

AIR COMPLIANCE ANALYSIS SUMMARY SHEET

COMPANY/FACILITY: RDA, LLC
LOCATION (COUNTY): Andrews (Williamsburg) **DATE:** 10/20/2017
PERMIT NUMBER: 2320-0049-CA **REVIEWED BY:** TOP

REQUEST: Y CONSTRUCTION PERMIT STATE PERMIT
 OPERATING PERMIT - NEW CONDITIONAL MAJOR
 OPERATING PERMIT - RENEWAL GENERAL CM
 PERMIT - MODIFICATION TITLE V PERMIT
 AIR COMPLIANCE DEMO PSD MAJOR

ANALYSIS: Y AMBIENT AIR QUALITY STANDARDS PSD INCREMENT
 TOXIC AIR POLLUTANTS DE MINIMIS
 Y EXEMPTION DEFERRAL

OTHER: EXPEDITED N COLLOCATED (Y or N)

PROJECT DESCRIPTION: RDA proposes to locate a crushed stone mine and processing facility near Andrews, SC capable of crushing 500 tons per hour from the primary crusher.

SUMMARY OF ANALYSIS & RESULTS: GEL Engineering submitted the application on behalf of the facility. Facility is requesting limits to below applicable major source levels of 100 TPY, so this will be a synthetic minor construction permit. The facility will use wet suppression to maintain these levels. Standard 2: The only pollutants emitted are PM₁₀ and PM_{2.5}. According to controlled emissions, PM_{2.5} is below exemption levels for all processes and PM₁₀ is exempt for 3 of the 4 process groups as defined below. Facility modeled PM_{2.5} voluntarily. AERMOD was performed for PM₁₀ and PM_{2.5}. BAQ results are reported.

Standard 7: The MSBD for Williamsburg county has not been set for any pollutants. Therefore, no further analysis for this standard is required.

Standard 8: No toxic air pollutants are being emitted from this facility. Therefore, no further analysis for this standard is required.

This is an initial modeling summary.

STANDARD NO. 2 - AMBIENT AIR QUALITY STANDARDS ANALYSIS							
Pollutant	Averaging Time	Basis	Maximum Concentration (µg/m³)	Background Concentration (µg/m³)	Total (µg/m³)	Standard (µg/m³)	% of Standard
PM ₁₀	24 Hour	AERMOD	85.3 ⁽¹⁾	49.0	134	150	89
PM _{2.5}	24 Hour	AERMOD	13.8 ⁽²⁾	18.0	32	35	91
	Annual	AERMOD	1.8 ⁽³⁾	8.4	10	12	83
1) The sixth-high over five years of met data using the multi-year option.							
2) The five-year average of the first-high concentrations.							
3) The five-year average of the maximum annual concentrations.							

BACKGROUND MONITORING DATA ($\mu\text{g}/\text{m}^3$)									
Pollutant	Site Name	County	Year	1-Hr	3-Hr	8-Hr	24-Hr	3-Mo	Annual
PM₁₀	Jenkins Avenue Fire Station	Charleston	11-13				49.0		
PM_{2.5}	Charleston Public Works	Charleston	11-13				18.0		8.4

PM10 24-hr is the fourth-high over three-year period.
The concentration listed for all other pollutants and averaging periods is the 3 year design value.

STANDARD NO. 2 - AMBIENT AIR QUALITY STANDARDS EMISSION RATES (LBS/HR)						
Emission Point ID	PM₁₀	PM_{2.5}	SO₂	NO_x	CO	Lead
V1	0.27	0.05	--	--	--	--
V2A	0.023	0.007	--	--	--	--
V2B	0.023	0.007	--	--	--	--
V3	0.023	0.007	--	--	--	--
V4	0.37	0.025	--	--	--	--
V5	0.007	0.002	--	--	--	--
V6	0.007	0.002	--	--	--	--
V7	0.007	0.002	--	--	--	--
V8	0.018	0.005	--	--	--	--
V9	0.018	0.005	--	--	--	--
V10	0.018	0.005	--	--	--	--
V11	0.018	0.005	--	--	--	--
V12	0.018	0.005	--	--	--	--
V13	0.296	0.02	--	--	--	--
V14	0.002	0.001	--	--	--	--
V15	0.002	0.001	--	--	--	--
V16	0.002	0.001	--	--	--	--
V17	0.002	0.001	--	--	--	--
V18	0.002	0.0007	--	--	--	--
V19	0.002	0.0007	--	--	--	--
V20	0.216	0.04	--	--	--	--
V21	0.018	0.005	--	--	--	--
V22	0.018	0.005	--	--	--	--
V23	0.018	0.005	--	--	--	--
V24	0.296	0.02	--	--	--	--
V25	0.003	0.001	--	--	--	--
V26	0.003	0.001	--	--	--	--
V27	0.003	0.001	--	--	--	--
V28	0.003	0.001	--	--	--	--
V29	0.003	0.001	--	--	--	--
V30	0.003	0.001	--	--	--	--
V31	0.216	0.04	--	--	--	--
V32	0.013	0.0038	--	--	--	--
V33	0.013	0.0038	--	--	--	--
V34	0.013	0.0038	--	--	--	--

STANDARD NO. 2 - AMBIENT AIR QUALITY STANDARDS EMISSION RATES (LBS/HR)						
Emission Point ID	PM₁₀	PM_{2.5}	SO₂	NO_x	CO	Lead
V35	0.638	0.097	--	--	--	--
V36	0.004	0.001	--	--	--	--
V37	0.004	0.001	--	--	--	--
V38	0.004	0.0012	--	--	--	--
V39	0.004	0.001	--	--	--	--
V40	0.004	0.001	--	--	--	--
V41	0.004	0.001	--	--	--	--
V42	0.003	0.001	--	--	--	--
V43	0.003	0.001	--	--	--	--
V44	0.003	0.001	--	--	--	--
V45	0.05	0.008	--	--	--	--
V46	0.04	0.006	--	--	--	--
V47	0.008	0.001	--	--	--	--
FACILITY TOTAL	2.736	0.406	--	--	--	--

STANDARD NO. 2 - EXEMPTED AMBIENT AIR QUALITY STANDARDS EMISSION RATES (LBS/HR)						
Emission Point ID	PM₁₀	PM_{2.5}	SO₂	NO_x	CO	Lead
Customer Roads	0.58	0.06	--	--	--	--
Haul Roads	1.04	0.10	--	--	--	--
Material Storage	0.32	0.05	--	--	--	--
FACILITY TOTAL	1.94	0.21	--	--	--	--

EMISSION POINT DESCRIPTIVE INFORMATION

Emission Point ID	Source Identification & Description	Date Installed (Modified)	Status	Other
V1	Crusher No. 1 (Primary-CR1)			
V2A	Transfer Point No. 1a (CR1 to C1a)			
V2B	Transfer Point No. 1b (C1a to C1b)			
V3	Transfer Point No. 2 (C1 to S1)			
V4	Screening Station No. 1 (S1)			
V5	Transfer Point No. 3 (S1 to C2)			
V6	Transfer Point No. 4 (C2 to C3)			
V7	Transfer Point No. 5 (C3 to STP1)			
V8	Transfer Point No. 6 (S1 to C4)			
V9	Transfer Point No. 7 (C4 to STP2)			
V10	Transfer Point No. 8 (STP2 to C5)			
V11	Transfer Point No. 9 (C5 to C6)			
V12	Transfer Point No. 10 (C6 to S2)			
V13	Screening Station No. 2 (S2)			
V14	Transfer Point No. 11 (S2 to C7)			
V15	Transfer Point No. 12 (C7 to C8)			
V16	Transfer Point No. 13 (C8 to STP3)			
V17	Transfer Point No. 14 (S2 to C9)			
V18	Transfer Point No. 15 (C9 to C10)			
V19	Transfer Point No. 16 (C10 to STP4)			
V20	Crusher No. 2 (CR2)			
V21	Transfer Point No. 17 (CR2 to C11)			
V22	Transfer Point No. 18 (C11 to C12)			
V23	Transfer Point No. 19 (C12 to S3)			
V24	Screening Station No. 3 (S3)			
V25	Transfer Point No. 20 (S3 to C13)			
V26	Transfer Point No. 21 (C13 to C14)			
V27	Transfer Point No. 22 (C14 to STP5)			
V28	Transfer Point No. 23 (S3 to C15)			
V29	Transfer Point No. 24 (C15 to C16)			

EMISSION POINT DESCRIPTIVE INFORMATION				
Emission Point ID	Source Identification & Description	Date Installed (Modified)	Status	Other
V30	Transfer Point No. 25 (C16 to STP6)			
V31	Crusher No. 3 (CR3)			
V32	Transfer Point No. 26 (CR3 to C17)			
V33	Transfer Point No. 27 (C17 to C18)			
V34	Transfer Point No. 28 (C18 to S4)			
V35	Screening Station No. 4 (S4)			
V36	Transfer Point No. 29 (S4 to C19)			
V37	Transfer Point No. 30 (C19 to C20)			
V38	Transfer Point No. 31 (C20 to STP7)			
V39	Transfer Point No. 32 (S4 to C21)			
V40	Transfer Point No. 33 (C21 to C22)			
V41	Transfer Point No. 34 (C22 to STP8)			
V42	Transfer Point No. 35 (S4 to C23)			
V43	Transfer Point No. 36 (C23 to C24)			
V44	Transfer Point No. 37 (C24 to STP9)			
V45	Final Product Truck Loading (Tload)			
V46	Drilling inside the quarry			
V47	Truck Loading at the Quarry			

EXEMPTIONS/DEFERRALS	
Source Identification	Exemption/Deferral Basis
Mining & Material Handling (PM _{2.5} only), Material Storage, Haul Roads, Customer Roads	Standards 2 and 7 – Sources with controlled or uncontrolled emission rates as shown below: <ul style="list-style-type: none"> • PM₁₀ - Less than 1.14 pounds per hour • PM_{2.5} - Less than 1.14 pounds per hour

VOLUME SOURCE PARAMETERS							
Emission Point ID	Date Last Modeled	Location (UTM)		Source Release Height (ft)	Horizontal Dimension σ_y (ft)	Vertical Dimension σ_z (ft)	Distance To Property Line (ft)
		East (M)	North (M)				
V1	10//20/2017	625858	3705198	12	1.39	1.86	(1)
V2A	10//20/2017	625858	3705198	12.5	0.81	3.49	(1)

VOLUME SOURCE PARAMETERS

Emission Point ID	Date Last Modeled	Location (UTM)		Source Release Height (ft)	Horizontal Dimension σ_Y (ft)	Vertical Dimension σ_z (ft)	Distance To Property Line (ft)
		East (M)	North (M)				
V2B	10//20/2017	625861	3705184	12.5	0.7	3.49	(1)
V3	10//20/2017	625962	3704787	17	0.7	0.93	(1)
V4	10//20/2017	625962	3704787	12.5	2.42	1.16	(1)
V5	10//20/2017	625962	3704787	12.5	0.7	1.16	(1)
V6	10//20/2017	625965	3704787	8	0.93	0.93	(1)
V7	10//20/2017	625995	3704786	22.5	0.7	3.49	(1)
V8	10//20/2017	625962	3704787	6	0.81	0.93	(1)
V9	10//20/2017	625961	3704760	22.5	0.81	3.49	(1)
V10	10//20/2017	625961	3704755	6	0.81	0.93	(1)
V11	10//20/2017	625961	3704733	6	0.81	0.93	(1)
V12	10//20/2017	625961	3704709	19.25	0.7	1.28	(1)
V13	10//20/2017	625961	3704709	13.25	3.17	1.51	(1)
V14	10//20/2017	625961	3704709	8	0.7	0.93	(1)
V15	10//20/2017	625964	3704709	8	0.7	0.93	(1)
V16	10//20/2017	625996	3704708	22.5	0.7	3.49	(1)
V17	10//20/2017	625961	3704709	6	0.7	0.93	(1)
V18	10//20/2017	625957	3704709	6	0.81	0.93	(1)
V19	10//20/2017	625927	3704709	22.5	0.7	3.49	(1)
V20	10//20/2017	625961	3704705	13	1.28	1.4	(1)
V21	10//20/2017	625961	3704705	7.5	0.81	1.16	(1)
V22	10//20/2017	625961	3704704	6	0.81	0.93	(1)
V23	10//20/2017	625961	3704672	19	0.7	1.4	(1)
V24	10//20/2017	625961	3704672	12.5	2.42	1.16	(1)
V25	10//20/2017	625961	3704672	8	0.7	0.93	(1)
V26	10//20/2017	625964	3704672	6	1.16	0.93	(1)
V27	10//20/2017	625996	3704672	22.5	0.58	3.49	(1)
V28	10//20/2017	625961	3704672	8	1.16	0.93	(1)
V29	10//20/2017	625957	3704672	6	1.16	0.93	(1)
V30	10//20/2017	625926	3704672	22.5	0.58	3.49	(1)
V31	10//20/2017	625961	3704670	8.5	1.28	1.16	(1)
V32	10//20/2017	625961	3704668	7.5	0.7	1.16	(1)
V33	10//20/2017	625961	3704668	6	0.7	0.93	(1)

VOLUME SOURCE PARAMETERS							
Emission Point ID	Date Last Modeled	Location (UTM)		Source Release Height (ft)	Horizontal Dimension σ_y (ft)	Vertical Dimension σ_z (ft)	Distance To Property Line (ft)
		East (M)	North (M)				
V34	10//20/2017	625961	3704635	19	0.7	1.4	(1)
V35	10//20/2017	625961	3704635	12.5	2.67	1.16	(1)
V36	10//20/2017	625961	3704635	8	0.93	0.93	(1)
V37	10//20/2017	625964	3704635	6	0.93	0.93	(1)
V38	10//20/2017	625996	3704635	22.5	0.58	3.49	(1)
V39	10//20/2017	625961	3704635	6	0.93	0.93	(1)
V40	10//20/2017	625957	3704635	6	0.93	0.93	(1)
V41	10//20/2017	625926	3704635	22.5	0.58	3.49	(1)
V42	10//20/2017	625961	3704635	8	0.93	0.93	(1)
V43	10//20/2017	625960	3704632	6	0.93	0.93	(1)
V44	10//20/2017	625982	3704616	22.5	0.58	3.49	(1)
V45	10//20/2017	625925	3704624	5	1.86	2.33	(1)
V46	10//20/2017	626028	3705606	1.5	1.86	0.7	(1)
V47	10//20/2017	626022	3705602	5	1.86	2.33	(1)
1) See model files							

AERMOD/AERMAP SPECIFICATIONS TABLE											
MET DATA	CHS-CHS 2002-2006 [Surface Air = Charleston, SC; 46 ft MSL; Upper Air = Charleston, SC]										
NED TERRAIN FILES	Georgetown, SC Williamsburg, SC										
PROJECTION DATUM	NAD27	<input type="checkbox"/>		NAD83	<input checked="" type="checkbox"/>		WGS-84	<input type="checkbox"/>		NWS-84	<input type="checkbox"/>
RURAL or URBAN?	Rural	<input checked="" type="checkbox"/>		Urban	<input type="checkbox"/>						
ELEVATIONS EXTRACTED	Buildings	<input type="checkbox"/>		Sources	<input checked="" type="checkbox"/>		Tanks	<input type="checkbox"/>		Receptors	<input checked="" type="checkbox"/>

HISTORY

Date	By	Reason	Description
10/20/2017	TOP	C/P	RDA proposes to locate a crushed stone mine and processing facility near Andrews, SC capable of crushing 500 tons per hour from the primary crusher. Facility is requesting limits to below applicable major source levels of 100 TPY, so this will be a synthetic minor construction permit. The facility will use wet suppression to maintain these levels. Standard 2: The only pollutants emitted are PM ₁₀ and PM _{2.5} . According to controlled emissions, PM _{2.5} is below exemption levels for all processes and PM ₁₀ is exempt for 3 of the 4 process groups as defined below. Facility modeled PM _{2.5} voluntarily. AERMOD was performed for PM ₁₀ . Standard 7: The MSBD for Williamsburg county has not been set for any pollutants. Therefore, no further analysis for this standard is required. Standard 8: No toxic air pollutants are being emitted from this facility. Therefore, no further analysis for this standard is required.