman	Sr. Electrical Designer	AJ Zvibleman	2022-05-17
Name of person certifying (print)	Title of person certifying	Signature of person certifying	Date

Phone Number: Email:

PERFORMANCE DATA[EM3838]

June 6, 2022

Performance Number: EM3838 **Change Level: 02**

SALES MODEL:	C18	**COMBUSTION:**	DIRECT INJECTION
BRAND:	CAT	**ENGINE SPEED (RPM):**	1,800
MACHINE SALES MODEL:		**HERTZ:**	60
ENGINE POWER (BHP):	983	**FAN POWER (HP):**	42.2
GEN POWER WITH FAN (EKW):	650.0	**ADDITIONAL PARASITICS (HP):**	10.1
COMPRESSION RATIO:	14	**ASPIRATION:**	TA
RATING LEVEL:	STANDBY	**AFTERCOOLER TYPE:**	ATAAC
PUMP QUANTITY:	1	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC, ATAAC
FUEL TYPE:	DIESEL	**INLET MANIFOLD AIR TEMP (F):**	120
MANIFOLD TYPE:	DRY	**JACKET WATER TEMP (F):**	192.2
GOVERNOR TYPE:	ELEC	**TURBO CONFIGURATION:**	PARALLEL
CAMSHAFT TYPE:	STANDARD	**TURBO QUANTITY:**	2
IGNITION TYPE:	CI	**TURBOCHARGER MODEL:**	GTD5008 0.75 A/R
INJECTOR TYPE:	EUI	**CERTIFICATION YEAR:**	2018
REF EXH STACK DIAMETER (IN):	6	**PISTON SPD @ RATED ENG SPD (FT/MIN):**	2,161.4
MAX OPERATING ALTITUDE (FT):	3,996		

INDUSTRY	SUBINDUSTRY	APPLICATION
ELECTRIC POWER	STANDARD	PACKAGED GENSET

General Performance Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	ISO BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	ISO VOL FUEL CONSUMPTN (VFC)	ELEC SPEC FUEL CONSUMPTN (ESFC)	ISO ELEC SPEC FUEL CONSUMPTN (ESFC)
EKW	%	BHP	PSI	LB/BHP-HR	LB/BHP-HR	GAL/HR	GAL/HR	LB/EKW-HR	LB/EKW-HR
650.0	100	984	391	0.349	0.344	48.5	47.8	0.529	0.519
585.0	90	885	352	0.347	0.342	43.2	42.6	0.524	0.514
520.0	80	788	314	0.353	0.348	39.3	38.7	0.536	0.526
487.5	75	741	295	0.350	0.345	36.6	36.1	0.533	0.522
455.0	70	694	276	0.345	0.340	33.7	33.3	0.526	0.516
390.0	60	601	239	0.348	0.343	29.5	29.1	0.537	0.526
325.0	50	509	202	0.353	0.348	25.3	25.0	0.553	0.542
260.0	40	419	167	0.359	0.354	21.2	20.9	0.579	0.568
195.0	30	329	131	0.370	0.364	17.1	16.9	0.623	0.612
162.5	25	284	113	0.377	0.372	15.1	14.9	0.659	0.646
130.0	20	238	95	0.389	0.383	13.1	12.9	0.713	0.699
65.0	10	146	58	0.439	0.433	9.0	8.9	0.988	0.969

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP
EKW	%	BHP	IN-HG	DEG F	DEG F	IN-HG	DEG F	IN-HG	DEG F
650.0	100	984	95.1	117.3	1,233.3	85.5	798.6	101	467.6
585.0	90	885	88.1	109.4	1,161.7	77.4	747.6	94	440.8
520.0	80	788	82.8	109.1	1,117.9	72.2	723.3	88	423.5
487.5	75	741	77.1	105.9	1,084.0	66.5	703.0	82	405.1
455.0	70	694	71.6	101.6	1,048.5	60.0	682.5	77	384.0
390.0	60	601	61.3	96.6	1,008.5	51.0	672.1	66	354.2
325.0	50	509	50.9	92.2	976.4	42.2	670.0	55	323.1
260.0	40	419	39.4	88.2	933.6	33.6	656.6	43	281.4
195.0	30	329	28.0	84.8	880.5	25.0	634.1	31	236.7
162.5	25	284	22.7	83.3	849.9	20.8	619.2	25	214.0
130.0	20	238	18.0	82.0	807.2	17.2	595.6	20	192.6
65.0	10	146	9.8	80.1	687.4	11.5	523.3	12	151.2

General Performance Data (Continued)

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
EKW	%	BHP	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
650.0	100	984	2,309.8	5,618.4	10,086.4	10,430.1	2,195.3	2,020.9

585.0	90	885	2,209.4	5,117.7	9,595.2	9,901.9	2,084.3	1,927.2
520.0	80	788	2,129.5	4,822.0	9,208.4	9,486.0	2,004.2	1,859.7
487.5	75	741	2,034.7	4,528.2	8,771.3	9,028.9	1,914.9	1,779.2
455.0	70	694	1,941.2	4,196.1	8,342.6	8,581.8	1,806.2	1,680.0
390.0	60	601	1,761.3	3,741.1	7,525.5	7,733.5	1,625.3	1,513.7
325.0	50	509	1,574.1	3,320.0	6,687.6	6,867.3	1,445.0	1,347.4
260.0	40	419	1,364.6	2,827.3	5,760.8	5,911.2	1,245.3	1,163.6
195.0	30	329	1,151.2	2,323.3	4,829.0	4,950.5	1,044.4	978.7
162.5	25	284	1,046.0	2,072.5	4,374.8	4,481.9	944.4	886.6
130.0	20	238	946.0	1,830.4	3,947.8	4,040.5	852.8	802.3
65.0	10	146	755.3	1,359.8	3,147.2	3,211.4	680.1	643.3

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHAUST RECOVERY TO 350F	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
650.0	100	984	11,813	6,939	37,627	19,655	5,612	14,151	41,710	105,365	112,240
585.0	90	885	10,521	6,270	33,118	16,441	5,008	12,736	37,524	94,034	100,169
520.0	80	788	9,757	5,599	30,632	14,737	4,551	11,592	33,437	85,442	91,017
487.5	75	741	9,144	5,573	28,123	13,235	4,239	10,511	31,425	79,583	84,776
455.0	70	694	8,489	5,661	25,162	11,826	3,908	9,434	29,424	73,382	78,170
390.0	60	601	7,717	5,284	22,097	10,303	3,417	7,765	25,478	64,155	68,341
325.0	50	509	7,027	4,769	19,099	9,081	2,933	6,184	21,590	55,075	58,669
260.0	40	419	6,418	4,176	16,350	7,476	2,458	4,458	17,762	46,152	49,164
195.0	30	329	5,771	3,581	13,465	5,785	1,985	2,937	13,947	37,269	39,701
162.5	25	284	5,406	3,282	11,948	4,956	1,748	2,291	12,032	32,818	34,960
130.0	20	238	5,010	2,985	10,416	4,064	1,513	1,749	10,104	28,410	30,264
65.0	10	146	4,055	2,394	7,420	2,261	1,048	897	6,197	19,678	20,962

Emissions Data

DIESEL

RATED SPEED NOMINAL DATA: 1800 RPM

GENSET POWER WITH FAN		EKW	650.0	487.5	325.0	162.5	65.0
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BHP	984	741	509	284	146
TOTAL NOX (AS NO2)		G/HR	4,496	2,823	1,816	1,264	751
TOTAL CO		G/HR	208	95	90	345	1,048
TOTAL HC		G/HR	86	66	48	57	380
TOTAL CO2		KG/HR	501	378	261	157	91
PART MATTER		G/HR	33.4	20.2	21.2	24.7	47.2
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,053.7	1,717.1	1,583.2	1,880.0	1,848.3
TOTAL CO	(CORR 5% O2)	MG/NM3	95.3	56.6	95.6	538.2	3,087.9
TOTAL HC	(CORR 5% O2)	MG/NM3	34.1	34.8	37.3	74.3	1,010.0
PART MATTER	(CORR 5% O2)	MG/NM3	13.0	10.3	16.3	32.3	122.3
TOTAL NOX (AS NO2)	(CORR 15% O2)	MG/NM3	762.1	637.2	587.5	697.6	685.8
TOTAL CO	(CORR 15% O2)	MG/NM3	35.4	21.0	35.5	199.7	1,145.8
TOTAL HC	(CORR 15% O2)	MG/NM3	12.6	12.9	13.8	27.6	374.8
PART MATTER	(CORR 15% O2)	MG/NM3	4.8	3.8	6.0	12.0	45.4
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,000	836	771	916	900
TOTAL CO	(CORR 5% O2)	PPM	76	45	76	431	2,470
TOTAL HC	(CORR 5% O2)	PPM	64	65	70	139	1,885
TOTAL NOX (AS NO2)	(CORR 15% O2)	PPM	371	310	286	340	334
TOTAL CO	(CORR 15% O2)	PPM	28	17	28	160	917
TOTAL HC	(CORR 15% O2)	PPM	24	24	26	51	700
TOTAL NOX (AS NO2)		G/HP-HR	4.61	3.83	3.58	4.46	5.15
TOTAL CO		G/HP-HR	0.21	0.13	0.18	1.22	7.18
TOTAL HC		G/HP-HR	0.09	0.09	0.10	0.20	2.60
PART MATTER		G/HP-HR	0.03	0.03	0.04	0.09	0.32

PERFORMANCE DATA[EM3838]

June 6, 2022

TOTAL NOX (AS NO2)	G/KW-HR	6.26	5.21	4.87	6.07	7.00
TOTAL CO	G/KW-HR	0.29	0.18	0.24	1.66	9.76
TOTAL HC	G/KW-HR	0.12	0.12	0.13	0.27	3.53
PART MATTER	G/KW-HR	0.05	0.04	0.06	0.12	0.44
TOTAL NOX (AS NO2)	LB/HR	9.91	6.22	4.00	2.79	1.66
TOTAL CO	LB/HR	0.46	0.21	0.20	0.76	2.31
TOTAL HC	LB/HR	0.19	0.15	0.11	0.13	0.84
TOTAL CO2	LB/HR	1,104	834	576	347	201
PART MATTER	LB/HR	0.07	0.04	0.05	0.05	0.10
OXYGEN IN EXH	%	10.7	12.1	12.9	13.6	15.1
DRY SMOKE OPACITY	%	0.5	0.4	0.6	1.1	0.5
BOSCH SMOKE NUMBER		0.72	0.70	0.75	0.88	0.72

RATED SPEED POTENTIAL SITE VARIATION: 1800 RPM

GENSET POWER WITH FAN		**EKW**	**650.0**	**487.5**	**325.0**	**162.5**	**65.0**
PERCENT LOAD		**%**	**100**	**75**	**50**	**25**	**10**
ENGINE POWER		**BHP**	**984**	**741**	**509**	**284**	**146**
TOTAL NOX (AS NO2)		G/HR	4,855	3,049	1,962	1,365	811
TOTAL CO		G/HR	388	178	169	646	1,960
TOTAL HC		G/HR	162	125	91	108	717
PART MATTER		G/HR	65.2	39.4	41.3	48.3	92.0
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,218.0	1,854.5	1,709.9	2,030.4	1,996.1
TOTAL CO	(CORR 5% O2)	MG/NM3	178.2	105.8	178.8	1,006.5	5,774.4
TOTAL HC	(CORR 5% O2)	MG/NM3	64.4	65.8	70.5	140.3	1,908.9
PART MATTER	(CORR 5% O2)	MG/NM3	25.3	20.2	31.7	62.9	238.4
TOTAL NOX (AS NO2)	(CORR 15% O2)	MG/NM3	823.0	688.1	634.5	753.4	740.7
TOTAL CO	(CORR 15% O2)	MG/NM3	66.1	39.3	66.3	373.5	2,142.7
TOTAL HC	(CORR 15% O2)	MG/NM3	23.9	24.4	26.2	52.1	708.3
PART MATTER	(CORR 15% O2)	MG/NM3	9.4	7.5	11.8	23.4	88.5
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,080	903	833	989	972
TOTAL CO	(CORR 5% O2)	PPM	143	85	143	805	4,620
TOTAL HC	(CORR 5% O2)	PPM	120	123	132	262	3,563
TOTAL NOX (AS NO2)	(CORR 15% O2)	PPM	401	335	309	367	361
TOTAL CO	(CORR 15% O2)	PPM	53	31	53	299	1,714
TOTAL HC	(CORR 15% O2)	PPM	45	46	49	97	1,322
TOTAL NOX (AS NO2)		G/HP-HR	4.98	4.14	3.87	4.82	5.56
TOTAL CO		G/HP-HR	0.40	0.24	0.33	2.28	13.42
TOTAL HC		G/HP-HR	0.17	0.17	0.18	0.38	4.91
PART MATTER		G/HP-HR	0.07	0.05	0.08	0.17	0.63
TOTAL NOX (AS NO2)		G/KW-HR	6.77	5.63	5.26	6.55	7.56
TOTAL CO		G/KW-HR	0.54	0.33	0.45	3.10	18.25
TOTAL HC		G/KW-HR	0.23	0.23	0.24	0.52	6.68
PART MATTER		G/KW-HR	0.09	0.07	0.11	0.23	0.86
TOTAL NOX (AS NO2)		LB/HR	10.70	6.72	4.32	3.01	1.79
TOTAL CO		LB/HR	0.86	0.39	0.37	1.42	4.32
TOTAL HC		LB/HR	0.36	0.28	0.20	0.24	1.58
PART MATTER		LB/HR	0.14	0.09	0.09	0.11	0.20

Regulatory Information

EPA EMERGENCY STATIONARY		**2011 - ----**		
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 60 SUBPART IIII AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE EMERGENCY STATIONARY REGULATIONS.				
Locality	**Agency**	**Regulation**	**Tier/Stage**	**Max Limits - G/BKW - HR**
U.S. (INCL CALIF)	EPA	STATIONARY	EMERGENCY STATIONARY	CO: 3.5 NOx + HC: 6.4 PM: 0.20

Altitude Derate Data

STANDARD

ALTITUDE CORRECTED POWER CAPABILITY (BHP)

PERFORMANCE DATA[EM3838]

June 6, 2022

AMBIENT OPERATING TEMP (F)	50	60	70	80	90	100	110	120	130	140	NORMAL
ALTITUDE (FT)											
0	983	983	983	983	983	983	983	983	983	957	983
1,000	983	983	983	983	983	983	983	983	971	935	983
2,000	983	983	983	983	983	983	983	969	935	908	983
3,000	983	983	983	983	983	983	964	933	907	871	983
4,000	983	983	983	983	983	959	929	905	879	792	983
5,000	983	983	983	969	952	925	903	877	835	716	983
6,000	983	983	966	951	937	911	884	846	781	683	983
7,000	983	983	965	951	934	902	862	805	760	671	983
8,000	983	976	958	946	919	877	814	769	731	664	983
9,000	971	953	936	925	895	819	771	730	708	658	977
10,000	944	926	909	899	847	795	751	725	700	659	955
11,000	908	892	878	868	816	774	739	711	682	653	924
12,000	874	860	848	838	792	755	720	687	656	623	893
13,000	837	825	814	804	771	730	689	654	619	594	859
14,000	796	785	776	767	725	682	646	613	591	569	823
15,000	751	740	730	708	669	635	607	586	565	544	782

Cross Reference

Test Spec	Setting	Engine Arrangement	Engineering Model	Engineering Model Version	Start Effective Serial Number	End Effective Serial Number
4581994	PP7265	5365365	GS668	-	LTH00001	
4582012	PP7580	5407425	EE563	-	LT400001	
4582012	PP7580	5407426	EE563	-	LT400001	
4581994	PP7265	5411973	GS668	-	LTH00001	

Performance Parameter Reference

Parameters Reference:DM9600-14

PERFORMANCE DEFINITIONS

PERFORMANCE DEFINITIONS DM9600
APPLICATION:
Engine performance tolerance values below are representative of a typical production engine tested in a calibrated dynamometer test cell at SAE J1995 standard reference conditions. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test Facilities to assure accurate calibration of test equipment. Engine test data is corrected in accordance with SAE J1995. Additional reference material SAE J1228, J1349, ISO 8665, 3046-1:2002E, 3046-3:1989, 1585, 2534, 2288, and 9249 may apply in part or are similar to SAE J1995. Special engine rating request (SERR) test data shall be noted.
PERFORMANCE PARAMETER TOLERANCE FACTORS:
Power +/- 3%
Torque +/- 3%
Exhaust stack temperature +/- 8%
Inlet airflow +/- 5%
Intake manifold pressure-gage +/- 10%
Exhaust flow +/- 6%
Specific fuel consumption +/- 3%
Fuel rate +/- 5%
Specific DEF consumption +/- 3%
DEF rate +/- 5%
Heat rejection +/- 5%
Heat rejection exhaust only +/- 10%
Heat rejection CEM only +/- 10%
Heat Rejection values based on using treated water.
Torque is included for truck and industrial applications, do not use for Gen Set or steady state applications.
On C7 - C18 engines, at speeds of 1100 RPM and under these values are provided for reference only, and may not meet the tolerance listed.
On 3500 and C175 engines, at speeds below Peak Torque these values are provided for reference only, and may not meet the tolerance listed.
These values do not apply to C280/3600. For these models, see the tolerances listed below.
C280/3600 HEAT REJECTION TOLERANCE FACTORS:
Heat rejection +/- 10%

PERFORMANCE DATA[EM3838]

Heat rejection to Atmosphere +/- 50%
Heat rejection to Lube Oil +/- 20%
Heat rejection to Aftercooler +/- 5%
TEST CELL TRANSDUCER TOLERANCE FACTORS:
Torque +/- 0.5%
Speed +/- 0.2%
Fuel flow +/- 1.0%
Temperature +/- 2.0 C degrees
Intake manifold pressure +/- 0.1 kPa
OBSERVED ENGINE PERFORMANCE IS CORRECTED TO SAE J1995 REFERENCE AIR AND FUEL CONDITIONS.
REFERENCE ATMOSPHERIC INLET AIR
FOR 3500 ENGINES AND SMALLER
SAE J1228 AUG2002 for marine engines, and J1995 JAN2014 for other engines, reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity at the stated aftercooler water temp, or inlet manifold temp.
FOR 3600 ENGINES
Engine rating obtained and presented in accordance with ISO 3046/1 and SAE J1995 JANJAN2014 reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity and 150M altitude at the stated aftercooler water temperature.
MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE
Location for air temperature measurement air cleaner inlet at stabilized operating conditions.
REFERENCE EXHAUST STACK DIAMETER
The Reference Exhaust Stack Diameter published with this dataset is only used for the calculation of Smoke Opacity values displayed in this dataset. This value does not necessarily represent the actual stack diameter of the engine due to the variety of exhaust stack adapter options available. Consult the price list, engine order or general dimension drawings for the actual stack diameter size ordered or options available.
REFERENCE FUEL
DIESEL
Reference fuel is #2 distillate diesel with a 35API gravity;
A lower heating value is 42,780 KJ/KG (18,390 BTU/LB) when used at 15 deg C (59 deg F), where the density is 850 G/Liter (7.0936 Lbs/Gal).
GAS
Reference natural gas fuel has a lower heating value of 33.74 KJ/L (905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500 BTU/CU FT) lower heating value gas. Propane ratings are based on 87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.
ENGINE POWER (NET) IS THE CORRECTED FLYWHEEL POWER (GROSS) LESS EXTERNAL AUXILIARY LOAD
Engine corrected gross output includes the power required to drive standard equipment; lube oil, scavenge lube oil, fuel transfer, common rail fuel, separate circuit aftercooler and jacket water pumps. Engine net power available for the external (flywheel) load is calculated by subtracting the sum of auxiliary load from the corrected gross flywheel out put power. Typical auxiliary loads are radiator cooling fans, hydraulic pumps, air compressors and battery charging alternators. For Tier 4 ratings additional Parasitic losses would also include Intake, and Exhaust Restrictions.
ALTITUDE CAPABILITY
Altitude capability is the maximum altitude above sea level at standard temperature and standard pressure at which the engine could develop full rated output power on the current performance data set.
Standard temperature values versus altitude could be seen on TM2001.
When viewing the altitude capability chart the ambient temperature is the inlet air temp at the compressor inlet.
Engines with ADEM MEUI and HEUI fuel systems operating at conditions above the defined altitude capability derate for atmospheric pressure and temperature conditions outside the values defined, see TM2001.
Mechanical governor controlled unit injector engines require a setting change for operation at conditions above the altitude defined on the engine performance sheet. See your Caterpillar technical representative for non standard ratings.
REGULATIONS AND PRODUCT COMPLIANCE
TMI Emissions information is presented at 'nominal' and 'Potential Site Variation' values for standard ratings. No tolerances are applied to the emissions data. These values are subject to change at any time. The controlling federal and local emission requirements need to be verified by your Caterpillar technical representative.
Customer's may have special emission site requirements that need to be verified by the Caterpillar Product Group engineer.
EMISSION CYCLE LIMITS:
Cycle emissions Max Limits apply to cycle-weighted averages only. Emissions at individual load points may exceed the cycle-weighted limit.

PERFORMANCE DATA[EM3838]

WET & DRY EXHAUST/EMISSIONS DESCRIPTION:
Wet - Total exhaust flow or concentration of total exhaust flow
Dry - Total exhaust flow minus water vapor or concentration of exhaust flow with water vapor excluded
EMISSIONS DEFINITIONS:
Emissions : DM1176
EMISSION CYCLE DEFINITIONS
1. For constant-speed marine engines for ship main propulsion, including,diesel-electric drive, test cycle E2 shall be applied, for controllable-pitch propeller sets
test cycle E2 shall be applied.
2. For propeller-law-operated main and propeller-law-operated auxiliary engines the test cycle E3 shall be applied.
3. For constant-speed auxiliary engines test cycle D2 shall be applied.
4. For variable-speed, variable-load auxiliary engines, not included above, test cycle C1 shall be applied.
HEAT REJECTION DEFINITIONS:
Diesel Circuit Type and HHV Balance : DM9500
HIGH DISPLACEMENT (HD) DEFINITIONS:
3500: EM1500
RATING DEFINITIONS:
Agriculture : TM6008
Fire Pump : TM6009
Generator Set : TM6035
Generator (Gas) : TM6041
Industrial Diesel : TM6010
Industrial (Gas) : TM6040
Irrigation : TM5749
Locomotive : TM6037
Marine Auxiliary : TM6036
Marine Prop (Except 3600) : TM5747
Marine Prop (3600 only) : TM5748
MSHA : TM6042
Oil Field (Petroleum) : TM6011
Off-Highway Truck : TM6039
On-Highway Truck : TM6038
SOUND DEFINITIONS:
Sound Power : DM8702
Sound Pressure : TM7080
Date Released : 10/27/21

FORM 5
EMISSIONS OF HAZARDOUS AIR POLLUTANTS

Facility:_____ Emission Unit ID#:_____ Page ___ of___

Pollutant Name	CAS #	Maximum Emission Rate (lbs/hr)	Annual Emission Rate (tons/yr)
Total NOX (as NO2)		9.91	.4955
Total CO		0.46	.023
Total HC		0.19	.0095
Total C02		1,104	55.2
Particulate Matter		0.07	.0035
Facility Total			

INSTRUCTIONS
FORM 5: EMISSIONS OF HAZARDOUS AIR POLLUTANTS

Emissions estimates should be based on the maximum potential to emit. **"Potential to emit"** means the maximum capacity to emit air contaminants under physical and operational design limitations.

Emission rates or factors used in calculating annual potential emissions may be based on mass balance calculations, source test results, vendor guaranteed emission rates or concentrations, EPA approved emission factors from the EPA publication Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Source (AP-42), or other basis as approved by ORCAA. All data, assumptions, and calculations used in calculating potential emissions must be documented and included with the NOC application as an attachment. The following detailed instructions apply:

1. Please attach Material Safety Data Sheets (MSDS) for all materials used which directly or indirectly cause emissions of hazardous air pollutants such as resins, paints, solvents, cleaners, and fuels.

2. For emission rates based on source test information, please provide a one page summary of the source test results which includes the name of the testing firm, the test date, and reference to the methods used.

3. For emission estimates based on vendor guarantees, please provide a signed and dated copy of the guarantee from the vendor.

4. For calculated emissions rates, please provide details of all assumptions, operational data, calculations, and other pertinent information used in calculating the annual emissions.

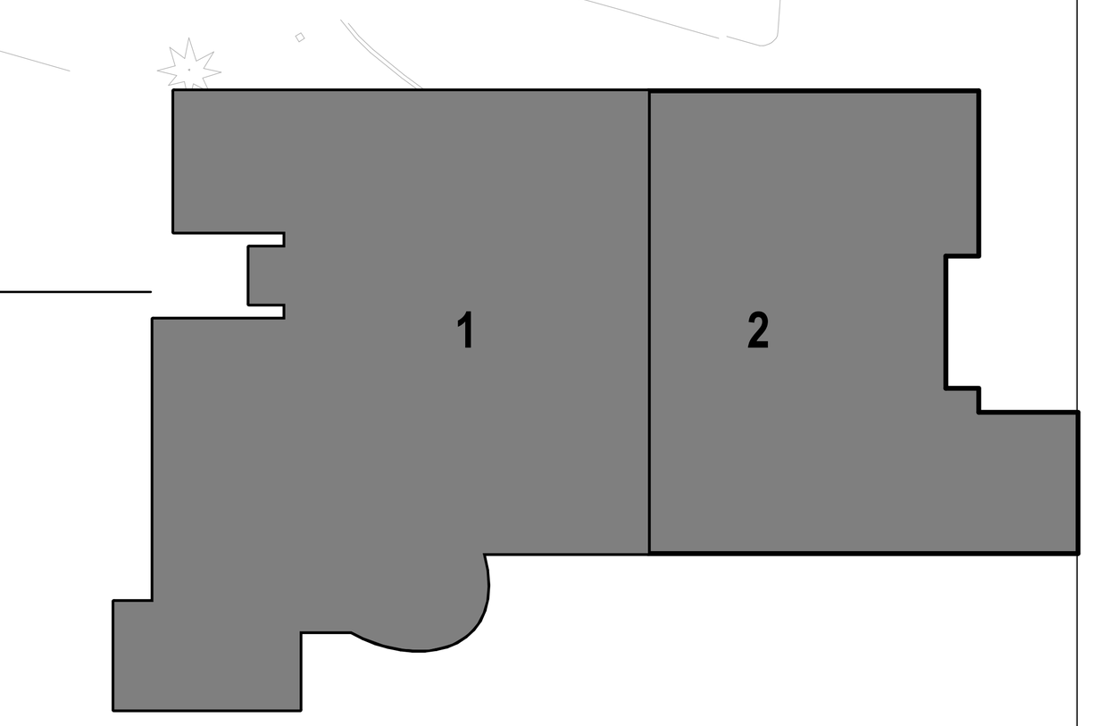
GENERAL NOTES:

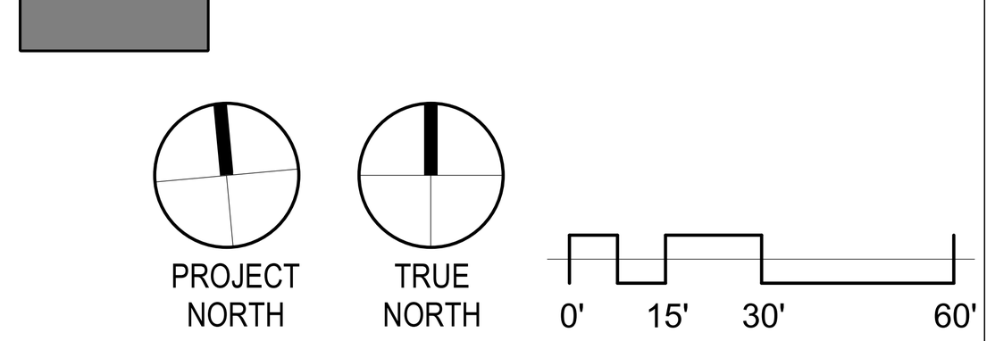
A. VERIFY AGAINST ARCHITECTURAL REFLECTED CEILING PLAN (RCP) AND ELEVATIONS FOR DEVICE PLACEMENT.

⟨#⟩ **KEYED NOTES:**

1. REFER TO ONE LINE DIAGRAM ON SHEET EP6.01 FOR FEEDER REQUIREMENTS.
2. REFER TO ONE LINE DIAGRAM FOR FEEDER FROM GENERATOR TO EMERGENCY SWITCHBOARD. (3)
3. COORDINATE, PROVIDE, AND INSTALL UTILITY VAULT PER PSE UTILITY REQUIREMENTS.
4. MAINTAIN TEN (10) FEET OF SEPARATION FROM UTILITY TRANSFORMER AND ALL OTHER STRUCTURES / FOLIAGE.
5. PROVIDE (2) 3" CONDUITS FROM ELECTRICAL ROOM TO EDGE OF PARKING LOT FOR PV SYSTEM. COORDINATE WITH PV DESIGNER FOR SIZE, EXACT LOCATION, AND ROUTING.
6. PROVIDE (2) DUAL-HEAD 32-AMP EVSE CHARGERS. CLIPPERCREEK HCS-40 OR APPROVED EQUAL. PROVIDE ALL MOUNTING BASES AND ACCESSORIES FOR A COMPLETE AND OPERABLE SYSTEM.

1 EP1.01 **ELECTRICAL PLAN, SITE**
1" = 30'-0"





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503-771-1986

CIVIL ENGINEER
SCJ Alliance
8730 Tallon Lane NE, Suite 200
Lacey, WA 98516
360-352-1465

LANDSCAPE ARCHITECT
Site Workshop
3800 Woodland Park Ave N
Seattle, WA 98103
206-285-3026

First Issue

	DOC REL 06	02/26/2021

Revisions

1	DOC REL 09	04/09/2021
2	DOC REL 18	08/09/2021
3	DOC REL 19	09/07/2021
4	DOC REL 20	10/11/2021

Washington State Department of Enterprise Services

L&I/WSDA Safety & Health Lab and Training Center

Drawing Title

ELECTRICAL PLAN, SITE

FLAVIANO V. REYES JR. STATE OF WASHINGTON 36059 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 09/03/22
FOR CONSTRUCTION

Date:	10/11/2021
Job No:	24968
Drawn By:	A.RITENOUR
Checked By:	F.REYES

Drawing No.

EP1.01

DOC REL 20

10/11/2021 5:08:17 PM

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background

1. Name of proposed project, if applicable:
   - Washington State Departments of Labor & Industries and Agriculture Safety & Health Labs and Training Center

2. Name of applicant:

- Department of Enterprise Services

3. Address and phone number of applicant and contact person:
   - Applicant: Department of Enterprise Services, PO Box 41476, Olympia, WA 98504; Oliver Wu - 360-407-8534
   - Contact: Tyrell Bradley, PE; 8730 Tallon Lane NE Suite 200 Lacey WA 98516; 360-352-1465

4. Date checklist prepared:
   - October 2020

5. Agency requesting checklist:
   - Department of Enterprise Services

6. Proposed timing or schedule (including phasing, if applicable):
   - Construction to begin Spring on 2021 with an early site work package; construction for building package to begin mid-Summer 2021.

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.
   - Groundwater monitoring and analysis, forester report, geotech report, SEPA Checklist

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.
   - None known.

10. List any government approvals or permits that will be needed for your proposal, if known.
   - Site Development Grading permit, Building Permit

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.)
   - Construction of a new +/- 53,574 square foot lab and training center for L&I and WSDA at 7345 Linderson Way SW. The parcel is approximately 20 acres, 7.34 acres of which is included in the project scope, The project includes site work/clearings, utility improvements, parking lot with landscaping, photovoltaics, a loading/unloading dock, and an outdoor training yard. The outdoor training yard will be graded and gravel covered and be used for Division of Occupational Safety and Health (DOSH) training which includes training with cranes, backhoes, trenching boxes, and safety procedures on heavy equipment.The site is going through a short plat process to create two separate parcels, one at 12.66 acres and this site at 7.34 acres.

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.

- The project is located at 7345 Linderson Way SW, Tumwater, WA (TPN 12710100600). Section 10 Township 17 Range 2W Quarter NW NW & NE NW Survey TR J, K & L Document 32/59 EXCEPT RW TO TUMWATER BLVD PER AFN 3744337
- Site plan, vicinity map, and topographic map are included in submittal.

B. Environmental Elements

1. *Earth*

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

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

- The steepest slope on the site is less than 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.

- Review of the USDA web soil survey (https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx) shows that the project site is predominately Nisqually loamy fine sand with areas of cagey loamy sand.

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

- None known

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.

- +/- 3,000 CY of Cut and +/-5,000 CY of Fill over a 3.5 acre area. Any fill materials will be sourced from a local approved source.

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

- It is possible that erosion could occur because of clearing, and construction. However, the project will comply with the City of Tumwater's engineering requirements and best management practices will be applied to prevent erosion from occurring

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

- Approximately 45% of the site will be covered by asphalt, rooftop, sidewalks, and patios.

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

- The project will meet or exceed the Engineering Design and Development Standards for erosion control and shall apply best management practices throughout the construction of the project such as silt fencing.

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.

- Construction work could produce emissions to the air from construction equipment and dust from construction. Quantities are unknown. Once completed there will be emissions from the laboratory operations as well as from the fossil fuel powered equipment in the outdoor training yard. Quantities are unknown.

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

- According to ORCAA (https://www.orcaa.org/public-records/registered-business-sources/), there are multiple class CR5 sources nearby including the existing L&I and Department of Corrections buildings. These are not expected to affect the proposed project.

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

- Unnecessary idling of equipment will be avoided, and machines will be turned off when not in use for long periods of time. Water trucks will be used to mitigate dust and will be used as necessary. The lab emission will be mitigated through the use of methods such as carbon absorbstion or condensation for recycling. The fossil fuel powered equipment will be used only as necessary and unnecessary idling will be avoided.

3. Water

a. Surface Water:

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.

- There are no waterbodies on or immediately adjacent to the project site per review of Thurston County Geodata TC geodata shows a wetland approximately .3 miles south that will not be impacted by the proposal.

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.

- Not applicable

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.

- There will be no fill and dredge material placed in or removed from surface water or wetlands as part of this project

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

- This proposal does not involve surface water withdrawals or diversions..

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

- No, per FEMA (https://msc.fema.gov/portal/search), the project lies in an area of minimal flood hazard

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.

- This proposal does not involve discharges of waste materials into surface waters

b. Ground Water:

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 general description, purpose, and approximate quantities if known.

- Groundwater will not be withdrawn from a well for drinking water or other purposes
- The project is within the Salmon Creek Drainage Basin that has been identified by Thurston County as a high groundwater hazard area.
- Stormwater will infiltrate to the ground after water quality treatment via bioretention. A groundwater mounding analysis has been completed on the proposed stormwater facilities, as required by the City of Tumwater, to protect adjacent properties and the groundwater system from stormwater mounding during large rain events.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: 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.

- Project will be served by existing City of Tumwater sewer service which will be extended through the project site to serve future development. There are no anticipated discharges into the ground from septic tanks or other sources

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.

- Stormwater runoff will be generated from the proposed parking lot, sidewalks, and the roof structure. Runoff will be collected via catch basins and roof drain lines, piped to bioretention factilies, and infiltrated on-site. The on-site storm system is sized to provide water quality for the 91st percentile storm event, or better, and infiltrate the 100 year storm event.

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

- None is anticipated.

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

- As discussed in previous sections, a groundwater mounding analysis was performed to verify mounding did not affect drainage patterns in the vicinity of the site. It is not anticipated that drainage patterns will be altered or otherwise affected by this project proposal.

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

- The project will use standard accepted methods of controlling surface storm water such as below surface drywells and bioretention ponds to control/reduce surface water runoff.
- Applicable City of Tumwater BMP's that will be deployed during construction:
    - BMP C101 Preserving Natural Vegetation
    - BMP C120 Temporary and Permanent Seeding
    - BMP C121 Mulching
    - BMP C122 Nets and Blankets
    - BMP C124 Sodding
    - BMP C130 Surface Roughening

4. Plants

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

____deciduous tree: alder, maple, aspen, other
__X_evergreen tree: fir, cedar, pine, other
__X_shrubs
__X_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?
- Trees, grasses and shrubs to accommodate grading for new construction

c. List threatened and endangered species known to be on or near the site.
- According to US Fish and Wildlife Service Environmental Conservation Online System (ECOS) (https://ecos.fws.gov/ipac/location/index) golden paintbrush is known to be in the area of the project site and is listed as threatened.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:
- Native trees, shrubs, and grasses will be used in landscape strips, open space, and tree tracts.

e. List all noxious weeds and invasive species known to be on or near the site.
- According to the Early Detection and Distribution Mapping System (EDDMaps) (https://www.eddmaps.org/tools/query/), there is a report of spotted knapweed near, but not on or directly adjacent, to the site.

5. Animals

a. List any birds and other animals which 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 _____

- hawk, eagle, songbirds, deer, squirrel

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

- According to ECOS pocket gophers, marbled murrelet, streaked horned lark, and yellow billed cuckoo are known to be in the area of the site.

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

- Migration routes exist near the site, Washington is within the Pacific Flyway route.

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

- Landscaping will use native plants as much as possible to provide coverage for wildlife
- Forest preservation will be included in this project to the extent feasible to provide habitat for animals on the site.

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

- Review of the EDDMaps system shows no invasive animal species near the site.

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.

- Energy will be electric for power and heat. This will be used for typical office purposes such as lighting and heating as well as energy for the labs.

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

- It is not anticipated that the project will affect any surrounding solar use.

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:

- The project will achieve LEED Gold status and be Net Zero Ready *(will be Net Zero with the addition of PVs)* The Mechanical system utilizes a field of geothermal wells, radiant floors, chilled beams, and zones with passive ventilation. The design has a target of 75 EUI *(This is considered very efficient for a laboratory building of this size)*. The Domestic Hot Water system includes a heat pump connected to the geothermal system.

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 as a result of this proposal? If so, describe.

- None known

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

- Review of Department of Ecology mapping (https://apps.ecology.wa.gov/neighborhood/) shows no contamination on site.

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 known

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.

- Chemicals may be stored and used at the two labs proposed as part of the project once completed. These chemicals include, but are not limited to, pesticides, fertilizers, and various chemicals used in the chemical analysis for food safety testing and food borne illnesses, and chemicals used in the diagnostic plant lab for analysis of agricultural crops and other nursery stock. Storage and disposal of these chemicals will follow the proper regulations described under WAC Chapter 173-303 Dangerous Waste Regulations.

4) Describe special emergency services that might be required.

- Fire and medical emergency services may be required during construction. Once completed services may be needed for emergencies such as fire.

5) Proposed measures to reduce or control environmental health hazards, if any:

- All potentially hazardous materials used during construction would be handled and stored in accordance with state and federal requirements as stated above.If contaminated soil or groundwater are encountered during construction, a formal plan would be developed consistent with state and federal regulations for their removal and treatment or disposal.

b. Noise

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

- Noise is currently generated from traffic from nearby I5, Tumwater Blvd, and adjacent office buildings. These sources are not expected to change as part of the proposed project and will not affect the proposal.

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.

- The project will create typical construction noise during City of Tumwater allowed work hours. Once construction is completed the project will create noises already typical to the area from employee vehicles and business operations.

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

- Construction will be limited to normal working hours as prescribed by the City of Tumwater Ordinance so nearby businesses should not experience long-lasting adverse noise impacts.

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 project site is currently undeveloped and uncleared. It is located on the same parcel as an existing Department of Corrections building. It is not expected that the proposal will affect current land use of nearby 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 as a result 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.

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 working farms or forest land would be affected or affect this project as no farm or forest lands are on or surrounding the site.

c. Describe any structures on the site.

- No structures exist on the proposed project site. The parcel has an existing Department of Corrections building which will not be altered during the proposed project.

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

- None

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

- Town Center

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

- Town Center Mixed Use

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

- Not applicable

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

- No

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

- 60 permanent residents with up to 80 guests daily

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

- None, no residences or structures exist on the site.

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

- No measures are proposed as no displacement will take place.

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

- The proposal is being designed in consideration of existing and adjacent uses.

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

- There will be no impacts to agricultural or forest lands, no measures are proposed at this time.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
   - None, the proposed project will be an office and labs

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
   - Not applicable

c. Proposed measures to reduce or control housing impacts, if any:
   - None proposed at this time.

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?
   - The highest structure is 31'-11"The principle building materials are dark brick, transparent glazing and spandrel glass.

b. What views in the immediate vicinity would be altered or obstructed?
   - Site tree removal will alter the territorial views of the surrounding office complexes.
   - Views driving on I-5 and Tumwater Blvd of the current forested space will be altered. Trees that are preserved on site will shield some of the proposed building from the freeway to the west. The building will be visible from Tumwater Blvd to the south.

c. Proposed measures to reduce or control aesthetic impacts, if any:
   - The proposal will be designed to compliment surrounding buildings and will be designed to meet city standards.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
   - Light and glare would mainly occur at night from the project lighting (lamps in parking, interior and exterior lighting of building). Measures will be taken to ensure light spill over beyond property lines is minimized.

b. Could light or glare from the finished project be a safety hazard or interfere with views?
   - Light or glare is not expected to be a safety hazard or interfere with views.

c. What existing off-site sources of light or glare may affect your proposal?
   - Light from nearby I5 and street lights may be present but are not expected to affect the project.

d. Proposed measures to reduce or control light and glare impacts, if any:
   - Cutoff fixtures and lighting design to avoid spill over beyond the property will be completed.

12. Recreation

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

- There are walking trails from the L&I building near the site; no other recreational opportunities directly near the site. The site is located close to I5 which allows access to many recreational opportunities such as lakes, state and national parks.

b. Would the proposed project displace any existing recreational uses? If so, describe.
- The project will not displace any existing recreational uses, and no impact is expected to the existing walking trails at the L&I building nearby. A walking trail is proposed on the south side of the building along with providing green space.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
- A walking trail on the south side of the building is proposed.
- No other measures are proposed at this time.

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.
- Review of the WISAARD (https://wisaard.dahp.wa.gov/Map) database shows none on or near the site.

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 visible features of occupation. According to the WISAARD predictive model the project site is in an area of moderate risk.

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.
- Washington Information System for Architectural and Archaeological Records Data (WISAARD) was reviewed as well as the Thurston County Geodata 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.
- During construction all work will comply with the City of Tumwater code regarding inadvertent discoveries of cultural resources. In the event that cultural resources are unearthed, construction will stop until an assessment and determination can be made.

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 project will be accessed from 73rd Ave SW as shown on the site plan.

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?
- Yes, there are two bus stops located about 1000 feet from the project site on Linderson Way.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

- 143 are proposed, none would be eliminated.

d. 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).

- This project will include a small amount of frontage improvements to the private street (73rd Ave). Improvements will include sidewalks with curbing. All improvements will be private.

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

- The project is located near the Olympia Airport. There is not expected to be any impact to the airport as part of this project.

f. 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?

- Vehicle trip generation was estimated using the trip generation rates contained in the 10th edition of the Trip Generation Manual by the Institute of Transportation Engineers (ITE). The Government Office Building land-use-code (LUC) 730 with the variable per 1,000 square feet was determined to be the most applicable to this project. At full occupancy and operation, the project is estimated to generate approximately 172 trip ends during the AM peak hour and 88 trip ends during the PM peak hour.

g. 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.

- Not applicable

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

- A traffic impact analysis has been completed as part of the proposed project. The analysis did not identify any required off-site improvements as part of this project. The City of Tumwater Transportation Master Plan and the 2020-2025 Transportation improvement Program identifies the following roadway improvements within the vicinity of the Project:
    - Transportation Plan Project #8 – Tumwater Boulevard – I-5 Interchange, roundabout intersection control and wider bridge. This is a WSDOT Project and is not currently funded.
    - 2020-2025 TIP # 27 Israel Road and Linderson Way Pedestrian and Bicycle Improvements – Roadway and multi-modal improvements at the intersection of Israel Road and Linderson Way including construction of refuge island(s), reconstruction of select sidewalk segments and curb ramps, add bike lanes, signal improvements, roadway and other improvements.

- Neither of these projects are expected to be complete before the proposed Project and were not accounted for in the intersection analysis.

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.
   - It is not expected that there will be a significant increase to public services as part of this project. There may be a small increase to public transportation with the additional employees working at the site. There may also be a small increase to police and fire departments if there is need to respond to any emergencies that occur at the site.

b. Proposed measures to reduce or control direct impacts on public services, if any.
   - It is anticipated that the increase to public services will be minimal will not require significant changes to currently provided public service levels.

16. Utilities

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.
   - Sewer, water, storm, electrical, communications and refuse are proposed for this project. Sewer, water and refuse is provided by the city. Electric is provided by PSE. Telephone/communications is provided by Century Link.

C. 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.

Signature: Tyrell E. Bradley

Name of signee Tyrell Bradley

Position and Agency/Organization Project Manager/SCJ Alliance

Date Submitted: 02/08/2021

D. Supplemental sheet for nonproject actions

(**IT IS NOT NECESSARY** to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.