

1 Environmental Justice Report

The Environmental Justice (EJ) Report is an initial look at the demographics and socioeconomics of a facility's surrounding community area. This includes information within a radius determined by the North Carolina Department of Environmental Quality (Department or DEQ), race and ethnicity (decennial census year), poverty status, per capita income, and ability to speak English (most current American Community Survey (ACS) census range), the current North Carolina Department of Commerce county tier, and presence of Native American territory. The EJ Report does not include a reconnaissance of the community.

An EJ report will be conducted at the beginning of the permit application process when requested by the appropriate Division Director. This will be distributed to interested community members (if known) and posted to the DEQ website with the relevant permit application before the close of the public comment period. The primary goal is to encourage EJ Report comments and suggestions from the surrounding community, industry, and environmental groups throughout the comment period, and to inform specific outreach methods.

It is important to keep in mind, that based on the data available, the following limitations of this evaluation exist: census data is from 2010 and may be outdated; the more recent American Community Survey data through 2018 are estimates; the U.S. EPA's EJSCREEN does not provide all of the data categories that were used in this analysis so the census tract and county data cannot be compared to the radius evaluating the facility boundary; census tracts can be large areas that do not identify exact locations of each population.

The Department has prepared this overview of the demographic and socioeconomic data of the communities surrounding the proposed Align RNG, LLC facility to foster communication prior to the Division of Air Quality's final action on the permit application.

2 Environmental Justice Evaluation

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (US EPA). This evaluation examines the demographic and environmental conditions in Sampson and Duplin Counties, as well as census tracts 903 and 9701, and the one-mile buffer around the property boundary of the Align RNG, LLC facility. Finally, the demographics of the entire state of North Carolina are also considered as they compare to both the county and local census tract and radius settings.

The Department has assessed the permit application and the potential impact on communities surrounding the facility as proposed in the permit application. Accordingly, the Environmental Justice Report will include:

- Overview of the permit application submitted by Align RNG, LLC
- Study of area demographics [determined by utilizing the US EPA Environmental Justice tool (EJSCREEN) <https://ejscreen.epa.gov/mapper/> and current, available census data. <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- Comparison of local area demographics to both county and statewide census data
- County health assessment
- Surrounding sensitive receptors
- Local industrial sites (using the NCDEQ Community Mapping System <https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=1eb0fbe2bcfb4cccb3cc212af8a0b8c8>).

Demographics (including race and ethnicity, poverty status, and per capita incomes) for Sampson and Duplin counties will be compared to the local (census tracts and project radius) level data to identify any disparities surrounding the project area. Using standard environmental justice guidelines from the EPA and National Environmental Policy Act (NEPA) documentation, the following conditions will be flagged as potential communities of concern:

- 10% or more in comparison to the county or state average
- 50% or more minority
- 5% or more in comparison to the county or state average for poverty

3 Proposed Project

Align RNG, LLC submitted a permit application for a proposed facility in Duplin County, North Carolina. This application is for a new facility which would receive biogas produced in anaerobic digesters at various independently-owned and operated hog farms located in Duplin and Sampson counties. The projected amount of biogas production has been calculated using other similar anaerobic digesters in North Carolina that use hog manure as the sole feedstock. The biogas (raw material) will be dried using biogas dehydration and compression systems (and a glycol chiller system) at each farm (roughly 19 total) and transported through a new low-pressure biogas pipeline to the BF Grady Road facility. This permit application is solely for the proposed facility, not the gathering lines (low-pressure biogas) or the Piedmont Natural Gas pipeline. Therefore, this Environmental Justice Report considers only the immediate area surrounding the facility in its analysis.

The non-methane constituents of the biogas, referred to as tail gas, will be scrubbed for hydrogen sulfide (H₂S) using an iron sponge system (two iron sponge scrubbers, CD-1 and CD-2), followed by one enclosed hybrid flare (CD-3). During facility start-up and when the product gas does not meet natural gas pipeline specifications, the candlestick flare (CD-4) will be utilized to burn (oxidize or destroy) the air emissions. See Table 1 below for a description of actual and potential emissions at this facility, as of January 6, 2021.

The Align RNG, LLC facility will treat biogas gathered from surrounding agricultural operations and inject the treated gas to the Piedmont Natural Gas pipeline for offsite consumption. The biogas will be supplied from agricultural operations that have previously used open air lagoons for waste management. Emissions of gases such as methane from open air lagoons will now be reduced through the use of a digester. The gases produced in the digester will be routed to the Align RNG, LLC facility, thereby reducing the emissions of such gases from the lagoons.

Table 1. Actual and Potential Emissions

Pollutant	Actual (tons/year)	Potential to Emit (tons/year)
CO	10.10	17.39
NO _x	4.83	6.54
PM(TSP)	0.07	0.14
PM(10)	0.07	0.14
PM(2.5)	0.06	0.12
SO₂	50 projected	197
VOC	0.76	1.53

During the public comment period, many individuals expressed concern that the emissions profile excludes the industrial hog operations that are contributing biogas to the facility, and does not include the areas surrounding those farms in the demographic analysis. This permit application is solely for the proposed biogas treatment facility, not the gathering lines (low-pressure biogas) or the Piedmont Natural Gas pipeline. Therefore, this Environmental Justice Report considers only the immediate area surrounding the facility in its analysis. Public comments also raised concerns regarding truck traffic and disease vectors, however these concerns are outside the scope of this permit as well.

4 Geographic Area

The Align RNG, LLC facility is located at 2940 NC Highway 24 West, Turkey, NC 28393 (Figure 1).



Figure 1. Facility location (Align RNG, LLC) with one-mile radius.

Regional Setting

The facility is located in Duplin County, and the one-mile facility buffer enters into Sampson County. Both Sampson and Duplin counties are designated as Tier 1 counties. Tier 1 counties encompass the 40 most distressed counties based on average unemployment rate, median household income, percentage growth in population, and adjusted property tax per capita. The one-mile radius used in this analysis enters into two census tracts, Census Tract 903 in Duplin County and Census Tract 9701 in Sampson County (Figure 2). Census tracts are small, relatively permanent statistical subdivisions of a county with a unique numeric code (US Census Bureau). The one-mile buffer does not encompass any land within state designated tribal statistical areas.

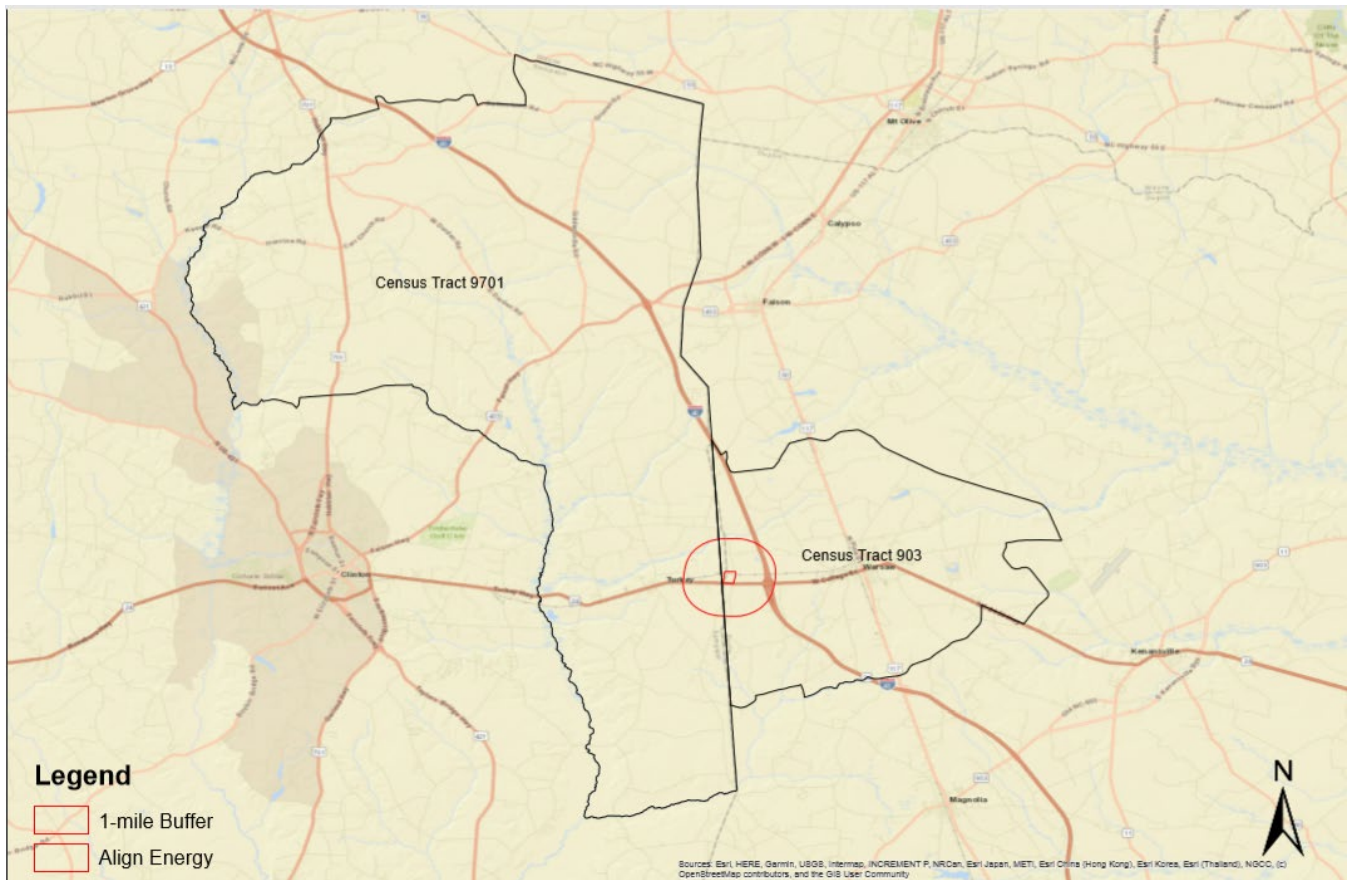


Figure 2. Census tracts surrounding facility location

Table 2. Regional Setting - Race and Ethnicity

	North Carolina		Duplin County		Sampson County	
	Estimate	Percent	Estimate	Percent	Estimate	Percent
Total:	9,535,483	100.00	58,505	100.00	63,431	100.00
Not Hispanic or Latino:	8,735,363	91.61	46,446	79.39	52,991	83.54
White alone	6,223,995	65.27	30,959	52.92	33,754	83.54
Black or African American alone	2,019,854	21.18	14,640	25.02	16,948	26.72
American Indian and Alaska Native alone	108,829	1.14	173	0.30	1,130	1.78
Asian alone	206,579	2.17	135	0.23	217	0.34
Native Hawaiian and Other Pacific Islander alone	5,259	0.06	28	0.05	43	0.07
Some other race alone	15,088	0.16	46	0.08	81	0.13
Two or more races:	155,759	1.63	465	0.79	818	1.29
Hispanic or Latino:	800,120	8.39	12,059	20.61	10,440	16.46
Source: US Census Bureau, 2010 Census						
All bolded and orange cells indicate a difference that is greater than 10% when compared to the state.						

Table 3. Local Setting – Race and Ethnicity

	Census Tract 903, Duplin County, North Carolina		Census Tract 9701, Sampson County, North Carolina		Project Area; 1-mile Buffer	
	Estimate	Percent	Estimate	Percent	Estimate	Percent
Total:	5,783	100.00	7,110	100.00	60	100.00
Not Hispanic or Latino:	4,775	82.57	5,362	75.41	49	81.00
White alone	1,923	33.25	3,388	47.65	17	29.00
Black or African American alone	2,762	47.76	1,838	25.85	30	50.00
American Indian and Alaska Native alone	18	0.31	51	0.72	0	0.00
Asian alone	16	0.28	10	0.14	0	0.00
Native Hawaiian and Other Pacific Islander alone	4	0.07	5	0.07	0	0.00
Some other race alone	1	0.02	8	0.11	0	0.00
Two or more races:	51	0.88	62	0.87	1	1.00
Hispanic or Latino:	1,008	17.43	1,748	24.59	11	19.00

Source: US Census Bureau, 2010 Census

All **bolded and orange cells** indicate a difference that is greater than 10% when compared to the state.

All **bolded and blue cells** indicate a difference that is greater than 10% when compared to the county and state.

Table 4. Poverty Status – Regional Setting

Subject	North Carolina						Duplin County					
	Total		Below poverty level		Percent below poverty level		Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Population for whom poverty status is determined	9,881,292	1,522	1,523,949	15,319	15.4%	0.2	58382	253	14,056	1,394	24.1%	2.4
AGE												
Under 18 years	2,258,876	1,607	498,013	7,632	22.0%	0.3	14,023	193	5,260	716	37.5%	5
18 to 64 years	6,092,009	1,103	884,618	9,282	14.5%	0.2	34,336	161	7,431	809	21.6%	2.4
65 years and over	1,530,407	995	141,318	2,705	9.2%	0.2	10,023	171	1,365	284	13.6%	2.8
SEX												
Male	4,779,533	2,237	669,307	8,648	14.0%	0.2	28,491	161	6,434	830	22.6%	2.9
Female	5,101,759	2,244	854,642	8,676	16.8%	0.2	29,891	194	7,622	778	25.5%	2.6
RACE/ETHNICITY												
White	6,829,742	8,193	823,258	11,150	12.1%	0.2	41,366	454	8,964	1,275	21.7%	3
Black or African American	2,096,490	5,812	493,496	8,392	23.5%	0.4	14,158	373	3,842	618	27.1%	4.2
American Indian and Alaska Native	117,702	1,595	29,577	1,585	25.1%	1.3	131	117	0	29	0.0%	23.2
Asian	275,301	1,983	32,712	2,356	11.9%	0.9	160	72	7	11	4.4%	6.7
Native Hawaiian and Other Pacific Islander	6,414	671	1,246	264	19.4%	4.2	46	53	0	29	0.0%	45.4
Some other race	302,934	7,911	89,305	5,371	29.5%	1.5	1,551	472	902	423	58.2%	18.4
Two or more races	252,709	6,223	54,355	2,369	21.5%	0.8	970	364	341	208	35.2%	17.3
Hispanic or Latino origin (of any race)	915,426	901	260,607	5,682	28.5%	0.6	12,871	29	5,805	1,024	45.1%	7.9
All individuals below:												
50 percent of poverty level	663,550	10,829					5,254	932				
125 percent of poverty level	2,034,827	19,447					19,381	1,727				
150 percent of poverty level	2,526,688	21,681					24,374	1,483				
185 percent of poverty level	3,227,889	24,339					29,218	1,609				
200 percent of poverty level	3,513,670	25,035					31,004	1,650				

Subject	North Carolina						Sampson County					
	Total		Below poverty level		Percent below poverty level		Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Population for whom poverty status is determined	9,881,292	1,522	1,523,949	15,319	15.4%	0.2	62,674	313	15,084	1,262	24.1%	2.0
AGE												
Under 18 years	2,258,876	1,607	498,013	7,632	22.0%	0.3	15,366	169	5,607	642	36.5%	4.1
18 to 64 years	6,092,009	1,103	884,618	9,282	14.5%	0.2	36,772	233	8,300	756	22.6%	2.0
65 years and over	1,530,407	995	141,318	2,705	9.2%	0.2	10,536	170	1,177	270	11.2%	2.6
SEX												
Male	4,779,533	2,237	669,307	8,648	14.0%	0.2	30,696	278	6,912	660	22.5%	2.1
Female	5,101,759	2,244	854,642	8,676	16.8%	0.2	31,978	137	8,172	864	25.6%	2.7
RACE/ETHNICITY												
White	6,829,742	8,193	823,258	11,150	12.1%	0.2	40,561	877	7,928	1,090	19.5%	2.6
Black or African American	2,096,490	5,812	493,496	8,392	23.5%	0.4	15,692	420	5,473	720	34.9%	4.4
American Indian and Alaska Native	117,702	1,595	29,577	1,585	25.1%	1.3	1,198	272	187	103	15.6%	9.0
Asian	275,301	1,983	32,712	2,356	11.9%	0.9	372	18	101	91	27.2%	24.0
Native Hawaiian and Other Pacific Islander	6,414	671	1,246	264	19.4%	4.2	0	29	0	29	-	**
Some other race	302,934	7,911	89,305	5,371	29.5%	1.5	3,020	780	992	509	32.8%	12.3
Two or more races	252,709	6,223	54,355	2,369	21.5%	0.8	1,831	495	403	237	22.0%	9.9
Hispanic or Latino origin (of any race)	915,426	901	260,607	5,682	28.5%	0.6	12,187	92	4,790	817	39.3%	6.7
All individuals below:												
50 percent of poverty level	663,550	10,829					5,598	887				
125 percent of poverty level	2,034,827	19,447					18,830	1,385				
150 percent of poverty level	2,526,688	21,681					23,188	1,278				
185 percent of poverty level	3,227,889	24,339					28,055	1,293				
200 percent of poverty level	3,513,670	25,035					30,086	1,314				

Source: American Community Survey 5-year Estimates (2014-2018)
All **bolded and orange** cells indicate a difference that is greater than 5% when compared to the state.

Table 5. Poverty Status – Local Setting

Subject	Census Tract 903, Duplin County, North Carolina						Census Tract 9701, Sampson County, North Carolina					
	Total		Below poverty level		Percent below poverty level		Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Population for whom poverty status is determined	5566	633	1063	437	19.1%	8.1	7,069	600	1,823	596	25.8%	8
AGE												
Under 18 years	1,227	411	329	183	26.8%	17.8	1,794	320	581	264	32.4%	15
18 to 64 years	3236	414	651	303	20.1%	8.7	4,185	442	1,220	414	29.2%	9
65 years and over	1103	246	83	60	7.5%	5.4	1,090	207	22	25	2.0%	2.4
SEX												
Male	2709	440	483	248	17.8%	9.6	3,656	411	881	352	24.1%	9
Female	2857	432	580	259	20.3%	8.8	3,413	406	942	366	27.6%	10
RACE/ETHNICITY												
White	2809	551	459	326	16.3%	12.2	4,664	661	898	615	19.3%	12
Black or African American	2277	653	457	260	20.1%	11.6	1,692	296	605	287	35.8%	16
American Indian/Alaska Native	0	17	0	17	-	**	1	3	0	17	0.0%	100
Asian	0	17	0	17	-	**	16	19	0	17	0.0%	77
Native Hawaiian/Pacific Islander	32	47	0	17	0.0%	54.4	0	17	0	17	-	**
Some other race	135	157	42	63	31.1%	21.2	502	341	305	272	60.8%	39
Two or more races	313	257	105	139	33.5%	43.3	194	188	15	22	7.7%	14
Hispanic or Latino origin (of any race)	978	615	92	138	9.4%	19.1	1,848	457	823	432	44.5%	21
All individuals below:												
50 percent of poverty level	537	344					996	450				
125 percent of poverty level	2335	789					2667	618				
150 percent of poverty level	3006	783					2911	619				
185 percent of poverty level	3259	752					3564	598				
200 percent of poverty level	3498	714					3723	640				

Source: American Community Survey 5-year Estimates (2014-2018)

All **bolded and orange** cells indicate a difference that is greater than 5% when compared to the state.

All **bolded and blue** cells indicate a difference that is greater than 5% when compared to the state and the county.

Table 6. Per Capita Income

Location	Subject		Per Capita Income in Last 12 Months (Dollars)
North Carolina	Per Capita Income	Estimate	\$29,456
		Margin of Error +/-	143
Duplin County	Per Capita Income	Estimate	\$19,455
		Margin of Error +/-	737
Sampson County	Per Capita Income	Estimate	\$21,950
		Margin of Error +/-	1,130
Census Tract 903 Duplin County	Per Capita Income	Estimate	\$16,684
		Margin of Error +/-	2,420
Census Tract 9701 Sampson County	Per Capita Income	Estimate	\$21,059
		Margin of Error +/-	4,453
Project Area- 1 Mile Buffer	Per Capita Income	Estimate	\$17,429
		Margin of Error +/-	*****

5 Limited English Proficiency (LEP)

Per the Safe Harbor Guidelines, should an LEP Group be identified during the permit application process, written translations of vital documents for each eligible LEP language group that constitutes five percent or includes 1,000 members (whichever is less) of the population of persons eligible to be served or likely to be affected or encountered. If there are fewer than 50 persons in a language group that reaches the five percent trigger, then DEQ will not translate vital written materials, but instead will provide written notice in the primary language of the LEP language group of the right to receive competent oral interpretation of those written materials, free of cost. The safe harbor provisions apply to the translation of written documents only. Safe harbor guidelines are per the EPA guidance for LEP persons, and implemented by DEQ when deemed appropriate. The population of Spanish-speakers that speak English “less than very well” is greater than 5% in both census tracts included in the buffer.

Table 7. Limited English Proficiency

Language Spoken at Home	Census Tract 903, Duplin County		Census Tract 9701, Sampson County	
	Estimate	Margin of Error	Estimate	Margin of Error
Total:	4,685	394	6,755	635
Speak only English	4,206	387	5,352	507
Spanish or Spanish Creole:	461	248	1396	454
Speak English "very well"	173	110	539	196
Speak English less than "very well"	288	204	857	336

6 County Health

The University of Wisconsin Population Health Institute, in collaboration with the Robert Wood Johnson Foundation, calculated a County Health Rankings system for all the States in the United States (www.countyhealthrankings.org). This ranking is based on health outcomes (such as lifespan and self-reported health status) and health factors (such as environmental, social and economic conditions). According to this 2020 report, out of all 100 counties in North Carolina (with 1 indicating the healthiest), Sampson County ranks 82nd in health factors and 77th in health outcomes. Duplin County ranks 87th in health factors and 56th in health outcomes.

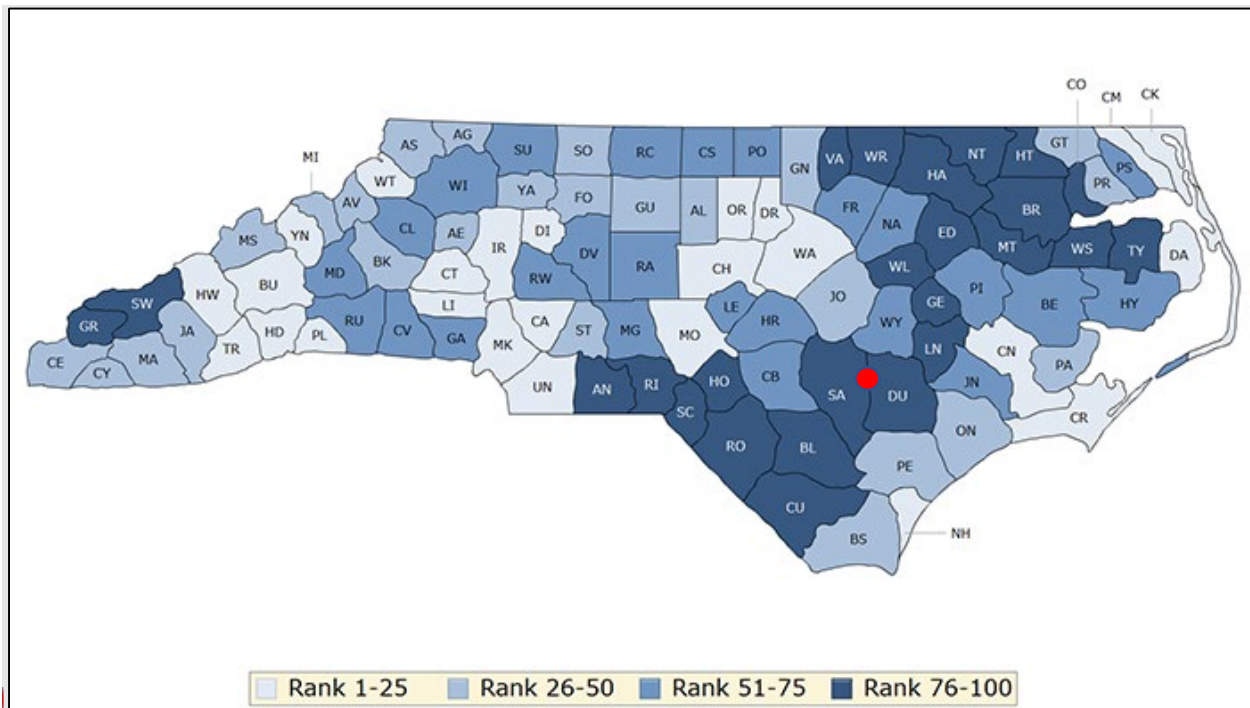


Figure 3. County Health Rankings for Health Factors in North Carolina provided by University of Wisconsin Public Health Institute.

7 Local Sensitive Receptors

The Environmental Protection Agency suggests that sensitive receptors include, but are not limited to, hospitals, schools, daycare facilities, elderly housing and convalescent facilities. These are areas where the occupants are more susceptible to the adverse effects of exposure to toxic chemicals, pesticides, and other pollutants. Extra care must be taken when dealing with contaminants and pollutants in close proximity to areas recognized as sensitive receptors. For instance, children and the elderly may have a higher risk of developing asthma from elevated levels of certain air pollutants than a healthy individual aged between 18 and 64.

Within the one-mile project radius from the Align RNG, LLC facility, the following potential sensitive receptors were identified through EJSCREEN and Google Maps.

- First Baptist Church

Near the project location (outside radius), these potential sensitive receptors were identified (Figure 4):

- House of Prayer Church
- Duplin County Renaissance Center

Additional sensitive receptors across Sampson and Duplin counties were identified during the permit application process and were contacted accordingly.

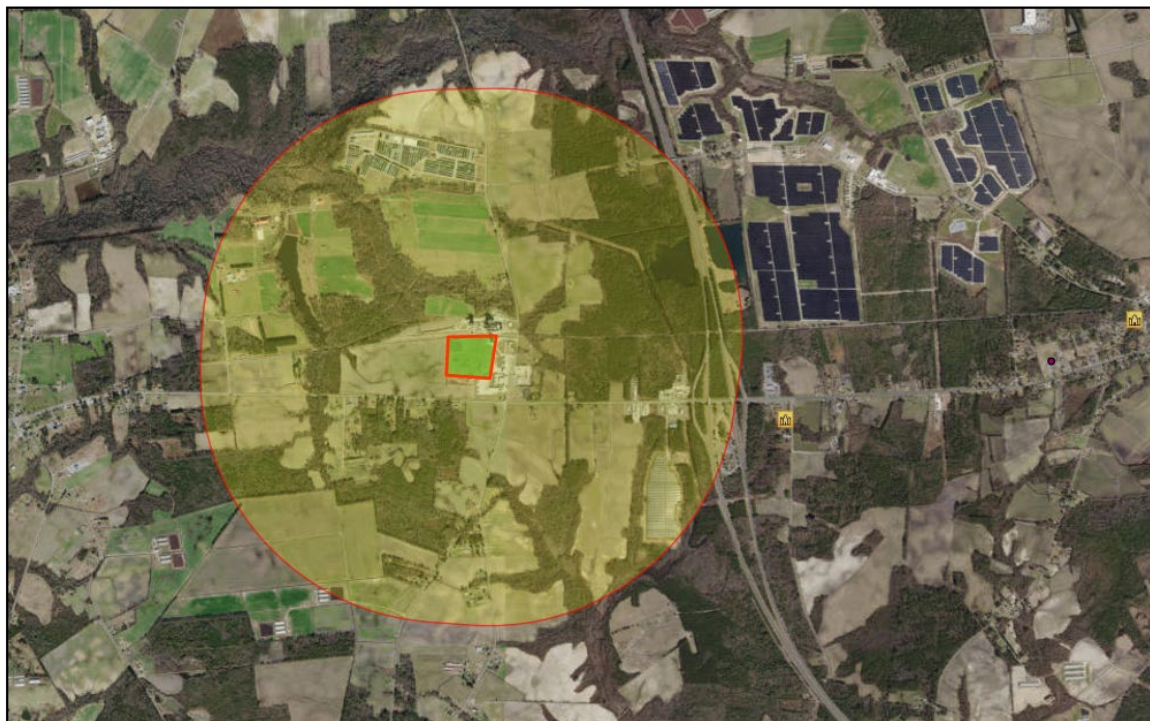


Figure 4. Sensitive receptors surrounding Align RNG, LLC facility

8 Local Industrial Sites

Within the one-mile buffer, there are 16 facility permits or incident reports (as of April 9, 2020):

- 3 NPDES Stormwater Permits
- 1 Solid Waste Septage Site
- 3 Underground Storage Tank Incidents
- 4 Above Ground Storage Tanks Incidents
- 5 Underground Storage Tank Active Facilities
- 1 Land Use Restriction and/or Notices



Figure 5. Permitted facilities and incidents with the one-mile radius surrounding the Align RNG, LLC facility

9. Conclusion

The EJ Report is an initial evaluation of the demographics and socioeconomics of the community area surrounding a proposed facility or permit modification. This includes information within a determined radius by the Department (one mile for this project) on race and ethnicity (decennial census year), poverty, per capita income, and ability to speak English (most current ACS census range), current NC Commerce county tier, and presence or absence of American Indian Tribal areas. The EJ Report does not include a reconnaissance of the community. The proposed Align RNG, LLC facility is located in an area designated with moderate health factors and outcomes in comparison to other areas of the State.

The study area displays higher percentages of African-American and Hispanic residents compared to the state, and in some cases, the county as well. The study area also exhibits higher poverty levels than the state, and the county in some instances. One potential LEP language group (Spanish) was identified that reaches the 5% threshold for Safe Harbor Guidelines. Extra attention was also given to ensure language data was accurate and translation and interpretation services were provided for essential documents and the public hearing and meeting. Finally, the list of sensitive receptors was consulted while considering additional outreach options that may best fit this community's needs.

Based on the results from this EJ Report, DEQ provided the following outreach:

- 1) Posted the notice for public comment in newspapers in both Sampson and Duplin counties
- 2) Consulted with the applicant to identify additional outreach methods and discuss ways to employ local vendors and HUB's throughout the process
- 3) Translated the public notice into Spanish and published the notice on the DEQ Website
- 4) Created a one-page flyer to provide an easy to understand project overview
- 5) Translated the one-page flyer into Spanish
- 6) Provided a voicemail line to receive public comment
- 7) Translated the voicemail line into Spanish
- 8) Consulted with local and state-wide Environmental and Community-based organizations to hear additional ideas for community outreach
- 9) Conducted on the ground outreach by visiting local businesses, sensitive receptors, and known community organizations
- 10) Announced reminders through social media
- 11) Provided Spanish translation service availability during the site visit and public meeting