CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT SECTION 7(2) AND 7(3) ANALYSIS

UMR BOARDS PRODUCTION LLC
TITLE V AIR PERMIT APPLICATION

PLEASANT RIDGE ROAD
PLATTSBURGH, NEW YORK

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Project No. 17-S0125N-002

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UMR Boards Production LLC Title V Application
Project Specific Climate Leadership and Community Protection Act Section 7(2) and 7(3) Evaluation

The Climate Leadership and Community Protection Act (CLCPA) includes a requirement in Section 7(2) that state agencies consider whether applications for permits and other approvals are consistent with, or will interfere, with attainment of the CLCPA's greenhouse gas (GHG) emission reduction requirements, and if so, whether sufficient justification, including consideration of alternatives and mitigation, has been provided to support approval of the permit. Additionally, for any action located in a designated disadvantaged community, CLCPA Section 7(3) requires state agencies to consider whether applications for permits and other approvals will disproportionately burden disadvantaged communities, and to prioritize reductions of GHGs and "co-pollutants" impacting those communities. The New York State Department of Environmental Conservation (DEC) has provided formal guidance policy on the preparation of the GHG analysis component in DAR-21. On May 8, 2024, during the pending review process of the subject Title V Air Permit Application, DEC issued DEP-24-1, which is a guidance policy on the disadvantaged community component.

This Title V Air Permit Application will involve the emission of greenhouse gases, and is located in one of the currently identified disadvantaged communities, Census Block 360191021002. As such, JMT of New York Inc. is submitting the following CLCPA Section 7(2) GHG and 7(3) disadvantaged community analysis on behalf of UMR Boards Production LLC (UMR). This analysis has been prepared consistent with CLCPA Section 7(2) and 7(3), as well as DEC's program policies DAR-21 and DEP 24-1.

As described below, this application includes two existing manufacturing areas located in a common building, UMR and Schluter Systems LP (SSLP), and a newly proposed facility, Kerdi-Board Line 4 (KB4), to be combined under a single Title V Air Permit. For the purposes of clarity, the existing UMR and SSLP operations will be referred to as the "Schluter Facility," the proposed KB4 operation as the "KB4 Facility," and when referring to the collective facility inclusive of both the Schluter Facility and proposed KB4 Facility, the term "Facilities" will be used.

The Schluter Facility consists of the UMR and SSLP manufacturing areas. The new emission sources being proposed in the Schluter Facility as part of the Title V Air Permit Application are an emission reduction source (regenerative thermal oxidizer, or RTO), and an additional molding press (MPRS8) to accommodate an anticipated market-based increase in production. MPRS8 is associated with an existing emission unit (100UMR) and thus will not increase the Schluter Facility's potential to emit GHG emissions associated with combustion. The operation of MPRS8 in accordance with anticipated increases in production will place additional demand on an existing burner used to generate steam and the RTO to control associated volatile organic compound (VOC) emissions. This will correlate to an increase in natural gas consumption and combustion-related GHG emissions, as well as GHG emissions from the RTO, on an actual basis. Actual GHG emissions increases will be minimal when compared to facility-wide operations and are accounted for in the projected future emissions described in *Section A.e.*, below. In general, the emissions profile of MPRS8 is identical to each of the other seven (7) presses, and accounts for 1/8th of the emissions associated with the press operation calculated for future emissions scenarios.

The proposed KB4 Facility is anticipated to see the complete transfer of SSLP's Kerdi-Board production line, including laminated extruded polystyrene (XPS), and will utilize similar production and processing methods as SSLP's current operations. SSLP's updated production process within the KB4 Facility will use a new blowing agent and does not require combustion for process operations, resulting in lower process VOC and combustion emissions than the current SSLP operations in the Schluter Facility. Actual VOC emissions for the combined Schluter and KB4 facilities will be below UMR's existing Air State Facility (ASF) Permit limit and proposed Title V Air Permit thresholds. No combustion sources are associated with the board manufacturing processes at the proposed KB4 Facility. Comfort heat will be principally sourced by electric heat pumps, with natural gas boilers serving to provide supplemental heat during extreme cold weather. Five (5) diesel-fueled emergency generators will be installed to provide emergency backup power.

The Title V Air Permit process is being completed to capture all of the existing emissions at the Schluter Facility under common control and those emissions sources that do not currently exist (the RTO emissions reduction source, the addition of MPRS8), as well as the proposed KB4 Facility and its associated emission sources. DEC's program guidance policy, DAR-21, states that, for purposes of evaluating GHG emissions, "the applicable portions of the project include any new or modified emission sources that have the potential to emit GHGs, including increases and decreases in emissions of GHGs from existing equipment." In this case, the RTO emissions control device and MPRS8 at the Schluter Facility, and all KB4 process and combustion emissions at the KB4 Facility constitute a new or modified emissions source with the potential to impact GHG emissions levels. A complete inventory of GHG emissions from both the existing and proposed equipment is provided in this assessment for DEC's review. Furthermore, the requested emissions inventory with respect to co-pollutants is also provided in this assessment along with the components of DAR-21 and DEP-24-1.

A. PROJECT DESCRIPTION

UMR is seeking a Title V Air Permit for the combined manufacturing areas operated by UMR and SSLP at the Schluter Facility located on tax parcels 232.-3-10.1 and 232.-3-10.2. This Title V Air Permit Application also includes emissions from a new production facility (KB4), which is anticipated to see the transfer of SSLP's operations from the Schluter Facility to the proposed KB4 Facility, located on tax parcel 232.3-18. All of these properties are located in the Town of Plattsburgh, Clinton County, New York.

The Schluter Facility operated by UMR and SSLP manufactures materials used for building and waterproofing tiled shower and tub installations. The principal products include molded expanded polystyrene (EPS) shower floors (shower trays), and extruded polystyrene (XPS) foam core material (Kerdi-Board) for shower and tub surrounding walls and shaped parts such as benches, niches and curbs. The Kerdi-Board laminating line includes a flexographic printing unit to print product information on the board stock. The molding operation is operated by UMR, and the Kerdi-Board operation is operated by SSLP. UMR's capital improvement plan for the Schluter Facility includes installing an RTO to reduce VOC emissions associated with the EPS and XPS forming processes. (This report includes greenhouse gas (GHG) emissions from the RTO.)

SSLP also operates an exempt Thinset mortar packaging operation at the Schluter Facility. Cement delivered to SSLP in bulk is bagged for wholesale/retail sales. In addition, SSLP manufactures various metal trim parts to support shower and bathroom construction projects and conducts research and development (R&D) for new and improved products and manufacturing processes.

The existing Schluter Facility's GHG emission sources include: seven (7) natural gas fired boilers for heat and steam generation, two (2) diesel fuel fire pumps, and six (6) emergency generators (natural gas and diesel). UMR operates a boiler to generate steam for the molding process. SSLP operates the remaining six (6) boilers for heating snow and ice melt tubes in the facility parking lot, in-floor heaters in select office and warehouse areas, and to provide domestic hot water. SSLP also operates a gas-fired oil heater for forming the XPS foam core of the Kerdi-Board product. SSLP and UMR share the two (2) fire pumps and an emergency generator. SSLP maintains the remaining generators for emergency/stand-by operations. Across the facility, a total of 54 natural gas fired space heaters are maintained for comfort heat. Propane is also used to power fork-lifts in production areas and the warehouse, which is discussed further in the Mobile Emissions Addendum (Appendix A).

The new KB4 Facility will phase out the SSLP's Kerdi-Board production operations within the Schluter Facility by 2027. The proposed KB4 Facility will utilize SSLP's similar XPS production and processing methods and alternate technologies that use low-VOC or no VOC-process gases. The associated VOC emissions from this facility will be significantly lower than SSLP's current operations, and the combined facilities will have VOC emissions below UMR's ASF Permit limits and under Title V Air Permit thresholds. There are no combustion sources associated with the board manufacturing processes at the KB4 Facility. GHGs emitted from the board manufacturing process are associated with a blowing agent used for board production. The facility is making significant efforts through the investment of millions of dollars to utilize electric power (line electric power and on-site geothermal) for production and facility heat sources. The facility will also have eight natural gas boilers for supplemental heat during extreme cold weather, and five backup generators for emergency backup power.

In a Notice of Incomplete Application (NOIA) dated November 7, 2023, DEC requested that mobile emissions from on- and off-road emission sources associated with the project be included in the CLCPA analysis. An updated CLCPA with a mobile emissions addendum was submitted on December 7, 2023.

Subsequently, an Air Facility Registration Application was submitted to the DEC for the proposed KB4 Facility. DEC ultimately issued a NOIA on May 23, 2024, with comments reflective of a determination that the existing Schluter Facility and the proposed KB4 Facility are proximal and under common control. Accordingly, this CLCPA Section 7(2) and 7(3) analysis includes the combined emissions of the Schluter (UMR and SSLP) and KB4 facilities. It also includes updates based on the other CLCPA comments contained in the May 23, 2024 and September 27, 2024 NOIAs.

SSLP is aware of UMR's application and agrees to be bound by the terms of the single source Title V Air Permit for the Schluter Systems & UMR Boards Production facilities.

B. PERMIT REQUIREMENTS

UMR currently holds a New York ASF Permit for the EPS molding operation and associated processes. SSLP submitted an Air Facility Registration Application on April 10, 2020. This application was not issued by the DEC. Subsequently and as described in *Section A. Project Description* of this report, an Air Facility Registration for the proposed KB4 Facility was applied for on April 26, 2024. A Title V Air Permit is required to allow combined emissions of the manufacturing areas as a single facility under common control for the VOCs generated from UMR and SSLP's existing and proposed operations, which together (existing Schluter Facility and proposed KB4 Facility), are above the major source threshold. The Title V Air Permit will incorporate all the emission units, processes, and emissions at the combined Facilities as a single source under one air permit.

The application process is subject to the New York State Environmental Quality Review Act (SEQRA) and Uniform Procedures Act. This action will undergo a coordinated review with enhanced public participation under the New York State Environmental Justice Program. The UMR ASF Permit, the existing structures and facilities, and the construction of KB4 have been previously reviewed under SEQRA.

C. CLCPA GHG EMISSIONS ANALYSIS REQUIREMENTS

The following sections address the specific steps in the CLCPA GHG emissions (Section 7(2)) evaluation process.

a. Project Direct GHG Emissions Calculations on PTE and actual emissions bases

The existing Schluter Facility's (UMR and SSLP) inventory of combustion sources includes boiler operations, fire pumps and emergency generators using fossil fuels. The combustion emissions include compounds that are considered GHG. Specifically, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) generated from the use of fossil fuels. The facility office building utilizes a geothermal heating system that does not generate greenhouse gas emissions.

UMR and SSLP operate the following combustion units:

Boilers	Name Plate Heat Input Rating (MMBtu)	
UMR Package Plant	10.04	Cleaver Brooks
SSLP Hot Oil Heater	0.8	Gesab 232 kW
Warehouse Parking Lot Heat	2.5	Laars Magnatherm
R&D Primary	0.264	Laars NeoTherm
R&D Backup	0.264	Laars NeoTherm
Space Heaters*	18.3535	N/A
Hot Water Heater	0.18	Rinnal
Training Floor Heater	0.096	Burnham

*Cumulative, see Attachment I for detailed list

Fire Pumps and Emergency Generators:

Building	Equipment Type	Rating (HP)	Fuel Type
Pump Room	Fire Pump	575	Diesel
Pump Room	Fire Pump	575	Diesel
Pump Room	Emergency Generator*	76	Nat Gas
Thinset	Emergency Generator*	128	Nat Gas
Office	Emergency Generator*	454	Nat Gas
UMR/SSLP[1]	Emergency Generator*	400	Diesel
R&D	Emergency Generator*	389	Diesel
Main Warehouse (old)	Emergency Generator*	874	Diesel

[1]UMR and Schluter share the 400 hp Diesel Generator noted above

*All emergency generators are located outside the noted building

Natural gas-fired space heaters are utilized throughout the Schluter Facility (except in the corporate office building, which is heated with geothermal power) to provide comfort heat in the open bay processing areas and warehouse. The fuel use inventory includes natural gas consumed by the Modine heaters. The proposed KB4 Facility combustion sources include boiler operations using fossil fuels for supplemental heat during extreme cold weather, and five (5) generators to provide emergency backup power. Eight (8) supplementary boilers with a cumulative heat rating of 64 MMBtu/hr are anticipated to be installed at the KB4 Facility. There are no proposed combustion sources associated with KB4 process operations. As with UMR and SSLP, KB4 combustion emissions include compounds that are considered GHGs.

To calculate the combined Schluter and KB4 facilities' direct GHG emissions under "potential-to-emit" (PTE, defined as the maximum capacity of an air contamination source to emit any regulated air pollutant under its physical or operational design per section 200.1[bl] of title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR)) and "actual" scenarios, the year 2027 was selected, as it is by this year that SSLP projects its Kerdi-Board operations to be entirely transferred to the KB4 Facility, and the SSLP emission unit will cease operating within the Schluter Facility. However, for the purpose of the CLCPA analysis, 2027 PTE calculations are conservative in that they assume full SSLP operations to take place at 100% capacity for both facilities. In reality, Schluter Facility emissions will be significantly reduced as SSLP production is transferred to the KB4 facility.

Cumulative Schluter Facility (aside from the RTO) and KB4 Facility PTE fuel consumption for all non-emergency combustion sources was determined under a continuous (8,760 hours of duty, annually) operation at maximum design capacity, which is infeasible as an operational matter due to operating schedule and staffing, downtime for equipment maintenance, etc. This also would not occur in practice under any circumstances since comfort heat and snow/ice control are not required for significant portions of the year. The addition of a new molding press (MPRS8) is not associated with a new combustion source and thus will not increase PTE fuel consumption. As stated above, the PTE calculation for fuel consumption already assumes maximum operation of the boiler to provide process heat for the other seven (7) presses at the UMR Facility and will remain identical with the addition of MPRS8.

Consistent with the definition of PTE in 6 NYCRR § 200.1(bl), PTE fuel consumption for emergency power-generating stationary internal combustion engines (i.e., fire pumps and emergency generators) has been calculated under a proposed permit condition of 100 annual operating hours. This permit limit is being put in place to reduce PTE NOx emissions from diesel combustion equipment.

At the Schluter Facility, the primary contributor to CO_2 emissions from the RTO is due to the stoichiometric byproducts of the destruction of VOCs. PTE for the RTO is calculated under the assumption that "normal" operating mode is occurring 8,760 hours per year (i.e., continuously). The normal operating mode describes RTO operation during active VOC destruction, while idle mode considers natural gas combustion only at a fuel consumption rate that is less than the maximum design capacity. The actual operating scenario for the RTO is based on manufacturer projections and includes 6,257 annual hours of normal operation and 2,503 annual hours of idle operation. During idle operation, the demand for natural gas is much greater because the VOCs (which act as a "fuel source") are not present. Consequently, the natural gas consumption during the actual operating scenario is greater than during the PTE scenario, but net CO_2 emissions during the PTE operating condition are greater due to the CO_2 contribution from the destruction of VOCs. NO_2 and CH_4 have not been identified by the RTO manufacture as byproducts of the destruction of VOCs, and thus emissions of these pollutants from the RTO are only attributed to the combustion of natural gas.

For all the Schluter Facility combustion sources, with the exception of the RTO, fuel tracking records and vendor invoicing were reviewed for fuel consumption under the "actual" operating scenario. To accommodate projected business growth, natural gas consumption was annualized to be 15% from 2023 to 2027. While SSLP's hot oil heater is anticipated to be decommissioned from operation by or during 2027, UMR's fuel records do not distinguish natural gas consumption for the unit. As such, the 2027 natural gas fuel use presented in this report does not subtract contributions from the hot oil heater after decommissioning, and thus are biased high, and provide a conservative assessment.

As it is utilized for backup/emergency purposes, No. 2 fuel oil consumption was kept consistent with historic levels. To determine anticipated actual fuel consumption of the KB4 comfort heat boilers, UMR's mechanical consultants provided the anticipated annual duty, based on historic climate records and annual hours below 10°F (the temperature at which the electric heat pumps drastically lose efficiency and require supplemental heat from the natural gas boilers). The actual operating scenario for the boilers was estimated to be 480 hours of operations annually.

The following tables present fuel consumption under PTE and actual conditions.

PTE Fuel Consumption:

Schluter Facility No.2 Fuel Oil PTE Fuel Consumption			
No. 2 Fuel Oil Engine Description:	Total HP for Fuel Consumption @ 100 hrs per 6 NYCRR 200.1[bl]		
Engine Power Rating, hp	2,813	Diesel Fuel, BTU/gal.	137,200
No.2 Fuel Oil, gallons/hr	143.5		
MMBTU/hr	19.6910		
Operating Hrs/yr	100		
Fuel Consumption, gal/yr	**14,352**		
KB4 No.2 Fuel Oil PTE Fuel Consumption			
No. 2 Fuel Oil Engine Description:	Total HP for Fuel Consumption @ 100 hrs per 6 NYCRR 200.1[bl]		
Engine Power Rating, hp	11,020	Diesel Fuel, BTU/gal.	137,200
No.2 Fuel Oil, gallons/hr	562.2		
MMBTU/hr	77.1400		
Operating Hrs/yr	100		
Fuel Consumption, gal/yr	**56,224**		
Natural Gas PTE Fuel Consumption			
Schluter Facility Natural Gas Engine Description:	Total HP for Fuel Consumption @ 100 hrs per 6 NYCRR 200.1[bl]		
Engine Power Rating, hp	658	Natural Gas, BTU/scf	1,032
Natural Gas, scf/hr	4463.2		
MMBTU/hr	4.6060		
Operating Hrs/yr	100		
Fuel Consumption, mmscf/yr	**0.446**		
Schluter Facility Burner Description:	Cumulative Boiler BTU/hr Rating		
Heat Rating, BTU/hr	32,497,500	Nat. Gas, BTU/scf	1,032
Nat. Gas, scf/hr	31,490		
Operating (Heating) Hrs/yr	8,760		
Nat. Gas, mmscf/yr	**275.85**		
KB4 Burner Description:	Cumulative Boiler BTU/hr Rating		
Heat Rating, BTU/hr	64,000,000	Nat. Gas, BTU/scf	1,032
Nat. Gas, scf/hr	62,016		
Operating (Heating) Hrs/yr	8,760		
Nat. Gas, mmscf/yr	**543.26**		
Burner Description:	RTO		
Maximum Design, BTU/hr	1,672,000	Nat. Gas, BTU/scf	1,032
Normal Operation, BTU/hr	40,266		
Idle Mode, BTU/hr	1,257,594		
Normal Operating Hrs/yr	8,760		
Idle Operating, Hrs/yr	0		
Normal Operating MMbtu/yr	353		
Idle Operating MMbtu/yr	0		
Normal Mode Nat. Gas, mmscf/yr	0.34		
Idle Mode Nat. Gas, mmscf/yr	0.00		
Nat. Gas, mmscf/yr	**0.34**		
Total mmscf/yr	**819.89**		

Actual Fuel Consumption:

Actual Natural Gas Consumption[1]	
Building/Operation	Max 12-Mo Rolling Total
Warehouse	191,994
Thinset	34,908
R&D[2]	27,151
SSLP	44,605
UMR	459,622
RTO[3]	33,993.00
KB4 Boiler	230,445.60
Total (Therms)	1,022,719
Conversion, mmBTU/Therm	0.10
Annual mmBTU	102,271.85
Conversion, mmbtu/mmscf	1,032
Total (mmscf)	**99.10**

[1]NYSEG invoicing April 2020 to February 2022, factored up 15% each year to 2027

[2]annual average based on 3 months data, factored up 15% each year to 2027

[3]Per manufacturer projection

Actual No. 2 Fuel Oil Consumption[1]	
Building/Operation	Gallons
UMR/SSLP[2]	552
Thinset	23
R&D	543
Warehouse	31
KB4	28112
Total	**29,261**

[1]Based on purchases from March 2021 to March 2022

[2] Shared Fire Pump and Emergency Generator

Direct GHG Emissions

The direct GHG emissions from the Schluter Facility and the KB4 Facility are associated with carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) emissions from combustion of the fuels summarized above, as well as CO_2, and hydrofluoroolefin (HFO) emissions from process emission sources.

For the Schluter Facility, process CO_2 emissions result from the destruction of VOCs by the RTO. The conversion rates have been provided by the manufacturer. Calculated emissions are based on the stoichiometric conversation of 313,483 pounds of pentane (C_5H_{12}) per year, which results in an emission factor of 3.05 lb. CO_2 / lb. VOC destructed. Pentane is a blowing agent utilized during the Schluter Facility's manufacturing process.

For the KB4 Facility, process CO_2 and HFO emissions will result directly from the blowing agent. As described in *Section A. Project Description* of this report, SSLP has elected to use a new blowing agent to reduce Facility VOC process emissions. Specifically, the blowing agent for the foam board process consists of a combination of CO_2, HFO, and/or dimethyl ether (DME). At startup of the KB4 Facility, the CO_2 and HFO components of the blowing agent are each anticipated to comprise up to 3% of the feedstock. For

example, 100 kg of resin/gas mixture will contain up to 3 kg of CO_2 and 3 kg of HFO. PTE for KB4 Facility production-related GHG emissions assumes 8,760 running hours (24 hours/day at 365 days per year) at maximum design capacity, which results in a foam consumption of 8,760,000 kg/yr. This foam use would be operationally infeasible for the new KB4 Kerdi-Board line due to operational realities within the Facility, including normal equipment downtime for maintenance, normal operational slowdowns, and variations in production due to variations in staffing from shift to shift. The actual GHG emissions for KB4 in 2027 have been determined by SSLP's projected foam consumption of 3,446,326 kg and reflect a scenario when SSLP operations are anticipated to be transferred entirely to the KB4 Facility.

The following emission factors have been used to calculate CO_2, CH_4, and N_2O emissions from fossil fuel combustion:

Natural Gas

Pollutant	Source	Emission Factor	Units
CO2	AP-42	120,000	lb/mmscf
CH4	AP-42	2.3	lb/mmscf
N2O	AP-42	0.64	lb/mmscf

Propane

Pollutant	Source	Emission Factor	Units
CO2	EPA*	12,610	lb/10^3 gallon
CH4	EPA*	0.595	lb/10^3 gallon
N2O	EPA*	0.11	lb/10^3 gallon

*EPA Center for Corporate Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 1 April 2022

No. 2 Fuel Oil (Diesel)

Pollutant	Source	Emission Factor	Units
CO2	AP-42	22,300	lb/10^3 gallon
CH4	AP-42	0.216	lb/10^3 gallon
N2O	AP-42	0.26	lb/10^3 gallon

The estimated Schluter and KB4 facility-wide (the Facility) annual GHG emissions under PTE and actual conditions and emission factors noted above are as follows:

PTE GHG Emissions:

Natural Gas -Boilers, Space Heaters, and Gensets - PTE Direct Greenhouse Gas Emissions						
Pollutant	Source	Emission Factor	Units	Fuel Consumption (mmscf)	Emissions (lb)	Emissions (ton)
CO2	AP-42	120,000	lb/mmscf	819.55	98,346,360	49,173
CH4	AP-42	2.3	lb/mmscf	819.89	1,886	0.943
N2O	AP-42	0.64	lb/mmscf	819.89	525	0.262

Schluter Facility -Natural Gas -RTO- PTE Direct Greenhouse Gas Emissions						
Pollutant	Source	Emission Factor	Units	Fuel Consumption (mmscf)	Emissions (lb)	Emissions (ton)
CO2	Manufacturer	-*	-*	-*	1,552,000	776
CH4	AP-42	2.3	lb/mmscf	0.34	1	0.000
N2O	AP-42	0.64	lb/mmscf	0.34	0	0.000

*776 tons of CO2= 20 ton from nat. gas combustion + 669 ton from VOC destruction + 87 ton from process exhaust

KB4- Blowing Agents - PTE Extrusion Process						
Pollutant	Source	XPS Fraction	XPS Resin Use (kg/hr)	PTE Utilization (hrs)	PTE Emissions (kg)	PTE Emissions (tons)
CO2	-	3.00%	1,000	8,760	262,800	289.68
HFO	-	3.00%	1,000	8,760	262,800	289.68

No. 2 Fuel Oil -PTE Direct Greenhouse Gas Emissions						
Pollutant	Source	Emission Factor	Units	Fuel Consumption (g)	Emissions (lb)	Emissions (ton)
CO2	AP-42	22,300	lb/10^3 gallon	70,577	1,573,856.63	786.9283
CH4	AP-42	0.052	lb/10^3 gallon	70,577	3.67	0.0018
N2O	AP-42	0.26	lb/10^3 gallon	70,577	18.35	0.0092

Facilty Summary	
Pollutant	Emissions (ton)
CO2	51,026
CH4	0.95
N2O	0.27
HFO	289.68

Actual GHG Emissions:

Natural Gas -Boilers, Space Heaters, and Gensets - Actual Direct Greenhouse Gas Emissions						
Pollutant	Source	Emission Factor	Units	Fuel Consumption (mmscf)	Emissions (lb)	Emissions (ton)
CO2	AP-42	120,000	lb/mmscf	95.81	11,496,808	5,748
CH4	AP-42	2.3	lb/mmscf	95.81	220	0.110
N2O	AP-42	0.64	lb/mmscf	95.81	61	0.031

Schluter Facility Natural Gas -RTO- Actual Direct Greenhouse Gas Emissions						
Pollutant	Source	Emission Factor	Units	Fuel Consumption (mmscf)	Emissions (lb)	Emissions (ton)
CO2	Manufacturer	-*	-*	-*	1,516,000	758
CH4	AP-42	2.3	lb/mmscf	3.29	8	0.004
N2O	AP-42	0.64	lb/mmscf	3.29	2	0.001

*758 tons of CO2= 197 ton from nat. gas combustion + 478 ton from VOC destruction + 83 ton from process exhaust

KB4 Blowing Agents - Actual Direct Greenhouse Gas Emissions						
Pollutant	Source	XPS Fraction	Foam Demand (kg)	Actual Utilization (hrs)	Actual Emissions (kg)	Actual Emissions (tons)
CO2	-	3.00%	3,446,326	--	103,390	113.97
HFO	-	3.00%	3,446,326	--	103,390	113.97

No. 2 Fuel Oil - Actual Direct Greenhouse Gas Emissions						
Pollutant	Source	Emission Factor	Units	Fuel Consumption (g)	Emissions (lb)	Emissions (ton)
CO2	AP-42	22,300	lb/10^3 gallon	29,261	652,526	326
CH4	AP-42	0.052	lb/10^3 gallon	29,261	1.52	0.0008
N2O	AP-42	0.26	lb/10^3 gallon	29,261	7.61	0.0038

2027 Actual GHG Emissions Summary	
Pollutant	Emissions (ton)
CO2	6,947
CH4	0.11
N2O	0.04
HFO	113.97

Aside from the RTO (a VOC emission reduction source), and MPRS8, UMR-associated processes are already permitted under the existing ASF Permit, and therefore are considered existing emissions. This application incorporates additional existing emissions from other buildings and operations (SSLP), and the proposed KB4 Facility, with the currently permitted UMR-associated emissions under a new comprehensive Title V Air Permit.

In response to a request by DEC, and to allow for the comparison of "permitted" and proposed emissions, the following table summarizes the GHG emissions under a PTE scenario for sources permitted under the existing UMR ASF Permit, as well as combined proposed emissions for the Title V Air Permit Application. UMR's ASF Permit capped VOC at 49 tons per year but did not set a cap for other combustion emission pollutants, including CO_2. To establish the impact of the project emissions, UMR calculated CO_2 emissions on a PTE basis for combustion equipment associated with UMR operations permitted by the existing ASF Permit. This table quantifies the proposed new and unpermitted existing GHG emissions for the project.

Project Emissions Covered by Title V - PTE Direct Greenhouse Gas Emissions					
Pollutant	2027 Schluter Facility + KB4 Facilty (tons)	2023 Schluter Facility (tons)	2019 UMR ASF Permit (tons)	**2027 Project Emissions (Above 2023)**	**2027 Project Emissions above UMR ASF Permit**
CO2	51,026	16,920	16,330	**34,106**	34,695
CH4	0.95	0.3	0.3	**0.62**	0.62
N2O	0.27	0.10	0.10	**0.17**	0.17
HFO	289.68	0.00	0.00	**289.68**	289.68

Project Emissions Covered by Title V - Actual Direct Greenhouse Gas Emissions					
Pollutant	2027 Schluter Facility + KB4 Facilty (tons)	2023 UMR+SSLP (tons)	2019 UMR ASF Permit (tons)[1]	**2027 Project Emissions**	**2027 Project Emissions above UMR ASF Permit**
CO2	6,947	2,534	1,221	**4,413**	5,726
CH4	0.11	0.05	0.02	**0.07**	0.09
N2O	0.04	0.01	0.01	**0.03**	0.03
HFO	113.97	0.00	0.00	**113.97**	113.97

[1]UMR ASF GHG emissions calculations based on NYSEG invoicing of facility natural gas usage from April 2020 to March 2021

As demonstrated in the above table, estimated actual emissions for the combined Schluter and KB4 Facility will be 6,947, 0.11, 0.03, and 113.97 tons of CO_2, CH_4, N_2O, and HFO, respectively. A full discussion of project-related global warming potential is provided in the next section.

It should be noted that the Schluter Facility CO_2 emissions contribution from the RTO will coincide with a decrease in VOC emissions. Furthermore, the CO_2 process emissions from the KB4 Facility will result from the use of an alternative blowing agent, which will significantly reduce VOC emissions. The remainder of project CO_2 emissions are related to existing comfort heat sources and proposed backup boilers and emergency generators.

b. Project GHG PTE and projected actual emissions in units of CO_2e using 20-yr Global Warming Potentials

The global warming potentials (GWP) of CO_2, CH_4, and N_2O are tabulated in 6 NYCRR 496.5. This regulation does not provide a GWP for HFO and EPA's "Technology Transitions GWP Reference Table" was used as an alternative source. The following tables summarize carbon dioxide equivalent (CO_2e) emissions under PTE and actual conditions for the proposed combined Schluter and KB4 Facilities.

Potential to Emit CO2e 20 yr Global Warming Potential (tons/yr)					
Pollutant	2027 Emission	Global Warming Potential Factor	2027 CO2e	Project CO_2e vs 2019 UMR ASF Permit CO_2e	Project CO_2e vs 2023 Schluter Facility 2023 CO_2e
CO2	51,026	1	51,026	34,696	34,106
CH4	1	84	79	54	54
N20	0	264	72	45	45
HFO	290	1	290	290	290
		Total	**51,467**	**35,086**	**34,496**

Actual CO2e 20 yr Global Warming Potential (tons/yr)					
Pollutant	2027 Emission	Global Warming Potential Factor	2027 CO2e	Project CO2e vs 2019 UMR ASF Permit CO_2e	Project CO2e vs 2023 Schluter Facility 2023 CO_2e
CO2	6,947	1	6,947	5,726	4,414
CH4	0	84	10	8	5
N20	0	264	9	7	7
HFO	114	1	114	114	114
		Total	**7,080**	**5,855**	**4,540**

Despite the relative "potency" of CH_4 and N_2O as a GHG when compared to CO_2 and HFO, total CO_2 emissions from the combustion of fossil fuels outweigh both CH_4 and N_2O emissions by orders of magnitude and thus emissions when considered on a CO_2e basis do not vary substantially from PTE and actual emissions on an unweighted basis. 2027 Project PTE CO_2e emissions represent an increase of 34,496 tons above 2023 Schluter Facility emissions and an increase of 35,086 tons above UMR's 2019 ASF Permit. Increase in actual CO_2e emission are much lower, and 2027 project emissions represent an increase of 4,540 tons above 2023 Schluter Facility emissions, and 5,855 tons above UMR's 2019 ASF Permit. It is important to note that all actual CO_2e emissions values (7,080 tons CO_2e) are below the amounts of PTE CO_2e emissions attributable to UMR's ASF permitted operations (16,382 tons CO_2e, using the same calculation method as presented above). In other words, permitting of the combined Schluter and KB4 Facility is not anticipated to produce CO_2e emissions beyond what results from the operations authorized by the UMR ASF Permit, notwithstanding that the UMR ASF permit has no permit conditions that specifically regulate CO_2e emissions.

c. Extraction, transmission, use of fossil fuels or electricity imported into the state including upstream emissions

Upstream emissions have been calculated for the combustion of fossil fuels for various heating, manufacturing, and emissions control processes at the existing Schluter facility and the proposed KB4 Facility. Upstream fossil fuel emissions resulting from the extraction, processing, and transportation of fossil fuels were determined through use of the emission factors prescribed by *Appendix A Emission Factors for Use by State Agencies and Applicants; 2023 Statewide GHG Emissions Report*, a publication developed by the DEC. In accordance with the requirements of DAR-21, emissions were considered on a PTE and actual basis and have been provided in units of CO_2e. For comparison purposes, current project upstream GHG emission have also been provided.

2023 PTE Upstream GHG Emissions:

2023 Schluter Facility Natural Gas Potential to Emit- Upstream Greenhouse Gas Emissions								
Pollutant	Consumption	HHV (mmbtu/scf[1])	mmbtu	g/mmbtu[2]	Emissions(gram)	Emissions(ton)	CO2e Factor[3]	CO2e (ton/yr)
CO2	269,506,492	1.032E-03	278,131	12,272	3,413,219,950	3,762.4	1	3,762.39
CH4	269,506,492	1.032E-03	278,131	361	100,405,183	110.7	84	9,296.84
N2O	269,506,492	1.032E-03	278,131	0.14	38,938	0.04	264	11.33
							Sum	13,071

2023 Schluter Facility No.2 Fuel Oil Potential to Emit- Upstream Greenhouse Gas Emissions								
Pollutant	Consumption	HHV (mmbtu/gal[1])	mmbtu	g/mmbtu[2]	Emissions(gram)	Emissions(ton)	CO2e Factor[3]	CO2e (ton/yr)
CO2	28,905	0.1372	3,966	14,104	55,933,164	62	1	61.66
CH4	28,905	0.1372	3,966	120	475,892	1	84	44.06
N2O	28,905	0.1372	3,966	0.26	1,031	0.00	264	0.30
							Sum	106

[1]NYSDEC (2023) Summary Repor. 2023 NYS Statw Wide GHG Emissions Report, Appendix A Table A4
[2]NYSDEC (2023) Summary Repor. 2023 NYS Statw Wide GHG Emissions Report, Appendix A Table A1 & A2
[3]6 CRR-NY496.5

2023 Faculty PTE Upstream GHG Emissions: 13,177

2023 Actual Upstream GHG Emissions:

2023 Schluter Facility Natural Gas Actual- Upstream Greenhouse Gas Emissions								
Pollutant	Consumption	HHV (mmbtu/scf[1])	mmbtu	g/mmbtu[2]	Emissions(gram)	Emissions(ton)	CO2e Factor[3]	CO2e (ton/yr)
CO2	42,010,562	1.032E-03	43,355	12,272	532,051,333	586.5	1	586.48
CH4	42,010,562	1.032E-03	43,355	361	15,651,119	17.3	84	1,449.19
N2O	42,010,562	1.032E-03	43,355	0.14	6,070	0.01	264	1.77
							Sum	2,037

2023 Schluter Facility No.2 Fuel Oil Actual- Upstream Greenhouse Gas Emissions								
Pollutant	Consumption	HHV (mmbtu/gal[1])	mmbtu	g/mmbtu[2]	Emissions(gram)	Emissions(ton)	CO2e Factor[3]	CO2e (ton/yr)
CO2	29,261	0.1372	4,015	14,104	56,622,522	62	1	62.42
CH4	29,261	0.1372	4,015	120	481,757	1	84	44.61
N2O	29,261	0.1372	4,015	0.26	1,044	0.00	264	0.30
							Sum	107

[1]NYSDEC (2023) Summary Repor. 2023 NYS Statw Wide GHG Emissions Report, Appendix A Table A4
[2]NYSDEC (2023) Summary Repor. 2023 NYS Statw Wide GHG Emissions Report, Appendix A Table A1 & A2
[3]6 CRR-NY496.5

2023 Facility Actual Upstream GHG Emissions: 2,145

2027 PTE Upstream GHG Emissions:

2027 Schluter Facility + KB4 Natural Gas Potential to Emit- Upstream Greenhouse Gas Emissions								
Pollutant	Fuel Consumption (scf)	HHV (mmbtu/scf[1])	mmbtu	g/mmbtu[2]	Emissions(gram)	Emissions(ton)	CO2e Factor[3]	CO2e (ton/yr)
CO2	819,894,797	1.032E-03	846,131	12,272	10,383,724,911	11,446.0	1	11,446
CH4	819,894,797	1.032E-03	846,131	361	305,453,446	336.7	84	28,283
N2O	819,894,797	1.032E-03	846,131	0.14	118,458	0.13	264	34.47
							Sum	39,763

2027 Schluter Facility No.2 Fuel Oil Potential to Emit- Upstream Greenhouse Gas Emissions								
Pollutant	Fuel Consumption (gal)	HHV (mmbtu/gal[1])	mmbtu	g/mmbtu[2]	Emissions(gram)	Emissions(ton)	CO2e Factor[3]	CO2e (ton/yr)
CO2	70,577	0.1372	9,683	14,104	136,570,442	151	1	150.54
CH4	70,577	0.1372	9,683	120	1,161,972	1	84	107.59
N2O	70,577	0.1372	9,683	0.26	2,518	0.00	264	0.73
							Sum	259

[1]NYSDEC (2023) Summary Repor. 2023 NYS Statw Wide GHG Emissions Report, Appendix A Table A4
[2]NYSDEC (2023) Summary Repor. 2023 NYS Statw Wide GHG Emissions Report, Appendix A Table A1 & A2
[3]6 CRR-NY496.5

2027 Schluter + KB4 Faculty PTE Upstream GHG Emissions: **40,022**

2027 Actual Upstream GHG Emissions:

2027 Schluter Facility Natural Gas Actual- Upstream Greenhouse Gas Emissions								
Pollutant	Fuel Consumption (scf)	HHV (mmbtu/scf[1])	mmbtu	g/mmbtu[2]	Emissions(gram)	Emissions(ton)	CO2e Factor[3]	CO2e (ton/yr)
CO2	99,100,631	1.032E-03	102,272	12,272	1,255,080,156	1,383.5	1	1,383
CH4	99,100,631	1.032E-03	102,272	361	36,920,138	40.7	84	3,419
N2O	99,100,631	1.032E-03	102,272	0.14	14,318	0.02	264	4.17
							Sum	4,806

2027 Schluter Facility No.2 Fuel Oil Actual- Upstream Greenhouse Gas Emissions								
Pollutant	Fuel Consumption (gal)	HHV (mmbtu/gal[1])	mmbtu	g/mmbtu[2]	Emissions(gram)	Emissions(ton)	CO2e Factor[3]	CO2e (ton/yr)
CO2	29,261	0.1372	4,015	14,104	56,622,522	62	1	62.42
CH4	29,261	0.1372	4,015	120	481,757	1	84	44.61
N2O	29,261	0.1372	4,015	0.26	1,044	0.00	264	0.30
							Sum	107

[1]NYSDEC (2023) Summary Repor. 2023 NYS Statw Wide GHG Emissions Report, Appendix A Table A4
[2]NYSDEC (2023) Summary Repor. 2023 NYS Statw Wide GHG Emissions Report, Appendix A Table A1 & A2
[3]6 CRR-NY496.5

2027 Schluter +KB4 Facility Actual Upstream GHG Emissions: **4,914**

As presented in the above table, actual upstream GHG emissions for 2027 are anticipated to increase by 2,769 tons CO_2e above 2023 levels. PTE estimates for 2027 represent an increase of 27,045 tons of CO_2e above 2023 upstream PTE estimates.

d. Reasonably foreseeable indirect and downstream emissions

Reasonably foreseeable indirect and downstream emissions resulting from the use of UMR and SSLP's products are negligible. The combined Facility GHG emissions are from processes associated with the production of consumer products. At most, a minor increase in truck traffic is anticipated associated with the approval of this application. DAR-21 provides that "[d]ownstream emissions do not typically include emissions from the shipment or end-use of consumer goods or products produced for sale." *See* DAR-

21[V][C][4].A. The products manufactured generally constitute consumer goods or products produced for sale.

e. Projected future GHG and CO_2e emissions for 2030 and 2050 (including reduction strategies)

Fuel use across the combined Facilities is a combination of production use and fixed facility use. Fixed facility fuel use, for heating buildings and controlling snow and ice in parking areas, is a function of season and weather. Substantial changes in fuel consumption for fixed facility uses are not anticipated going forward. Fuel consumption is dependent on weather fluctuations from year to year, which is unpredictable, but not likely to significantly impact average annual fuel consumption. Fixed facility uses also include fuel consumption for fire pumps and emergency generators at the combined Facility. This use is limited to periodic maintenance operation of engines or incidental use during fires or emergencies. As it is utilized for backup/emergency purposes, No. 2 fuel oil consumption is anticipated to remain consistent with historic levels, and the GHG emissions from emergency and backup equipment operations are not expected to vary over time. Fuel use related to R&D activities is not expected to grow in proportion to production.

Aside from No.2 fuel oil, fuel use tied to production includes the operation of the boiler that supplies steam heat to the UMR molding process and hot oil for the SSLP foam board laminating line. Fuel consumption is influenced by production growth which in turn is a function of market demand. Forklift operations are also assumed to be proportional to the production growth rate, as detailed in Appendix A: *Mobile Emissions Addendum*.

The Schluter Facility component of this evaluation is based on the existing physical plant remaining the size that it is today. SSLP's Kerdi-Board production within the Schluter Facility is currently at operational capacity. Based on UMR bead growth projections, UMR's operations within the Schluter Facility will reach a physical limit on production prior to 2030 (per DAR-21). The natural gas supply data does not separately track use for space heating, so the 15% increase in natural gas use includes natural gas for that purpose, although space heating demands are not projected to increase over that period. Additionally, despite the planned decommissioning of the SSLP hot oil heater, this emission source has been included in emission projections to provide a conservative assessment. As such, the projections for future use of natural gas are biased high as the space heating demand is unrealistically increased by the production growth rate and the hot oil heater will be decommissioned.

The KB4 Facility component of this analysis assumes constant fuel use for boilers for supplementary heat and backup generators, as these sources are not expected to increase over time. 2030 direct process CO_2 emissions (from the blowing agent) were calculated on the foam use based on projected business and demand growth. Kerdi-Board production is expected to reach physical plant limits within the KB4 Facility by the year 2030.

Due to the combined Facilities physical limits on production beyond 2030, facility emissions in 2050 would be expected to be the same as the emissions in 2030.

Pollutant	2027 Schluter Facility + KB4 Projected Actual Emissions in Tons*	2030 Schluter Facility + KB4 Projected Actual Emissions in Tons*
CO2	6,947	7,861
CH4	0.11	0.14
N2O	0.04	0.05
HFO	113.97	163.91
CO2e	7,080	8,049

*Schluter Facility Emissions related to natural gas increased at 15% annually, No.2 Fuel Oil held constant.

f. Consistency and Justification

The Title V Air Permit Application here is intended to capture the emissions of two existing manufacturing areas within the Schluter Facility (UMR and SSLP) under common control and include new emissions from the Schluter Facility (RTO and MPRS8) and the newly proposed KB4 Facility. Per DAR-21, the GHG analysis evaluates increases or modifications of a facility's GHG emissions. This application is the result of compliance with the DEC's air emission regulations related to UMR and SSLP's operations being treated as a single source of emissions.

The transfer of SSLP's Kerdi-Board operations from the Schluter Facility to the KB4 Facility will result in a net reduction of VOC emissions for the combined Facilities and, therefore, will improve local air quality by significantly reducing toxic air pollutant emissions. This beneficial reduction in VOC emissions will be accomplished by SSLP's use of a new blowing agent at the KB4 Facility that will have reduced VOC emissions, the installation of the RTO at the Schluter Facility, and the use of electric power for production operations at the KB4 Facility. The efforts to reduce project VOC emissions will increase GHG emissions above current levels, but not above PTE levels associated with the 2019 UMR ASF Permit.

The New York State Climate Action Council's Final Scoping Plan acknowledges that:

> Near-term emission reduction opportunities in industry are likely to come primarily from energy efficiencies and some limited electrification for lower temperature processes. Greater emissions reductions (via the use of carbon capture, low-carbon fuels, or other) will likely occur in the longer term as innovation takes place and technologies scale, mature and become more viable.
>
> *New York State Climate Action Council, Final Scoping Plan p. 259 (December 2022) ("Scoping Plan").*

Unfortunately, "[t]he transition for Industry to decarbonize and embrace new technological solutions will take time and require state support." (*Scoping Plan* p. 262). One of the keys to industrial GHG emission reductions is in improvements to efficiency, which require advancement in technology. Thus, the continued use of the identified GHG emission sources for industrial manufacturing is recognized in the Scoping Plan and CLCPA.

The combined Schluter and KB4 Facilities will not be a significant new source of GHG emissions, as the majority of the actual GHG emissions at the combined Facilities are from existing sources and are being included in this comprehensive Title V Air Permit Application due to a common control determination by the DEC. The combined Schluter and KB4 Facilities will not prevent or make it more difficult or expensive for the State to reduce GHG emissions, as emissions from the facilities is relatively minor compared to larger sources of GHGs such as natural gas electric generating plants, which emit millions of tons of CO_2 emissions per year. Furthermore, GHG emissions associated with the current UMR ASF Permit authorization, estimated on a PTE basis, are more than double the comprehensive facility-wide projected actual 2027 GHG emissions levels.

DAR-21 notes that a project justification and discussion of alternatives and mitigation are required when the project is not consistent with CLCPA's GHG reduction requirements. While this project increases GHG emissions, it remains justified for several reasons. The absence of the project or closure of UMR's and SSLP operations will result in economic and social harm to the local community. This facility could be relocated to another state or out of the country, resulting in emissions leakage in excess of emissions from the project. By displacing the facility to other states or countries with less stringent pollution control laws the emissions could become greater in quantity and toxicity. Good paying jobs will leave the area (a disadvantaged community) and state, eliminating UMR and SSLP's contributions to the tax base and economy. A discussion of potential mitigation options is included below as required by DAR-21.

A significant portion of the Schluter Facility's and the KB4 Facility's GHG emissions are the byproduct of proposed actions to reduce VOC emissions, the pollutant of concern that classifies the Facilities as a major source. Under actual operating conditions, the RTO accounts for 758 tons of the Schluter Facility's projected total CO_2 emissions in 2027, which is a consequence of the destruction of VOCs and a minor contribution of CO_2 emissions from natural gas combustion. The increase in GHG emissions associated with the RTO is justified by the VOC control that is provided by its operation, which eliminates a significant proportion of VOC emissions. The alternate blowing agent that will be in use at the new KB4 Facility will also significantly reduce VOC emissions from blowing agents for SSLP's XPS process. However, CO_2 is a component of the blowing agent gas, and 113.97 tons of CO_2 emissions are projected to be emitted in 2027 because of its use. The increase in GHG emissions associated with the new blowing agent is justified by the 38.4-ton decrease in actual VOC emissions from SSLP's current XPS process within the Schluter Facility.

In contrast, as discussed below in *Section g*., to convert UMR's current operations within the Schluter Facility to electricity-based systems would require substantial infrastructure changes, including millions of dollars of investment into upstream utility substation upgrades. Denial of the Title V Air Permit Application would likely result in the applicant transferring some or all operations to other facilities outside of New York, leading to emissions leakage across state lines and economic losses to the community and region, and/or ceasing production of a valuable commercial product.

SSLP is the second largest private employer in the region and seeks to make this area its long-term home. UMR sells its molded EPS shower floors to SSLP, which are warehoused and resold to SSLP's customers.

SSLP has facilities in other states. Transfer of UMR's processes off-site would create significant new vehicle trips between facilities that are not necessary today given the Facilities' setup, resulting in significant GHG emissions. This would also result in longer transport routes for product delivery to its vendors that are located near the Facilities and in New York State in general. Thus, denial of the Title V Air Permit on CLCPA grounds would result in an economic detriment for New York and would likely result in overall increases in GHG emissions.

As the pending Title V Air Permit Application includes new and existing emissions that are not currently the subject of a permit, the GHG emissions covered by a permit will increase with this application. However, any such GHG emissions are justifiable based on the benefits of VOC reduction, the lack of feasible alternatives, and the economic harm to New York in the event of denial. Furthermore, actual facility-wide GHG emissions will remain significantly below estimated PTE emissions levels associated with the existing UMR ASF Permit.

g. Technical or economic feasibility of alternatives or mitigation measures

In accordance with the DAR-21 guidelines, if the project increases GHG emissions, the CLCPA evaluation must explain and provide justification for the increase and discuss potential alternatives or mitigation measures. While the Title V Air Permit Application will incorporate existing sources and processes that are not presently covered by the UMR ASF permit, it also includes new sources that will increase GHG emissions. This project includes the addition of an emissions control device (i.e., the RTO) to reduce the emission of VOCs at the Schluter Facility, and new process and combustion emissions within the proposed KB4 Facility. Because GHG emissions are increasing with this proposed project, UMR has evaluated the following alternatives to provide the Department with information for its review and any justification that it may present as part of the Title V Air Permit Application decision-making process.

Use of electric equipment instead of fossil fuel equipment

Converting to electric power sources of heat to generate the steam needed for UMR's molding process, the hot oil for the Kerdi-Board process, and space heating would require replacement of the current 39,100 MMBtu annual natural gas use with an equivalent amount of electricity. Assuming the same efficiency from electric power to heat as for natural gas combustion to heat, the demand would be 11.5 million kilowatt-hours (kWh). Such a conversion would require a new upstream dedicated electrical substation for the facility, which would require millions of dollars of investment and extensive planning and coordination with NYSEG, as well as the acquisition of new electric boilers and space heaters. Furthermore, electric heaters such as heat pumps are known to have decreasing efficiency in cold weather, and UMR would have to plan for additional heating capacity to make up for the decrease in heating efficiency, increasing facility heating costs.

The cost of a replacement for just the UMR molding process boiler with an equivalent electric boiler has an estimated capital cost of $200,000. The cost of constructing a substation dedicated to the electric boiler is estimated to be on the order of $900,000. This cost does not include additional upgrades to upstream utility infrastructure that would be needed to increase capacity to accommodate the substation, which would require

millions of dollars of additional investment. Assuming 2,000 hours a year for the UMR molding process boiler, the potential direct GHG emissions reduction achieved by switching to an electric boiler would be approximately 1,160 tons of CO_2. (This does not contemplate any GHG emissions related to generation of the 11.5 million kWh needed to power the boiler). While the rest of the boilers currently on site have substantially lower BTU ratings when compared to the molding press boiler, in total six (6) new boilers would be required to accommodate a conversion to electricity.

Relying on line power for the operation of the manufacturing processes carries a risk of production losses and/or emergency operations that would generate additional GHG emissions during power interruptions. The potential reduction in GHG emissions does not warrant cost of substation construction and boiler replacements and the risk of production losses and/or additional GHG emissions from emergency operations during power interruptions. Furthermore, the conversion to electric power has the potential to result in increased emissions from electrical generation (upstream emissions), which would offset some of the potential facility reduction.

Replacing diesel powered emergency generators and fire pumps with electric power equipment does not provide the necessary security this crucial equipment provides because it is intended to operate in the event of electric power supply interruptions, or in the case of fire suppression. The Schluter Facility must have the ability to function during a power supply interruption, and there are no generator or fire pump options that exist to replace these crucial safety devices. In addition, operation of the RTO and associated VOC control requires electricity, and interruption of electrical power supply would lead to uncontrolled emissions.

The KB4 Facility will rely primarily on non-combustion power and heat sources (line electric power, and on-site geo-thermal). The use of electricity for the majority of KB4's operations reflect UMR's commitment to reducing GHG emissions and is expected to cost on the order of tens of millions of dollars. The facility will have several boilers to provide supplemental heat during extreme cold weather, as the proposed heat pumps are not yet viable to cover all the facility's heating needs. Heat pump technology will be reevaluated when the supplement boilers need to be replaced. Five (5) diesel fuel generators will be installed as the KB4 Facility must have the ability to function during a power supply interruption, and there are no generator or battery power options to replace this emergency backup device.

Use of lower emission technologies or lower emission process materials

Transferring SSLP's Kerdi-Board operations to the KB4 Facility will lead to a reduction of VOC emissions due to the use of a new blowing agent for board production. However, CO_2, a component of the use of the new blowing agent gas, has an emission rate of 3% of total resin use. SSLP is continually researching opportunities through operational evaluations and R&D to reduce the percentage of CO_2 in the blowing agent and increase the efficiency of the production processes. Increased productivity has the potential to increase efficiency with regard to GHG emissions by allowing the production of a greater quantity of material using the same amount of blower agents. Decreasing the percentage of CO_2 within the blowing agent allows for a reduction in GHG emissions with the same resin and blowing agent usage. While SSLP will continue to evaluate reductions in blowing-agent CO_2 emissions, currently no such viable options exist without associated increases in VOC emissions.

Use of alternative process technologies

There are no current alternatives to using steam for the UMR's EPS molding process at the Schluter Facility. Development of a new technology that does not rely on steam heat is beyond the technical capacity of the Schluter Facility owner. As recognized in the Scoping Plan, "given current trends, many of the required technologies for deep decarbonization of the industrial sector will not be available in the timeframe necessary for the State to meet its targets." *Id*. at 267.

Geothermal heating was incorporated into the design of the corporate office building within the Schluter Facility. The use of geothermal heating in the corporate office building is an effective mitigation measure because it eliminates GHG emissions that would otherwise be needed to heat the building. Geothermal heating, however, is not feasible for the remaining Schluter Facility buildings.

SSLP is reducing its onsite GHG emissions by using electric power at the KB4 Facility for its Kerdi-Board (XPS) operations, which will negate the need for a fossil fuel boiler and associated combustion emissions to generate process heat. Additionally, the building will be heated with electric heat pumps and geothermal, and the only proposed fossil fuel sources are the supplementary comfort heat boilers and emergency backup generators.

Installation of light-duty electric vehicle charging infrastructure

While UMR has no control over vehicles its employees drive to the facility, installation of electric vehicle (EV) charging stations would provide convenience for employees that own electric vehicles and may encourage employees to switch over to EVs. As EV adoption becomes more widespread there will be an associated significant reduction of direct GHG and co-pollutant HAP emissions from commuting to and from the facility. UMR has committed to installing four (4) onsite dual EV charging stations at the newly constructed KB4 facility to encourage EV adoption and reduce personal vehicle emissions among its staff. A full discussion of GHG Emissions due to personal vehicle travel and the impact of EV charging infrastructure is provided in Appendix A: *Mobile Emissions Addendum*.

D. DISADVANTAGED COMMUNITY ANALYSIS

Section 7.3 of the CLCPA dictates that "[i]n considering and issuing permits, licenses, and other administrative approvals and decisions…all state agencies, offices, authorities, and divisions shall not disproportionately burden disadvantaged communities…[a]ll state agencies…shall also prioritize reductions of greenhouse gas emissions and co-pollutants in disadvantaged communities." The combined Schluter and KB4 Facilities are located within census tract 36019102100, which has been identified as a Disadvantaged Community (DAC). This Title V Air Permit Application is being completed to capture all of the existing emissions at the Schluter Facility under common control under a single permit, and to add the Schluter Facility emissions sources that do not currently exist (the RTO emissions reduction source and MPRS8), as well as the proposed KB4 Facility and associated emission sources. As with the GHG analysis above, for PTE emissions, this analysis assumes that the Schluter Facility and KB4 Facility are operating at maximum

emission levels, although SSLP's Kerdi-Board operations are expected to have left the Schluter Facility and moved into the KB4 Facility by 2027.

h. Analysis of Disproportionate Burden on DAC

New York State maintains a DAC Population Characteristics & Vulnerabilities and Environmental Burdens and Climate Change Risks indicator for this DAC. This section discusses the potential for Disproportionate Environmental Burden through Potential Pollutant Exposure factors associated with the project:

Environmental Burden & Climate Change Risk		
Potential Pollution Exposure	Benzene Concentration (Modeled)	18%
	Particulate Matter (PM2.5)	1%
	Traffic: Diesel Trucks	77%
	Traffic: Number of Vehicles	20%
	Wastewater Discharge	35%

Data Source: NYS Draft Disadvantaged Community Map, 2022.
https://climate.ny.gov/Our-Climate-Act/Disadvantaged-Communities-Criteria/Disadvantaged-Communities-Map

i. Analysis of co-pollutants (benzene)

ECL §75-0101(3) defines co-pollutants as "hazardous air pollutants produced by greenhouse gas emissions sources." Here, the GHG emissions sources relate to heating sources for manufacturing and building heating, as well as forklifts and emergency/backup equipment. The hazardous air pollutants generated by those sources include benzene. Short-term acute human health impacts from benzene emissions include lightheadedness, headaches, drowsiness, and irritation of the eyes, skin, and respiratory system. Long-term exposure to benzene can cause blood disorders, including leukemia, especially in children. It should be noted that benzene concentrations in the DAC are higher than only 18% of census tracts in New York, indicating that this is not a significant contributor to the tract's designation as a DAC.

Benzene is the only HAP identified as a Potential Pollution Exposure for the census block potentially affected by the facility.

At the request of DEC, this section has been expanded to provide a comparison of estimated HAP emissions associated with emission sources permitted under the 2019 UMR ASF, "current" or "existing" emissions for year 2023 attributed to the Schluter Facility, and proposed emissions associated with the combined Facilities, inclusive of the KB4 Facility in 2027. Natural gas consumption records separated by manufacturing area (SSLP and UMR at the Schluter Facility) are not available for the year 2019. Consequently, actual consumption of natural gas for emission sources reflective of the 2019 UMR ASF was estimated using UMR's fuel use records for 2022, which provide an aggregate natural gas consumption for UMR. Due to production growth, 2022 records marginally overstate fuel consumption as compared to consumption that would have been expected in 2019, and therefore benzene emissions from natural gas combustion for 2019. As described in prior sections of this report, for the Schluter Facility, all emissions attributed to SSLP are existing, aside from the RTO.

The following tables provide conservative calculations of benzene emissions from the combustion of No. 2 Fuel oil and natural gas using EPA's *AP-42: Compilation of Air Emission Factors* (EPA AP-42) for the scenarios described above.

PTE:

No.2 Fuel Oil Fired Generator HAPs - PTE

2027 Schluter Facility + KB4				
	Engine Size *600 hp (AP-42 Table 3.3-2)		Engine Size >600 hp (AP-42 Tables 3.4-3 & 4)	
Fuel Rate All Engines, gal/yr	9,893		60,535	
Diesel fuel, BTU/gal	137,200		137,200	
mmBTU/yr	1,357		8,305	
Pollutant	EF lb/mmBTU	lb/yr	EF lb/mmBTU	lb/yr
Benzene	9.33E-04	1.27	7.76E-04	6.45
	lb/yr	tpy		
Total All Engines	7.71	0.004		

2023 Schluter Facility				
	Engine Size *600 hp (AP-42 Table 3.3-2)		Engine Size >600 hp (AP-42 Tables 3.4-3 & 4)	
Fuel Rate All Engines, gal/yr	49,464		22,296	
Diesel fuel, BTU/gal	137,200		137,200	
mmBTU/yr	6,787		3,059	
Pollutant	EF lb/mmBTU	lb/yr	EF lb/mmBTU	lb/yr
Benzene	9.33E-04	6.33	7.76E-04	2.37
	lb/yr	tpy		
Total All Engines	8.71	0.004		

2019 UMR ASF Permit			
	Engine Size *600 hp (AP-42 Table 3.3-2)		
Fuel Rate All Engines, gal/yr	39,541		
Diesel fuel, BTU/gal	137,200		
mmBTU/yr	5,425		
Pollutant	EF lb/mmBTU	lb/yr	
Benzene	9.33E-04	5.06	
	lb/yr	tpy	
Total All Engines	5.06	0.003	

Natural Gas Combustion Benzene - PTE

	2027 Schluter Facility +KB4	2023 Schluter Facility	UMR ASF Permit
Heat Rating, BTU/hr	96,497,500	32,497,500	31,697,500
Nat. Gas, BTU/scf	1,032	1,032	1,032
Nat. Gas, scf/hr	93,505	31,489.83	30,714.63
mmBTU/hr	96	32.50	31.70
Operating (Heating) Hrs/yr	8,760	8760.0	8760.0
Nat. Gas, mmscf/yr	819.55	276	271

	EF[1] lb/mmscf	Emissions lb/yr	Emissions lb/yr	Emissions lb/yr
Benzene	2.00E-03	1.64	0.55	0.54

[1]AP-42 Chapter 1.4 Natural Gas Combustion

Actual:

No.2 Fuel Oil Fired Generator HAPs - Actual								
2027 Schluter Facility + KB4			**2023 Schluter Facility**			**2019 UMR ASF Permit**		
	(AP-42 Table 3.3-2)*			(AP-42 Table 3.3-2)*			(AP-42 Table 3.3-2)*	
Fuel Rate All Engines, gal/yr	29,261		Fuel Rate All Engines, gal/yr	1,149		Fuel Rate All Engines, gal/yr	1,149	
Diesel fuel, BTU/gal	137,200		Diesel fuel, BTU/gal	137,200		Diesel fuel, BTU/gal	137,200	
mmBTU/yr	4,015		mmBTU/yr	158		mmBTU/yr	158	
	EF			**EF**			**EF**	
Pollutant	**lb/mmBTU**	**lb/yr**	**Pollutant**	**lb/mmBTU**	**lb/yr**	**Pollutant**	**lb/mmBTU**	**lb/yr**
Benzene	9.33E-04	3.75	Benzene	9.33E-04	0.15	Benzene	9.33E-04	0.15

* Actual fuel consumption not available for individual gensets (only net), to provide conservative emission estimates, EF for <600 HP engines has been applied

Natural Gas Combustion Benzene - Actual

	2027 UMR and SSLP + KB4	2023 UMR and SSLP	UMR ASF Permit
Heat Rating, BTU/hr	96,497,500	32,497,500	31,697,500
Nat. Gas, BTU/scf	1,032	1,032	1,032
Nat. Gas, scf/hr	93,505	31,489.83	30,714.63
mmBTU/hr	96	32.50	31.70
Operating (Heating) Hrs/yr	1,025	1,334	748
Nat. Gas, mmscf/yr	95.81	42.01	22.97

	EF[1] lb/mmscf	**Emissions lb/yr**	**Emissions lb/yr**	**Emissions lb/yr**
Benzene	2.00E-03	0.192	0.080	0.046

[1]AP-42 Chapter 1.4 Natural Gas Combustion

Per the above calculations, the projected 2027 annual mass emission of benzene at the combined Schluter and KB4 Facilities is 3.94 pounds. While this mass emission rate for benzene is an increase when compared to the emissions attributed to the 2019 UMR ASF Permit, the increase is incremental, and total benzene emissions remain several orders of magnitude below the 100 lb./yr threshold provided by *6 NYCRR 201-9.1 Table 1 Significant Mass Emission Rates for Persistent, Bioaccumulative and Toxic Compounds*. DEC uses *6 NYCRR 201-9.1 Table 1* to determine if a facility can qualify for an Air Facility Registration (AFR), a ministerial authorization exempt from SEQR on the basis of limited potential for adverse environmental impacts. Additionally, the Schluter and KB4 Facilities are located in the vicinity of the New York State Northway and Plattsburgh Airport, both of which are more significant sources of benzene emissions.

Based on the low mass emission rate of benzene from the GHG emission sources of the facility and the adjacent significant contributors (i.e., New York State Northway and Plattsburgh Airport), the facility is not

anticipated to have a disproportionate impact on the adjacent community and no further analysis is warranted at this time.

At such low mass emission rates, further evaluation (e.g., via dispersion modelling) is unwarranted. Given the extremely low benzene emissions rates from the facility, the proximity to potentially significant benzene emitting transportation facilities, and the relatively low percentile ranking with regard to benzene for the subject DAC, there is no potential for the project to disproportionately impact the DAC with respect to benzene.

ii. Analysis of additional pollutants requested by DEC

In the May 23, 2024, NOIA, the DEC requested that UMR analyze other air emissions known for adverse human health effects, including VOCs, Nitrogen Oxides (NOx), Sulfur Dioxide (SO_2), Carbon Monoxide (CO), Total Particulate Matter (PM), and additional HAPs not identified as being a pollutant of concern for the subject disadvantaged community.

CO, SO_2, NOx, and PM are similar in that these pollutants often cause short-term and immediate respiratory and cardiac issues (i.e., difficulty breathing, chest pain or irregular heartbeat), especially in vulnerable populations with preexisting conditions. These pollutants may cause more severe immediate health issues, including asthma attacks or heart attacks, that can result in serious hospitalization. More prolonged-term exposure to these pollutants, while not a primary concern, can lead to asthma and heart disease. VOCs and HAPs both may cause skin, eye, nose, and throat irritation during short-term exposure. Long term exposure to VOC and HAPs may cause several types of cancers.

As with GHG emissions detailed in this CLCPA analysis, emissions of the additional pollutants requested by DEC are a function of combustion and direct process emissions. Actual combustion emissions for CO, NOx, SO_2, VOCs, and HAPs were calculated by multiplying the 2027 projected fuel consumption for each combustion source (e.g., natural gas boilers, heaters, and diesel combustion units) by the corresponding EPA AP-42 emissions factors. Co-pollutant emissions for the RTO were calculated using the same method; however, it should be noted that emissions are only attributed to the natural gas combustion component of the control device, as pollutants beyond CO_2 have not been identified by the manufacturer as occurring from the destruction of VOCs. PTE combustion emissions were calculated by multiplying the PTE fuel consumption for each combustion unit (natural gas boilers and heaters and diesel combustion units) by corresponding EPA AP-42 emissions factors.

Actual VOC process emissions differ for the Schluter Facility and the KB4 Facility. Within the Schluter Facility, UMR's process VOC emissions were calculated based on the projected EPS bead use and the percentage of VOCs retained in the final product. VOC emissions will be controlled by the RTO, which breaks down VOCs through thermal oxidation. UMR's 2027 VOC process emissions are projected to be 22.2 tons. Calculations demonstrating the VOC capture and control provided by the RTO for UMR’s Schluter Facility operations are provided in the Title V Engineering Report submitted June 8, 2023. For the KB4 Facility, VOC emissions were calculated as 0.2% of the projected total foam use for the year 2027, which resulted in 7.6

tons of VOCs. KB4 does not have a similar VOC control system; therefore, all process VOC emissions are fugitive.

PM process emissions are attributed to SSLP's Thinset operations, which will remain within the Schluter Facility, and SSLP's board cutting and recycling operations, which will be relocated to the KB4 Facility. Particulate control for cement packaging within the Thinset operation is 99.9%, resulting in 0.25 tons of PM emissions. XPS fluff recycling operations have a capture capacity of 99.8% and will generate approximately 0.76 tons of PM. Board cutting, and secondary operations have a 99.9% capture efficiency and will result in PM emissions of 0.46 tons.

HAP process emissions are derived from adhesive use for SSLP's Kerdi-Board board lamination process within the KB4 Facility. Hot melt polyurethane adhesives contain 5-10% of 4,4-methylene-diphenyl-diisocyanate (MDI), an EPA-listed HAP, by weight. Because SSLP doesn't yet operate at KB4, actual MDI emissions for 2027 were calculated based on SSLP's current MDI emissions and factors that take into account the quantity of adhesive used in the XPS laminating line and the quantity projected to be used on the proposed KB4 laminating line based on application rates and square meters of board production. 2027 actual process HAP (MDI) emissions are projected to be 0.003 tons.

PTE calculations for process emissions are conservative in that they assume that each production facility is operational for 8,760 hours, which is infeasible due to operational realities as discussed above. Calculations for DEC's requested pollutant emissions associated with all facilities are detailed in the August 2024 *Title V Air Permit Consolidated Engineering Report* prepared by CLA Site and submitted concurrently with this report.

The following tables summarize the mass emission rate of the additional pollutants requested by DEC under "PTE" and actual operating conditions. Like prior sections of this report, and at the request of DEC, this the table includes a comparison of estimated emissions associated with emission sources permitted under the 2019 UMR ASF, "current" or "existing" emissions for the year 2023 attributed to the Schluter Facility (UMR and SSLP), and proposed emissions associated with the combined Facilities, inclusive of the KB4 Facility in 2027. To provide context for the emission levels, and associated potential impacts, the regulatory threshold for AFRs and the triggering emission level for a Title V Air Permit have also been provided.

Additional Pollutants Requested by NYSDEC -PTE						
Pollutant	UMR ASF PTE	2023 Schluter Facility (tpy)	2027 Schluter Facility + KB4 (tpy)	2019 UMR ASF Permit Limit (tpy)	Air Facility Registration Threshold (tpy)	Title V Thresholds (tpy)
VOC	165.29	288.39	131.99	49	25	50
PM10/PM2.5	1.89	4.59	14.59	—	50	100
NOx	17.81	18.21	44.11	—	50	100
CO	12.25	12.49	38.89	—	50	100
SO2	0.40	0.40	0.50	—	50	100
Total HAPs	0.260	0.26	0.53	—	12/5	25/10

Additional Pollutants Requested by NYSDEC -Actual						
Pollutant	UMR ASF	2023 Schluter Facility (tpy)	2027 Schluter Facility + KB4 (tpy)	2019 UMR ASF Permit Limit (tpy)	Air Facility Registration Threshold	Title V Thresholds
VOC	—	98.69	30.180	49	25	50
PM10/PM2.5	—	1.09	3.086	—	50	100
NOx	—	2.59	11.439	—	50.00	100
CO	—	1.86	8.149	—	50	100
SO2	—	0.04	0.059	—	50	100
Total HAPs	—	0.04	0.070	—	12/5	25/10

The addition of the RTO within the Schluter Facility and the transfer of SSLP's Kerdi-Board process to KB4 will reduce 2027 projected actual VOC emissions below levels currently emitted by the Schluter Facility, and below VOC limits for UMR's 2019 ASF Permit. The decrease in VOC emissions will benefit local air quality within the DAC while providing the regional economic benefits of increased production by the Schluter and KB4 Facilities. Except for VOCs, emission of all other pollutants requested by DEC's for analysis are projected to increase from current levels by 2027. However, these increases are relatively minor in that they remain significantly below applicable AFR thresholds (by 1 to 3 orders of magnitude) and thus are not anticipated to have a significant environmental or human health impact.

Air dispersion modeling for VOCs was completed in support of the Title V Permit Application and is detailed in the CLA Site *Engineering Report* dated June, 2023 and *Title V Air Permit Consolidated Engineering Report* dated August 2024. In all cases, comprehensive facility-wide emissions result in maximum fence-line concentrations for VOCs at several orders of magnitude below the most restrictive applicable short term guideline concentration (SGC) and annual guideline concentration (AGC) specified in DEC Air Guide 1 (DAR-1). DEC has developed SGC and AGC, and as provided by DAR-1, "*These guideline air concentrations are used within a regulatory context to protect the general public from adverse health effects that may be induced by exposure to ambient air contaminants*. Therefore, the emission points were determined to comply with Part 212 process regulations, as SGC and AGC fence line concentrations will be significantly below levels that could result in adverse health impacts.

iii. Hydrofluoroolefin

Hydrofluoroolefin (HFO) is a component of the blowing agent that will be used in the Kerdi-Board operation at the KB4 Facility. Similar to CO_2, HFO is anticipated to comprise up to 3% of the resin/blowing agent

feedstock. PTE for resin use at KB4 is 8,760,000 kg/yr, and therefore PTE HFO emissions are calculated at 289.68 tons. In 2027, when SSLP operations are anticipated to be transferred entirely to the KB4 Facility, SSLP's actual projected foam consumption is 3,446,326 kg, resulting in HFO emissions of 113.97 tons. As described in previous sections of this report, HFO is a GHG with a GWP equivalent to CO_2, and its emission have been included in the Facility's GHG emissions inventories.

HFO is an alternative compound to hydrofluorocarbons (HFCs) and has zero ozone-depleting properties and a lower GWP when compared to HFCs, which have GWPs ranging from 1,430 – 14,800[1]. HFO also has a significantly lower environmental lifetime (2 weeks) than HFCs (14 years) and CO2 (20 – 200 years)[2]. HFOs are not listed on the EPA's HAP list. The Safety Data Sheet (SDS) for HFO was reviewed and a search for scholarly articles was completed and no chronic health impacts associated with HFO were identified. Short term acute health impacts identified on the SDS (dizziness, respiratory issues, skin irritation, and eye damage), are only documented as a potential occupational exposure occurring at very high concentrations (>15,000 ppm)[3].

EPA issues guidance on new technologies under the "Significant New Alternatives Policy Program" (SNAP). The SNAP applicable to use of HFO as a blowing agent states that "impacts on local air quality from the release of the HFC-HFO co-blowing agents are not a concern" and that "The HFC-HFO co-blowing agents are recommended for SNAP approval for the extruded polystyrene boardstock and billet end-use."[4] Given EPA's analysis, and the lack of documented chronic health risks, the use of HFO as a blowing agent will not disproportionately impact a DAC.

iv. Analysis of traffic (diesel trucks and total vehicles)

This application involves the consolidation of existing air pollutant emissions (UMR and SSLP) under a single Title V Permit and the addition of a new facility (KB4 Facility). No proposed changes to the Schluter Facility have the potential to substantially increase traffic volumes associated with the existing facility. Vehicle traffic will be proportional to production volumes and will be split between the Schluter Facility and KB4 Facilities once construction of the KB4 Facility is complete. The local roadways serving the facility include an interstate highway (I-87) and a county highway (CR-23/Irish Settlement Road). Facility-associated traffic is dwarfed by overall traffic volumes along the local road network.

In the NOIA dated May 23, 2024, DEC requested that UMR estimate the increase in project truck traffic above truck traffic associated with UMR's ASF. To address DEC's comment, UMR investigated historic truck traffic for the Schluter Facility. Truck traffic records from 2021 indicate a total of approximately 19,829 annual round trips with 1,255 attributed to UMR, 3,514 round trips associated with air-permit exempt Thinset

[1] U.S. EPA – Technology Transitions GWP Reference Table: https://www.epa.gov/climate-hfcs-reduction/technology-transitions-gwp-reference-table

[2] The Journal of Supercritical Fluids - Thermal stability and decomposition behavior of HFO-1234ze(E) as a working fluid in the supercritical organic Rankine cycle

[3] The Training Center – Working with HFO Refrigerants: Understanding the Hazards

[4] US EPA Significant New Alternatives Policy Program Foam Blowing Sector Risk Screen on Substitutes in Extruded Polystyrene Boardstock and Billet Foam - May 29, 2020

operations, and 15,060 round trips attributed to unpermitted SSLP and UMS operations. Current (2023) truck traffic is estimated at approximately 32,379 annual round truck trips; however, this includes traffic associated with a separate facility operated by SSF Production LLC (SSF) under a separate ASF Permit.

Traffic figures available for 2023 do not differentiate between UMR, UMS, and SSF operations, and therefore overstate combined facility totals versus 2021. 2021 traffic volumes do not account for SSF-associated traffic volumes and therefore cannot be directly compared to 2023 or projected 2027 traffic volumes, however, in 2023, approximately 7,028 truck trips were associated with UMR, UMS and SSF operations, 6,526 with the exempt Thinset operation, and 18,825 with SSLP operations.

After KB4's completion, traffic from the combined facilities will increase from the 2023 facility total of 32,379 annual round truck trips to a projected 33,572 annual round truck trips. This volume represents an increase of 1,193 truck round trips from the Schluter Facility's current truck traffic.

The Schluter Facility averages approximately 342,160 employee vehicle trips annually. The addition of the KB4 Facility, which will assume the complete transfer of SSLP's Kerdi-Board operation and employees, to the Title V permit application will increase employee vehicle traffic by 24,960 to 367,120 annual employee vehicle round trips. Per the publicly available New York State Department of Transportation Traffic Data Viewer, CR-32 alone handles in excess of 1.3 million vehicle trips per year, and the nearest measurement of traffic on I-87 handles in excess of 4.9 million vehicle trips per year. Assuming that all employee trips utilized both CR-32 and I-87, the addition of the KB4 Facility and the corresponding projected growth in vehicle round trips will lead to maximum increases in yearly traffic of approximately 2% along the CR-32 and 0.5% along I-87. Due to the minimal increase in traffic attributed to the addition of the KB4 Facility to existing facilities, there is no potential for the combined Schluter and KB4 Facilities to disproportionately impact the DAC with regard to traffic. No co-pollutants regulated by the CLCPA are otherwise triggered by this potential DAC impact. Further information on traffic and associated emissions with on and off-road emissions sources is provided in Appendix A – *Mobile Emissions Addendum.*

It should also be noted that a Traffic Evaluation was prepared by Creighton Manning in November 2023 for operation of the KB4 Facility, which found there would be no significant impact to traffic volumes. This finding was affirmed by the Town of Plattsburgh review of the project under SEQRA during the Town site plan approval process, further confirming there is no potential for changes in traffic volumes to disproportionately burden disadvantaged communities.

v. Analysis of wastewater discharge

This application involves the consolidation of existing air pollutant emissions under a single Title V Permit. There are no operational changes to the Schluter Facility or permitting implications with regard to wastewater discharges. The facility maintains a no-exposure certification for stormwater discharges under the Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity, demonstrating that site-associated stormwater does not have the opportunity to come in contact with industrial processes.

UMR has applied for a SPDES Individual Permit for the proposed KB4 Facility to operate its planned onsite wastewater system, which the DEC determined to be necessary due the inclusion of a floor wash wastewater system, and reverse osmosis backwash that the on-site septic system will treat. The wastewater treatment system has been appropriately designed to prevent improper discharges to local surface water and groundwater sources. Therefore, there is no potential for disproportionate impacts to the DAC associated with wastewater discharges from this project. No co-pollutants regulated by the CLCPA are otherwise triggered by this potential DAC impact.

E. CONCLUSION

The Title V Permit process is being completed to capture all of the existing emissions at the Schluter Facility under common control and new emissions that are not currently operational (RTO emissions reductions source, MPRS8, and all KB4 emissions). The proposed changes and additions will reduce combined Schluter Facility and KB4 Facility VOC emissions by 74.3 tons, resulting in VOC emissions of 30.1 tons, which is significantly below UMR's existing ASF Permit limit and the Title V Air Permit threshold. Estimated actual GHG emissions for the combined Schluter and KB4 Facility are anticipated to be below PTE GHG levels associated with the current (2019) UMR ASF Permit.

The project will not create a burden to the surrounding DAC. As stated above the installation of the RTO and construction of the KB4 Facility will reduce project VOC emissions and therefore improve local air quality, and therefore the project does not warrant any additional project design. The Title V Air Permit Application proposes a permit condition limiting emergency generator use to 100 hours to reduce potential NOx emissions associated with diesel combustion. As a result, all GHG co-pollutants will be below Air Facility Registration thresholds, with the exception of VOC process emissions which are maintained at concentrations several orders below guidance values, and therefore do not present a potential to disproportionately burden disadvantaged communities. The facility has made significant efforts to reduce project GHG emissions, including electrifying production and a majority of heating operations within the KB4 Facility at the cost of millions of dollars of additional investment. While traffic is anticipated to increase as a result of the addition of MPRS8, and the construction of the KB4 Facility, projected increases in annual traffic to local CR-32 and I-87 are only 2% and 0.46% respectively. A separate Enhanced Public Participation Plan has been prepared to summarize the impact of the project on the surrounding Potential Environmental Justice Areas, and to inform and solicit additional feedback from the community on the proposed project.

The increase in GHG emissions is justified for several reasons. The absence of the development and transition of production to the proposed KB4 Facility has the potential to result in environmental harm to the public, as moving production to the proposed KB4 Facility will result in significant reduction of pollutant emissions (VOCs). Additionally, the closure of UMR's and SSLP's current operations would result in economic and/or social harm to the public. UMR has elected to install an RTO, which will generate CO_2 emissions through the destruction of VOC's captured from the Schluter Facility's current operations. The KB4 process has been designed to reduce VOC emissions through the use of blowing agent that utilizes CO_2 gas. The load on the RTO will be reduced by transferring SSLP's Kerdi-Board production to KB4 and facility wide VOC's

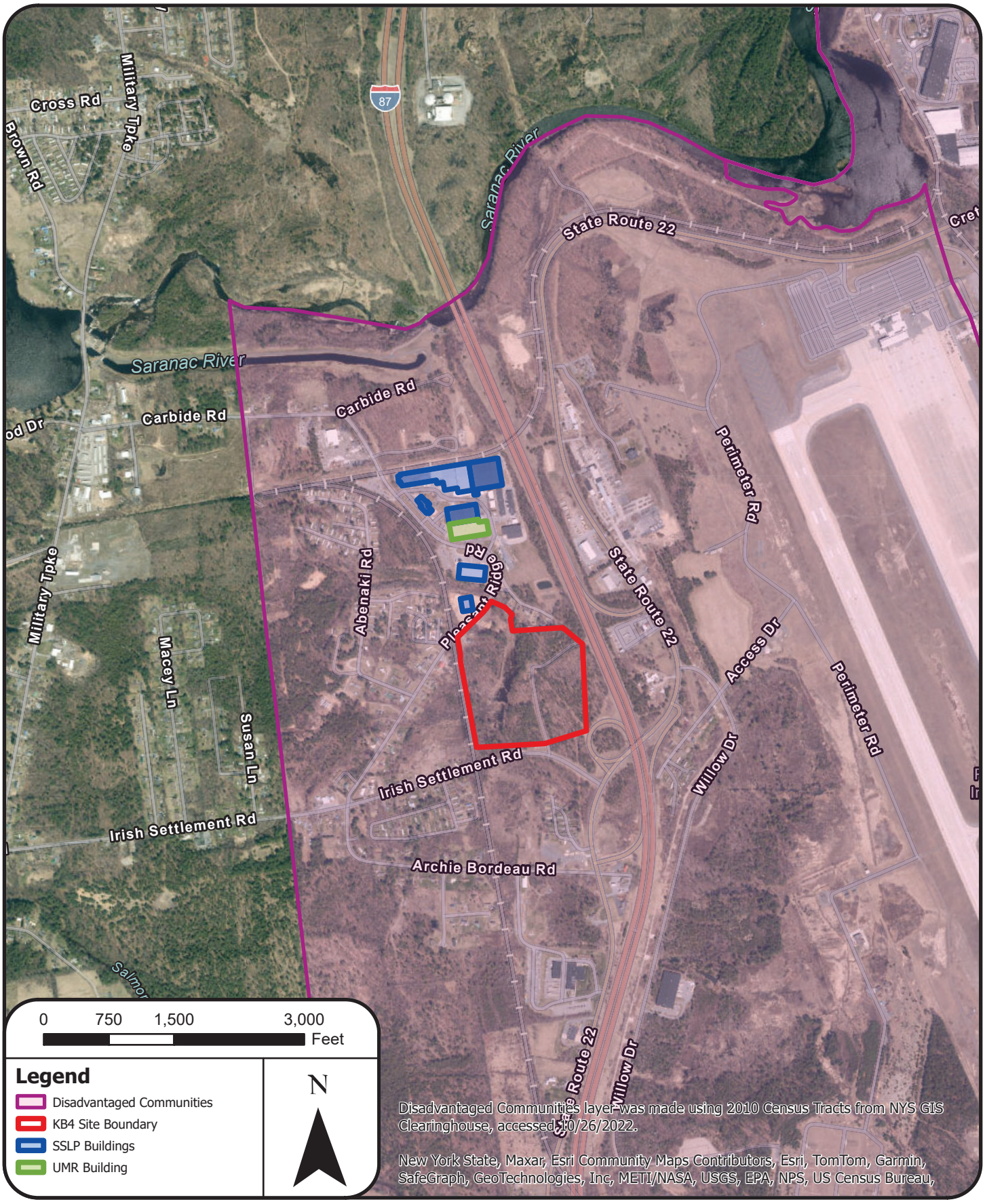
emission are anticipated to further decline to 30.1 tons, as stated above. Reducing total combined facility VOC emissions (achieved through the described processes that increase CO2 emissions by 758 tons and 113.91 tons respectively) will improve local air quality by significantly reducing mass emissions of VOCs, which are known to cause various health effects and increase cancer risk.

To further comply with DAR-21 requirements in response to a proposed GHG increase, UMR investigated project alternatives and mitigation measures to prevent an increase in GHG emissions. Eliminating the use of natural gas for heat and steam generation for UMR's molding process within the Schluter Facility was determined to not be technically or economically practical. SSLP has implemented geothermal heating as a GHG mitigation measure in the corporate office building. UMR also conducts a continuous improvement program that has the potential to reduce GHG emissions by improving production efficiency.

To move towards electrification, there will be no fossil fuel combustion for process operations at the proposed KB4 Facility. However, technological limitations and operational requirements mean that new combustion sources are required for the KB4 Facility for supplemental heat and facility backup generators as electric equivalents are not viable. SSLP is currently investigating different formulations of the blowing agent that will be used at the KB4 facility, to reduce CO_2 fraction, or to increase blowing agents' impact on production efficiency, which would reduce process CO_2 emissions.

FIGURE 1

DISADVANTAGED COMMUNITIES MAP



19 British American Blvd. W, Latham NY 12110
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DISADVANTAGED COMMUNITIES MAP

UMR BOARDS PRODUCTION, LLC
CLCPA

TOWN OF PLATTSBURGH — CLINTON COUNTY, NY

PROJ. NO:	DATE:	SCALE:	DWG NO.	FIGURE:
17-S0125N-001	07/29/2024	1 IN = 1,500 FT	-	1

ATTACHMENT I

DETAILED GHG EMISSION SOURCE LIST

EMISSION SOURCE LIST

Source type	Equipment Category	Description/ Model #	Manufacturer	Capacity	Capacity Unit	Fuel Type
Stationary	Emerg. Gen	NA	Generac	76	HP	Nat Gas
	Emerg. Gen	NA	Generac	128	HP	Nat Gas
	Emerg. Gen	EK130 EAAD088486	Generac	454	HP	Nat Gas
	Fire Pump	C18		575	HP	Diesel
	Fire Pump	C18		575	HP	Diesel
	Emer.Gen	TAD 1031 GE		400	HP	Diesel
	Emerg. Gen	F2CE9685A*E		489	HP	Diesel
	Emerg. Gen	2806C-E18TAG3		874	HP	Diesel
	Emerg. Gen	S12R-Y2PTAW-1	Generac	1,881	HP	Diesel
	Emerg. Gen	S12R-Y2PTAW-2	Generac	1,881	HP	Diesel
	Emerg. Gen	S16R-Y2PTAW2-1	Generac	2,923	HP	Diesel
	Emerg. Gen	S16R-Y2PTAW2-2	Generac	2,923	HP	Diesel
	Emerg. Gen	K1248064N22	Generac	1,412	HP	Diesel
	Boiler		Cleaver Brooks	10.04	MMBtu	Nat Gas
	Boiler	232 kW	Geseba	0.8	MMBtu	Nat Gas
	Boiler	Magnatherm	Laars	2.5	MMBtu	Nat Gas
	Boiler	NeoTherm	Laars	0.264	MMBtu	Nat Gas
	Boiler	NeoTherm	Laars	0.264	MMBtu	Nat Gas
	Boiler		Burnham	0.096	MMBtu	Nat Gas
	Boiler	CFLC- 8000 MBH	CleaverBrooks	8	MMBtu	Nat Gas
	Boiler	CFLC- 8000 MBH	CleaverBrooks	8	MMBtu	Nat Gas
	Boiler	CFLC- 8000 MBH	CleaverBrooks	8	MMBtu	Nat Gas
	Boiler	CFLC- 8000 MBH	CleaverBrooks	8	MMBtu	Nat Gas
	Boiler	CFLC- 8000 MBH	CleaverBrooks	8	MMBtu	Nat Gas
	Boiler	CFLC- 8000 MBH	CleaverBrooks	8	MMBtu	Nat Gas
	Boiler	CFLC- 8000 MBH	CleaverBrooks	8	MMBtu	Nat Gas
	Boiler	CFLC- 8000 MBH	CleaverBrooks	8	MMBtu	Nat Gas
	Space Heating	Heating Unit	AbsolutAire	0.1215	MMBtu	Nat Gas
	Space Heating	Heating Unit	AbsolutAire	0.1215	MMBtu	Nat Gas
	Space Heating	Heating Unit	AbsolutAire	0.1215	MMBtu	Nat Gas
	Space Heating	Heating Unit	Trane	0.08	MMBtu	Nat Gas
	Space Heating	Heating Unit	Trane	0.08	MMBtu	Nat Gas
	Space Heating	Heating Unit	Trane	0.08	MMBtu	Nat Gas
	Space Heating	Heating Unit	Trane	0.08	MMBtu	Nat Gas
	Space Heating	Heating Unit	Modine	0.25	MMBtu	Nat Gas
	Space Heating	Heating Unit	Modine	0.25	MMBtu	Nat Gas
	Space Heating	Heating Unit	Modine	0.25	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler-GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-400	0.4	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-400	0.4	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-400	0.4	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-400	0.4	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas

EMISSION SOURCE LIST

Source type	Equipment Category	Description/ Model #	Manufacturer	Capacity	Capacity Unit	Fuel Type
Stationary	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Modine- Hot Dwag	0.125	MMBtu	Nat Gas
	Space Heating	Heating Unit	Modine- Hot Dwag	0.125	MMBtu	Nat Gas
	Space Heating	Heating Unit	Modine- Hot Dwag	0.125	MMBtu	Nat Gas
	Space Heating	Heating Unit	Modine- Hot Dwag	0.125	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Modine- Hot Dwag	0.125	MMBtu	Nat Gas
	Space Heating	Heating Unit	Modine- Hot Dwag	0.125	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler GTC-480	0.58	MMBtu	Nat Gas
	Space Heating	Heating Unit	Modine	1.769	MMBtu	Nat Gas
	Space Heating	Heating Unit	Reznor	0.175	MMBtu	Nat Gas
	Space Heating	Heating Unit	Reznor	0.175	MMBtu	Nat Gas
	Space Heating	Heating Unit	Reznor	0.175	MMBtu	Nat Gas
	Space Heating	Heating Unit	Reznor	0.175	MMBtu	Nat Gas
	Space Heating	Heating Unit	Reznor	0.3	MMBtu	Nat Gas
	Space Heating	Heating Unit	Thermocycler	0.505	MMBtu	Nat Gas
	Hot Water Heater	Hot Water Heater	Rinnai	0.18	MMBtu	Nat Gas
	Space Heating	Infra-Red Heat Unit	Infra-Red Heat Unit	0.065	MMBtu	Nat Gas
	Space Heating	Infra-Red Heat Unit	Infra-Red Heat Unit	0.065	MMBtu	Nat Gas
	Space Heating	Infra-Red Heat Unit	Infra-Red Heat Unit	0.065	MMBtu	Nat Gas
	Space Heating	Infra-Red Heat Unit	Infra-Red Heat Unit	0.065	MMBtu	Nat Gas
	Space Heating	Make-up Air Unit	AbsolutAire	1.125	MMBtu	Nat Gas
	Space Heating	Make-up Air Unit	AbsolutAire	1.125	MMBtu	Nat Gas
	Space Heating	Modine- Hot Dwag	Modine- Hot Dwag	0.175	MMBtu	Nat Gas
	Space Heating	Modine- Hot Dwag	Modine- Hot Dwag	0.175	MMBtu	Nat Gas
	Space Heating	Modine- Hot Dwag	Modine- Hot Dwag	0.175	MMBtu	Nat Gas
	Space Heating	Split System	York	0.06	MMBtu	Nat Gas
	Space Heating	Split System	York	0.18	MMBtu	Nat Gas
	Space Heating	Split System	York	0.06	MMBtu	Nat Gas
	Space Heating	Split System	York	0.12	MMBtu	Nat Gas
	Space Heating	Split System	York	0.12	MMBtu	Nat Gas

APPENDIX A

MOBILE EMISSIONS ADDENDUM

CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT 7(3) ANALYSIS – MOBILE EMISSIONS ADDENDUM

UMR BOARDS PRODUCTION LLC
TITLE V AIR PERMIT APPLICATION

PLEASANT RIDGE ROAD
TOWN OF PLATTSBURGH

Prepared for:

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Submitted: December 7, 2023
Rev.01: August 21, 2024
Rev.02: October 28, 2024
Rev.03: December 13, 2024

Project No. 17-S0125N-002

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UMR BOARDS PRODUCTION LLC - AIR STATE FACILITY PERMIT APPLICATION PROJECT-SPECIFIC CLCPA SECTION 7(3) MOBILE EMISSIONS ADDENDUM

This revised Community Risk and Resiliency Act (CRRA) and Climate Leadership and Community Protection Act (CLCPA) Section 7(3) Mobile Emissions Addendum is being provided in response to a New York State Department of Environmental Conservation (DEC) Notice of Incomplete Application (NOIA) dated September 27, 2024, for the combined Schluter and Kerdi-Board Line 4 (KB4) Facilities. Consistent with a common source determination by DEC, JMT of New York, Inc. (JMT) on behalf of UMR Boards Production, LLC ("UMR" or "the Applicant"), is providing this expanded Mobile Emissions Addendum to include estimated mobile emissions from the proposed KB4 Facility. For clarity, the existing UMR and SSLP manufacturing areas will be referred to as the "Schluter Facility," the proposed KB4 operation as the "KB4 Facility," and when referring to the collective facility inclusive of both the Schluter Facility and proposed KB4 Facility, the term "Facilities" will be used.

On May 8, 2024, during the pending review process of the subject Title V Air Permit Application, DEC issued policy *DEP 24-1 / Permitting and Disadvantaged Communities* (DEP 24-1), which provides guidance to DEC staff when reviewing permit applications for CLCPA Section 7(3) compliance, including the mobile emissions component. This report has been prepared consistent with DEP 24-1.

A. SCOPE OF ASSESSMENT AND METHODOLOGY

In a NOIA dated November 7, 2023, DEC requested that greenhouse gas (GHG) and co-pollutants from mobile emissions related to the Schluter Facility be estimated and assessed for potential impacts on a potentially affected Potential Environmental Justice Area (PEJA) and a Disadvantaged Community (DAC). For additional detail on the Schluter Facility's proximity to the identified PEJA and DAC, see Figure 1 *DAC and PEJA Map – Mobile Emissions Addendum*. Consistent with DEC's request in the NOIA, UMR submitted the Mobile Emissions addendum with its CLCPA analysis on December 7, 2023. As requested by DEC, emissions were calculated for both on- and off-road mobile sources consistent with the approach and emission factors provided by the United States Environmental Protection Agency (USEPA) publication *Emission Factors for Greenhouse Gas Inventory 2023 Edition,* and the United States Department of Energy's *Alternative Fuel Life-Cycle Environmental and Economic Transportation (*AFLEET*) Tool.*

Following UMR's December 7, 2023-submission, DEC issued a NOIA, dated May 23, 2024, requesting UMR include an analysis of mobile emissions from the proposed KB4 Facility. Additionally, DEC requested that UMR quantify and assess any traffic increases that have occurred due to production increases since UMR's Air State Facility (ASF) Permit was issued in 2019, as well as additional increases to traffic that are anticipated for the KB4 Facility. Consistent with DEC's request, the analysis was expanded to include these components and submitted for DEC review on August 19, 2024.

It should be noted that emissions associated with the Schluter Facility's fleet of twenty-five (25) propane-powered forklifts were assessed on an actual and potential to emit (PTE) basis in the initial CLCPA

Section 7(2) and 7(3) analysis submitted June 8, 2023. For consistency, the analysis for these emission sources was moved to this mobile emission addendum as part of the August 19, 2024 submission, along with the addition of the KB4 Facility.

Following UMR's August 19, 2024-submission, DEC issued a NOIA dated September 27, 2024, requesting that the analysis be updated to include tables that summarize increases in site related traffic and GHG and co-pollutant increases from mobile sources. Consistent with DEC's request, this analysis has been expanded to include the summary tables.

B. SOURCES OF EMISSIONS

Operation of the combined Facilities will involve the use of off-road-equipment (e.g., forklifts, light duty vehicles, box trucks) powered by diesel, propane, and gasoline fuel. The combustion of diesel, propane, and gasoline fossil fuels will result in the emission of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) GHGs, and co-pollutants. ECL §75-0101(3) defines co-pollutants as "hazardous air pollutants produced by greenhouse gas emissions sources." To quantify emissions, the following inventory of site equipment, year of manufacture, fuel consumption rates, anticipated annual road miles or operating hours (depending on equipment type), and total annual fuel consumption was developed. For additional details on emission sources, please see Attachment I: *Emission Source List*.

Off-Road - Estimated Annual Fuel Consumption by Run Time					
Type	Manufacture Year	Fuel Type	Fuel Consumption Rate (gal/hr)[1]	Estimated Annual Run Hours[2]	Annual Fuel Consumption (gal)
Utility Vehicle	2020	Diesel	6	10	60
				Sum	60

[1]As reported by UMR/SSLP

[2]Estimated based on 75 miles of internal to the Facility travel annually, as reported by UMR/SSLP

Off- Road - Estimated Annual Fuel Consumption by Annual Miles					
Type	Fuel Type	Year of Manufacture	Fuel Efficiency (gal/mile)[1]	Annual Miles[2]	Annual Fuel Consumption (gal)
Pickup Truck	Gasoline	2018	15.0	6,000	400
Minivan	Gasoline	2013	21.0	6,000	286
SUV	Gasoline	2016	21.0	6,000	286
Pickup Truck	Gasoline	2017	16.0	1,000	63
Pickup Truck	Gasoline	2012	18	1,000	56
				Sum	1,089

[1]As reported by UMR/SSLP

[2]Estimate of annual miles internal to the Facility, as reported by UMR/SSLP

The Schluter Facility also operates propane powered forklifts in the warehouse, and forklift operations are assumed to be proportional to the production growth rate. To quantify forklift propane emissions fuel use has been summarized below. Actual fuel use has been calculated using fuel receipts from 2022 and have been increased by UMR's projected annual growth rate of 15%, to 2027 when the KB4 Facility will be

operational. Once KB4 is complete and anticipated to be fully operational in 2027, approximately half of the forklifts will be transferred from the Schluter Facility to the KB4 Facility.

Aside from forklifts, off-road vehicle use is not anticipated to increase as a result of the permit consolidation or the completion of the KB4 Facility.

Off-Road Forklift -Propane Consumption[1]	
Building/Operation	Max 12-Mo Rolling Total Gallons
Main Warehouse	20846
R&D Lab[2]	207
Thinset	10777
UMS	8309
Total	**40,139**

[1]Based on purchases from April 2019 to March 2022, factored up 15% to 2027

[2]Annual average based on 36 months of data, factored up 15%

On-road emission sources will consist of light-duty gasoline fired personal vehicles associated with the combined Facilities' staff, and heavy truck traffic associated with material delivery and manufactured final products. The applicant has no legal authority to mandate specific truck routes for external trucking companies, nor can they mandate that employees and third parties use specific roads offsite without exposing the company to liability. However, in the interest of cooperation with DEC, and to provide a conservative assessment, this Mobile Emissions Addendum has assumed that all traffic associated with the Schluter Facility and KB4 Facility will travel along Irish Settlement Road and Pleasant Ridge Road to connect to NYS Route 22. For additional details on the assessed corridor, please see Figure 2: *Local Truck Delivery and Return Route Map*. The following tables provide an inventory of estimated on-road mobile emission sources, fuel type, assumed year of manufacture, estimated fuel efficiency, annual road miles, and estimated annual fuel consumption.

On-Road - Estimated Annual Fuel Consumption						
Type	Annual Trips	Fuel Type	Year of Manufacture	Fuel Efficiency (gal/mile)[8]	Annual Road Miles[9]	Annual Fuel Consumption (gal)
Employee Vehicles[1]	367,120	Gasoline	2010 [5]	25.0	1,284,920	51,397
Fleet Vehicles[2]	910	Gasoline	2018 [6]	23.4	3,185	136
Box Truck 1[3]	2,080	Diesel	2016	19.0	7,280	383
Box Truck 2[3]	2,080	Diesel	2023	19.0	7,280	383
Heavy Truck[4]	33,572	Diesel	2007 [7]	6.0	117,502	19,584
					Sum, Gasoline	51,533
					Sum, Diesel	20,350

[1]Based on 586 M-F shift workers, 90 M-F office staff, and 75 2-day/week workers. As reported by UMR/SSLP.

[2]As reported by UMR/SSLIP, assumes 1/2 of company fleet is in use per day (M-F) and that each vehicle makes 1 round trip per use day.

[3]Company owned, estimated based on 8-round trips per day, M-F, 260 days per year

[4]As reported by UMR/SSLP, consists of vendors and outgoing product.

[5]Based on the average age of vehicles as published in *2022 EPA Automotive Trends Report* by USDOT

[6]Average year of manufacture for company fleet.

[7]To be conservative, the vehicle year with the least favorable emissions factor has been selected

[8]Passenger car fuel efficiency is national average for light duty vehicles in 2021 per USDOT. Haul truck fuel efficiency is average for vehicle class.

[9]Based on 3.5-mile (round trip) corridor along Irish Settlement Road and Pleasant Ridge Road.

As previously described in this report, in the NOIA dated May 23, 2024, DEC requested that UMR estimate the increase in truck traffic since the approval of UMR's ASF Permit, as well as estimate increases that are anticipated due to the KB4 Facility. While the manufacturing areas that consist of the Schluter Facility are the subject of a new Title V Air Permit Application, truck traffic associated with the Schluter Facility is an existing condition and will not increase as part of the permitting consolidation. Nevertheless, to satisfy the DEC comment, UMR investigated historic truck traffic for the Schluter Facility. Schluter Facility truck traffic records for 2019 (the year of permit issuance) are not available. Truck traffic records from 2021 indicate a total of approximately 19,829 annual round trips with 1,255 attributed to UMR, 3,514 round trips associated with air-permit exempt Thinset operations, and 15,060 round trips attributed to unpermitted SSLP and UMS operations. Current (2023) truck traffic is estimated at approximately 32,379 annual round truck trips; however, this includes traffic associated with a separate facility operated by SSF Production LLC (SSF) under a separate ASF Permit. The following table summarizes 2021, current (2023), and projected 2027 on-road Facility related traffic.

On-Road Facility Traffic Summary (Round-Trips Per Year)			
Vehicle type	2027 UMR and KB4	Current (2023) UMR and SSLP	2021 UMR and SSLP
Employee Vehicles	367,120	342,160	342,160
Heavy Truck	33,572	32,379	19,829

Traffic figures available for 2023 do not differentiate between UMR, UMS, and SSF operations, and therefore overstate combined facility totals versus 2021. 2021 traffic volumes do not account for SSF-associated traffic volumes and therefore cannot be directly compared to 2023 or projected 2027 traffic volumes. However, in 2023, approximately 7,028 truck trips were associated with UMR, UMS and SSF operations, 6,526 with the exempt Thinset operation, and 18,825 with SSLP operations.

After KB4's completion, traffic from the combined facilities will increase from the 2023 facility total of 32,379 annual round truck trips to a projected 33,572 annual round truck trips in 2027. This volume represents an increase of 1,193 truck round trips from the Schluter Facility's current truck traffic.

Schluter Facility employment and employee traffic for 2021 and 2023 did not vary significantly and is estimated at 342,160 employee vehicle trips. After the KB4 Facility is constructed and operational in 2027, employee traffic is anticipated to be 367,120 employee vehicle trips per year.

C. GREENHOUSE GAS EMISSIONS

After inventories of off-road and on-road mobile emissions sources were completed, direct GHG emissions were calculated through use of USEPA's *Emission Factors for Greenhouse Gas Inventory 2023 Edition*. The following tables summarize the calculated direct GHG emissions for on- and off-road mobile emissions sources.

Off-Road Equipment - Direct Greenhouse Gas Emissions - Diesel							
Equipment	Pollutant	Diesel (gal)	Emission Factor (g/gal)[1]	Emissions(gram)	Emissions(ton)	CO2e Factor[2]	CO2e (ton/yr)
Utility Vehicle	CO2	60	10,210	612,600	0.6753	1	0.68
	CH4	60	0.67	40	0.00004	84	0.004
	N2O	60	0.49	29	0.00003	264	0.01
						Sum	0.69

[1]EPA Emissions Factors for Greenhouse Gas Inventories, last modified September 12, 2023. Factor for CH4 and N2O are for diesel powered lawn equipment.
[2]6 CRR-NY496.5

Gasoline Powered Off-Road - Direct Greenhouse Gas Emissions							
Equipment	Pollutant	Gasoline (gal)	Emission Factor (g/gal)[1]	Emissions(gram)	Emissions(ton)	CO2e Factor[2]	CO2e (ton/yr)
Pickup Truck 1	CO2	400	8,310	3,324,000	3.66	1	3.66
	CH4	400	0.0081	3	3.57E-06	84	3.00E-04
	N2O	400	0.0015	1	6.61E-07	264	1.75E-04
Minivan	CO2	286	8,310	2,374,286	3	1	2.62
	CH4	286	0.0095	3	2.99E-06	84	2.51E-04
	N2O	286	0.0035	1	1.10E-06	264	2.91E-04
SUV	CO2	286	8,310	2,374,286	3	1	2.62
	CH4	286	0.0091	3	2.87E-06	84	2.41E-04
	N2O	286	0.0029	1	9.13E-07	264	2.41E-04
Pickup Truck 2	CO2	63	8,310	519,375	1	1	0.57
	CH4	63	0.0084	1	5.79E-07	84	4.86E-05
	N2O	63	0.0018	0	1.24E-07	264	3.27E-05
Pickup Truck 3	CO2	56	8,310	461,667	1	1	0.51
	CH4	56	0.0096	1	5.88E-07	84	4.94E-05
	N2O	56	0.0033	0	2.02E-07	264	5.34E-05
						Sum	9.98

[1]EPA Emissions Factors for Greenhouse Gas Inventories, last modified September 12, 2023.
[2]6 CRR-NY496.5

Propane Powered Off-Road - Direct Greenhouse Gas Emissions							
Equipment	Pollutant	Fuel Consumption (gal)	nission Factor lb/10^3 gallo	Emissions (lb)	Emissions (ton)	CO2e Factor[2]	CO2e (ton/yr)
Forklifts	CO2	40,138	12,610	506,139	253	1	253.07
	CH4	40,138	0.595	23.88	0.0119	84	1.003
	N2O	40,138	0.11	4.42	0.0022	264	0.58
						Sum	254.66

[1]EPA Emissions Factors for Greenhouse Gas Inventories, last modified September 12, 2023.
[2]6 CRR-NY496.5

Off-Road Total	**265.32**

Direct GHG CO_2e emissions from off-road diesel and gasoline powered mobile emission sources will not increase over existing levels introduced in the first submission of the mobile emissions addendum as the off-road vehicle inventory will remain unchanged with the introduction of the KB4 Facility. The projected increase in propane use, due to forecasted production growth within the Schluter Facility and associated increases in propane-powered forklift utilization, will result in an increase in off-road mobile source CO_2e emissions from 145.91 tons/yr to 265.32 tons/yr in 2027.

Gasoline Powered On-Road - Direct Greenhouse Gas Emissions							
Equipment	Pollutant	Gasoline (gal)	Emission Factor (g/gal)[1]	Emissions(gram)	Emissions(ton)	CO2e Factor[2]	CO2e (ton/yr)
Employee Vehicles	CO2	51,397	8,310	427,107,408	471	1	470.80
	CH4	51,397	0.0071	365	4.02E-04	84	3.38E-02
	N2O	51,397	0.0046	236	2.61E-04	264	6.88E-02
Fleet Vehicles	CO2	136	8,310	1,131,083	1	1	1.25
	CH4	136	0.0081	1	1.22E-06	84	1.02E-04
	N2O	136	0.0015	0	2.25E-07	264	5.94E-05
						Sum	472.15

[1]EPA Emissions Factors for Greenhouse Gas Inventories, last modified September 12, 2023.
[2]6 CRR-NY496.5

Diesel Powered On-Road - Direct Greenhouse Gas Emissions							
Equipment	Pollutant	Diesel (gal)	Emission Factor (g/gal)[1]	Emissions(gram)	Emissions(ton)	CO2e Factor[2]	CO2e (ton/yr)
Box Truck 1	CO2	383	10,210	3,912,042	4	1	4.31
	CH4	383	0.0095	4	4.01E-06	84	3.37E-04
	N2O	383	0.0431	17	1.82E-05	264	4.81E-03
Box Truck 2	CO2	383	10,210	3,912,042	4	1	4.31
	CH4	383	0.0095	4	4.01E-06	84	3.37E-04
	N2O	383	0.0431	17	1.82E-05	264	4.81E-03
Heavy Truck	CO2	19,584	10,210	199,949,237	220	1	220.40
	CH4	19,584	0.0095	186	2.05E-04	84	1.72E-02
	N2O	19,584	0.0431	844	9.30E-04	264	2.46E-01
						Sum	229.30

[1]EPA Emissions Factors for Greenhouse Gas Inventories, last modified September 12, 2023
[2]6 CRR-NY496.5

On-Road Total	701.45

The transfer of SSLP's extruded polystyrene (XPS) operations from the Schluter Facility to the proposed KB4 Facility will increase SSLP's XPS production capacity. As a result of the KB4 Facility's completion and full operation, on-road heavy truck traffic is expected to grow for shipping and receiving across the local road network from the current 32,379 annual trips to 33,572 annual trips. The proposed KB4 Facility will also increase employment, thereby, employee vehicle trips are projected to rise from 342,160 to 367,120 employee vehicle trips. The increase in total vehicle trips in response to the addition of the KB4 Facility will increase CO_2e emissions from on-road sources by approximately 6% from 661.59 tons/yr to 701.45 tons/yr.

On-road mobile emission sources (e.g., vehicles) access NYS Route 22 via a county highway (CR-32/Irish Settlement Road), and a local road (Pleasant Ridge Road). Per the publicly available New York State Department of Transportation Traffic Data Viewer, CR-32 alone handles in excess of 1.3 million vehicle trips per year. The addition of the KB4 Facility and the corresponding projected growth in total vehicle trips will lead to an approximate 2% increase in yearly traffic along the route. Due to the minimal projected

increase in traffic, there is no potential for the combined Facilities to disproportionately impact the DAC with regard to traffic.

Consistent with DEC's request in the NOIA dated September 27, 2024, UMR has provided additional GHG emission calculations reflective of the Schluter Facility's current (2023) operations and 2021 operations to demonstrate the project's effect on the Facility's GHG emissions from mobile sources.

GHG Emissions Summary			
GHG Pollutant	2027 UMR and KB4 (tons)	Current (2023) UMR and SSLP (tons)	2021 UMR and SSLP (tons)
CO_2	964.80	816.58	715.32
CH_4	0.013	0.007	0.006
N_2O	0.003	0.002	0.002
CO_2e	966.78	817.86	716.38

D. CO-POLLUTANT EMISSIONS

In the November 7, 2023 NOIA, DEC requested that co-pollutant emissions be calculated through use of USEPA-published emissions factors and the AFLEET tool. Hazardous air pollutants, or HAPs, are known to cause cancer and other serious health impacts and include 188 specified pollutants identified by a USEPA list. The tool to calculate emissions (the emissions factors) requested by DEC does not include emissions factors for EPA listed HAPs, either en masse or for individual pollutants. In a subsequent May 23, 2024 NOIA, DEC requested that UMR include an analysis of additional compounds that the department specified, notwithstanding that they are not included as "co-pollutants" in the CLCPA. These include volatile organic compounds (VOCs), oxides of nitrogen (NO_x), carbon monoxide (CO), oxides of sulfur (SO_x), and total particulate matter (PM). Notwithstanding the inconsistency with the statutory definition of co-pollutants, these emissions were calculated using the same mileage and fuel assumptions for on- and off-road vehicles used in the above GHG calculations and the EPA's AFLEET Tool. This data has been included in this report to be responsive to DEC's comment and to provide a conservative assessment. Emissions of these additional compounds attributed to propane use from forklifts were calculated utilizing EPA emissions factors and forecasted fuel usage for 2027.

Mobile Co-Pollutant Emissions [1]				
Pollutants	2027 Schluter Facility and KB4 (tpy)	Current Schluter Facility (tpy)	2021 Schluter Facility (tpy)	Air Facility Registration Threshold (tpy)
NO_x	0.87	0.73	0.53	50
CO	5.61	5.19	5.14	50
VOC	0.15	0.13	0.12	25
SO_X	0.004	0.004	0.004	50
PM_{10}	0.07	0.06	0.06	50

[1]Emissions calculations utilize on fuel and mileage values for on-road and off-road calculations used in GHG emissions calculations

[2]All co-pollutants for all sources other than propane are calculated by AFLEET

Consistent with DEC's request, UMR has provided additional emission calculations reflective of the Schluter Facility's current operations and 2021 operations to demonstrate the project's effect on the facility's mobile emissions with respect to the additional compounds requested by DEC. When estimated emissions from 2021 are compared to 2027 projected emission levels of the combined Facilities, project-related NO_x has the greatest apparent emissions increase of the identified pollutants, approximately 0.34 tons, attributable to the projected truck traffic increase of 13,743 truck round trips for the same period, and includes traffic associated with the SSF facility that was not otherwise captured in the 2021 figures. It should be noted that, except for 1,193 trips attributed to the KB4 Facility, all of this "increase" from 2021 is currently existing and is reflective of production increases that have occurred at the Schluter Facility and incorporation of the SSF-associated traffic.

To put emission levels in perspective, UMR has included thresholds for each compound requested by DEC to qualify for an Air Facility Registration (AFR), a ministerial action considered protective of human health. While there are associated increases in individual pollutants, each mobile pollutant emission listed in the table above is approximately an order of magnitude, or greater, below corresponding AFR thresholds, levels presumed to be protective of the environment and human health. Emissions at such low levels will not disproportionately burden the DAC or PEJA. See also the discussion on traffic impacts contained in CLCPA Analysis, section D(h)(iv).

E. GREENHOUSE GAS AND CO-POLLUTANT REDUCTION

In the November 7, 2023 NOIA, DEC requested that the applicant *"Evaluate how estimated GHG and co-pollutants identified above may be reduced within the disadvantaged community."* With respect to mobile emissions, this comment assumes that UMR has the legal authority to bring about reductions in mobile source emissions from privately owned trucks and third-party vehicles, leaving the facility for parts unknown. DEP 24-1 requires emissions reductions strategies when a disproportionate burden may result from GHG or co-pollutants. There will be minimal increases in GHG and co-pollutant emissions resulting from the minor increase of mobile sources associated with the improvements to the Schluter Facility and the construction of the KB4 Facility, which do not present the potential to disproportionately burden disadvantaged communities. Nonetheless, and although UMR is not able to control emissions associated with third-party actors, and emissions created by the project are minimal, the following potential emission reduction actions identified in the DEP 24-1 were assessed:

- Use of electric powered equipment instead of fossil fuel powered equipment, including electric vehicles;
- Use of lower emission technologies;
- Use of alternative process technologies that would reduce or eliminate GHG emissions or co-pollutants;
- Financial mitigation, such as providing funds for GHG or co-pollutant emissions reduction projects in the local DAC;

- Operational mitigation, such as limitations on the amount of fossil fuel combusted at the project or the allowable hours of operation for the project; or request third-party trucks to reduce idling
- Designing truck travel routes that avoid, or minimize impact to, disadvantaged communities;
- Adding electric vehicle charging stations at the facility or in the local disadvantaged community; and
- Physical mitigation, such as the planting and upkeep of trees, green infrastructure, or other means of carbon sequestration.

UMR is exploring possible mitigation measures to implement as a means to address the increases in GHG and co-pollutant emissions. These measures are described below.

Reducing Truck Idling and Facility Vehicle idling

UMR is exploring education options for haul truck drivers and transportation companies in an effort to reduce heavy truck idling while vehicles are present at the facility. This includes suggesting to third-party haulers to adopt idle reducing technologies. According to the US Department of Energy's Alternative Fuel Data Center[1], heavy-duty truck idle reduction technologies include:

- Auxiliary power units cab or bunk heaters;
- Coolant heaters, energy recovery systems;
- Storage air conditioners; and
- Automatic engine stop-start controls.

UMR is investigating installing signage and instructing staff to inform haul truck drivers to turn off vehicles when queuing or waiting to be loaded/ unloaded to reduce heavy truck idling onsite. While not directly quantifiable, these efforts have the potential to greatly reduce mobile emissions related GHGs and co-pollutants and that can be attributed to truck idling.

UMR has also pursued site specific operational changes to reduce idling emissions. Currently the delivery of the sand and cement to the exempt Thinset facility uses truck mounted blowers to transfer the material from the tanker trucks into the silos. During this transfer the off-loading truck is required to run at idle to power the blower. SSLP has begun procurement of non-truck mounted material blowers which will eliminate haul truck idle time equivalent to 6,845 hours per year.

Installing EV Charging Station

While UMR has no control over personal vehicles that its employees drive, UMR will install four (4) EV dual charging stations on-site to encourage EV adoption. The increased presence of EV charging stations brought on by UMR's installation may make it easier for EV owners to drive to work and could encourage

[1]U.S. Department of Energy - Energy Efficiency and Renewable Energy *Alternative Fuels Data Center: https://afdc.energy.gov/conserve/idle-reduction-heavy#:~:text=Coolant%20heaters,Automatic%20engine%20stop%2Dstart%20controls*

employees and community members to switch to electric vehicles, since a lack of accessible chargers is often cited as barriers to EV adoption. If EV adoption for employees and residents within the DAC keeps pace with projections for US EV market share (11% -26% by 2050 based on US Energy Information Administration estimates from *Incentives and lower costs drive electric vehicle adoption in our Annual Energy Outlook from May 15,2023*), it may result in a significant GHG and co-pollutant emissions reduction. Should the DEC accept this as mitigation, UMR is willing to accept a permit condition requiring the installation and maintenance of four (4) dual EV charging stations at the facility.

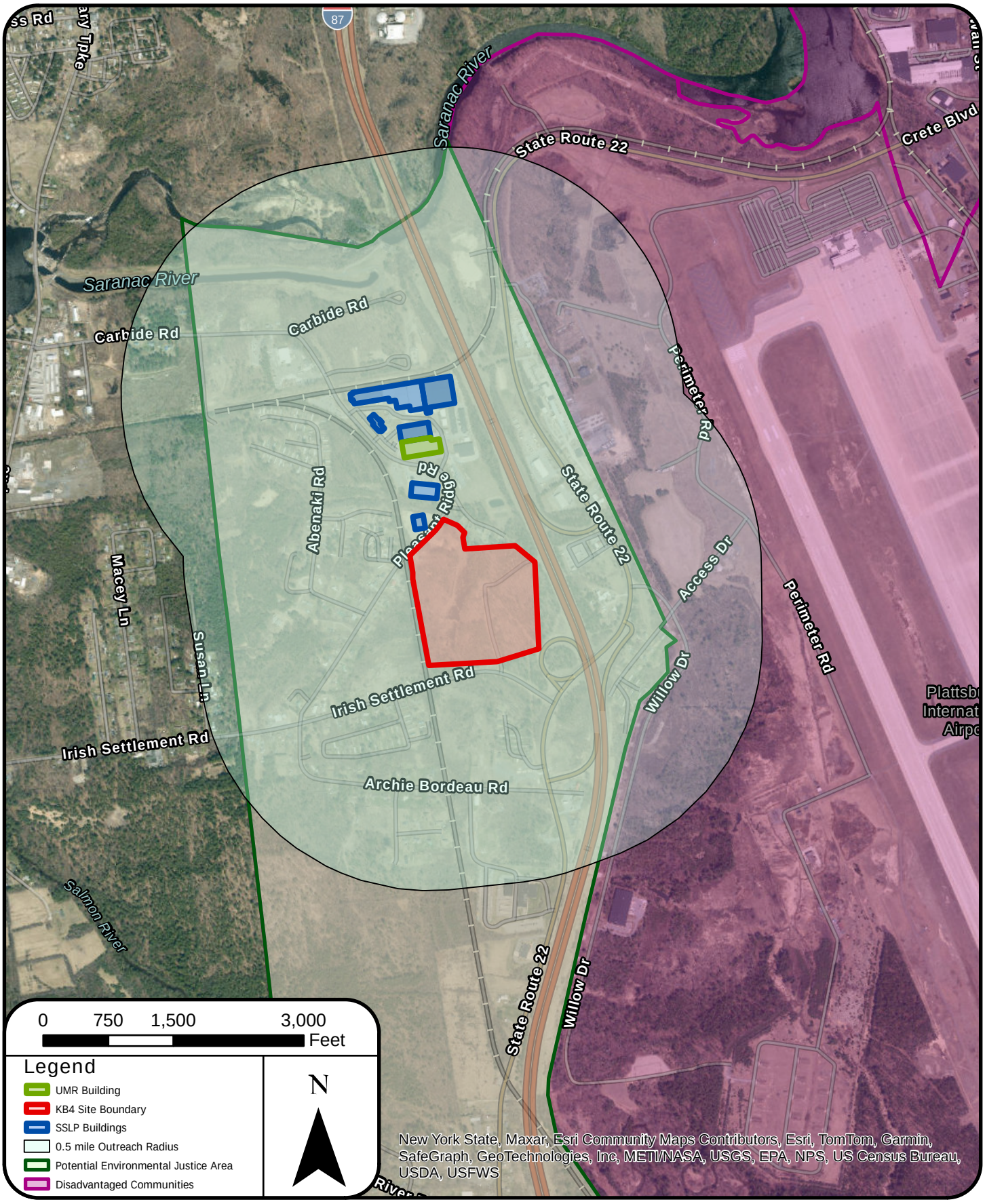
Tree Planting

Tree planting on-site where feasible can provide additional carbon sequestration, improve local air quality and improve visual aesthetics. This mitigation option would involve development of a Tree Planting and Maintenance Plan, which will include details on spacing, number and species of existing and proposed trees, survivability, etc., by a qualified professional. In this report UMR will detail a list of trees and shrubs to be planted as part of the landscaping plan at the KB4 Facility. Any potential trees or vegetation will only be planted in areas that will not interfere with safe vehicle movement sight lines at the facility entrances to ensure traffic can safely enter and exit both facilities. Trees that will be planted include; Acer rubrum "October Glory" (40 trees), Quercus palustris, "Pin Oak" (12 trees), Picea abies, "Norway Spruce" (28 trees), Tsuga canadensis, "Eastern Hemlock" (8 trees). Shrubs that will be planted include; Juniperus chinensis 'Pfitzeriana Aurea' (80 shrubs), and Taxus x media 'Tauntonii' (25 shrubs). KB4's planned tree and shrub plantings represent a 340% and 18% increase over the Town of Plattsburgh's code requirements respectively.

Per the US Forest Service[2], a mature tree can sequester 48 lbs. of CO_2 per year. With a total of 88 trees planted over approximately 4.65 acres, there is projected to be approximately 4,224 lbs of CO_2 sequestered each year once trees hit full maturity. Trees and shrubs planted at the KB4 Facility will aid in reduction of other identified pollutants, such as SO_2, NO_2, and CO, produced by mobile emission sources leaving the facility by absorbing the compounds in their leaves. Trees and shrubs can also serve to temporarily "catch" fine particulate emissions, such as PM 2.5, by physically intercepting fine particulate matter that will coat the leaves of vegetation. By pursuing a proactive landscaping plan that exceeds Town code requirements, the facility will reduce GHG and co-pollutant emissions produced by mobile emissions sources and thus improve local air quality. Should the DEC accept this as mitigation, UMR is willing to accept a permit condition requiring the implementation of a Tree Planting and Maintenance Plan for the proposed tree and shrub plantings.

[2] US ForTrees Are Climate Change, Carbon Storage Heroes: *https://www.fs.usda.gov/about-agency/features/trees-are-climate-change-carbon-storage-heroes*

FIGURES



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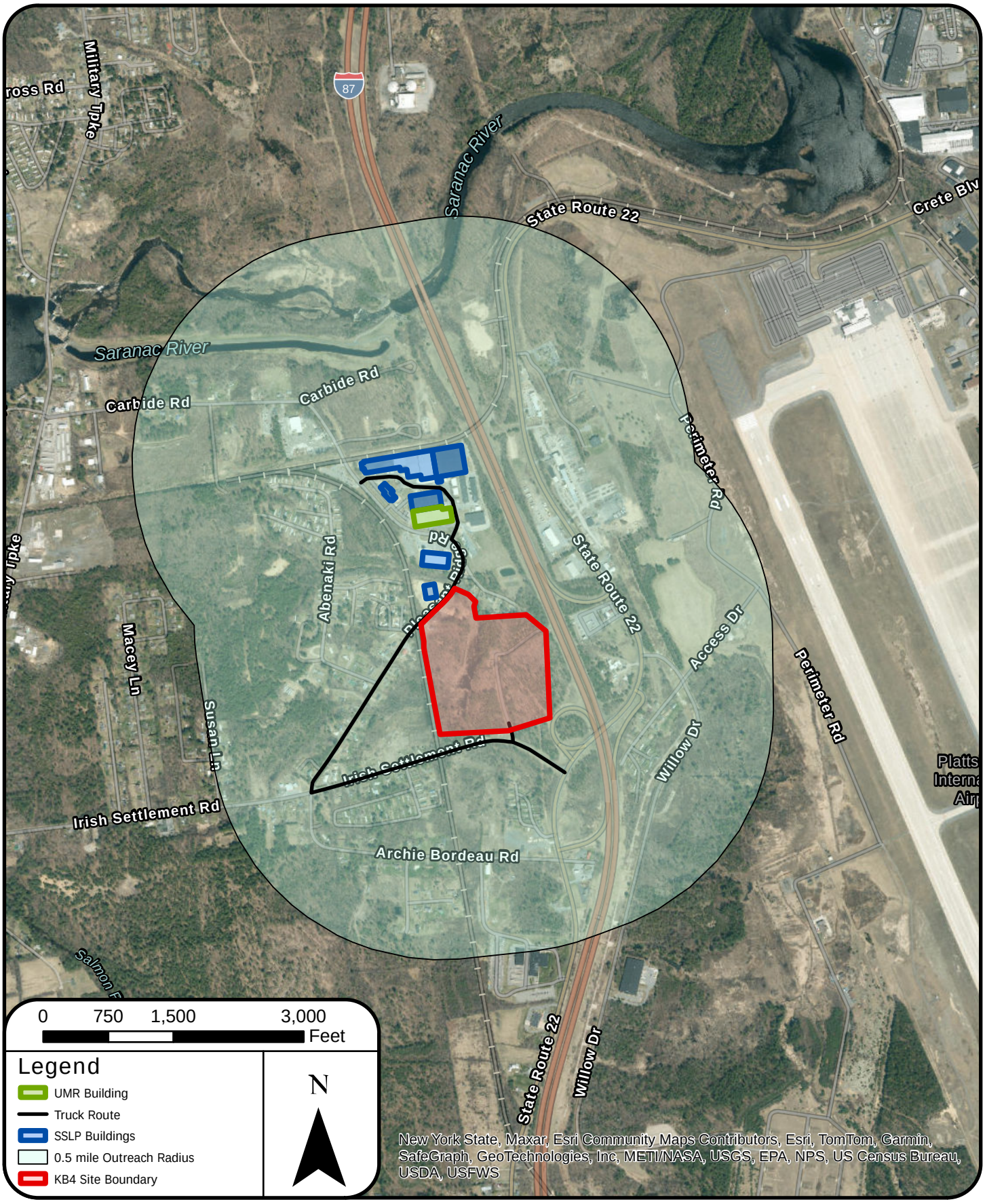
DAC AND PEJA MAP

UMR BOARDS PRODUCTION, LLC

MOBILE EMISSIONS ADDENDUM

TOWN OF PLATTSBURGH — CLINTON COUNTY, NY

PROJ. NO: 17-S0125N-001	DATE: 07/29/2024	SCALE: 1 IN = 1,500 FT	DWG NO. -	FIGURE: 1



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LOCAL TRUCK DELIVERY AND RETURN ROUTE MAP

UMR BOARDS PRODUCTION, LLC

MOBILE EMISSIONS ADDENDUM

TOWN OF PLATTSBURGH — CLINTON COUNTY, NY

PROJ. NO: 17-S0125N-001	DATE: 07/29/2024	SCALE: 1 IN = 1,500 FT	DWG NO. -	FIGURE: 2

ATTACHMENT I

EMISSION SOURCE LIST

EMISSION SOURCE LIST

Source type	Equipment Category	Description/ Model #	Manufacturer	Capacity	Capacity Unit	Fuel Type
Mobile	Forklift	8FGC35U	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	7FGCU25	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	50-8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCSU20	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	7FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGU25	TOYOTA	--	--	Propane
	Forklift	FG25T-16	KOMATSU	--	--	Propane
	Forklift	BFGC35U	TOYOTA	--	--	Propane
	Forklift	8FGCU32	Toyota	--	--	Propane
	Forklift	C30L	Clark	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	8FGCU32	TOYOTA	--	--	Propane
	Forklift	50-8FGCU32	Crown	--	--	Propane
	ATV	KUBOTA RTV-X1100C	KUBOTA	3 Cyln.	--	Diesel
	Light duty vehicle	TOYOTA TUNDRA	TOYOTA	5.7L, V8	--	Gasoline
	Light duty vehicle	CHRYSLER TOWN & COUNTRY (WHITE)	CHRYSLER	3.6L, V6	--	Gasoline
	Light duty vehicle	DODGE DURANGO	DODGE	3.6L, V6	--	Gasoline
	Light duty vehicle	FORD EXPLORER	FORD	2.3L, V4	--	Gasoline
	Light duty vehicle	TOYOTA HIGHLANDER	TOYOTA	2.7L, V4	--	Gasoline
	Light duty vehicle	CHEVY EQUINOX	CHEVY	1.5L, V4	--	Gasoline
	Light duty vehicle	FORD EXPLORER	FORD	3.5L, V6	--	Gasoline
	Light duty vehicle	CHEVY EQUINOX	CHEVY	1.5L, V4	--	Gasoline
	Light duty vehicle	HONDA ODYSSEY	HONDA	3.5L, V6	--	Gasoline
	Light duty vehicle	CHRYSLER PACIFICA	CHRYSLER	3.6L, V6	--	Gasoline
	Light duty vehicle	RAM 1500	RAM	5.7L, V8	--	Gasoline
	Light duty vehicle	TOYOTA TACOMA (GREEN)	TOYOTA	4.0L, V6	--	Gasoline
	Box truck	INTERNATIONAL BOX TRUCK	INTERNATIONAL	6.7 L, V6	--	Diesel
	Box truck	FREIGHT BOX TRUCK	FREIGHT	6.7L, V6	--	Diesel