

Santa Fe County RAP Question and Fact Sheet

Question: What is RAP?

Answer: RAP is an acronym for Reclaimed Asphalt Pavement. According to the Federal Highway Administration (FHWA), RAP is the term given to removed and/or reprocessed pavement materials containing asphalt and aggregates. These materials are generated when asphalt pavements are removed for reconstruction, resurfacing, or to obtain access to buried utilities. The primary method for removal is by the mechanical milling (or grinding) of existing asphalt road surfaces.

Question: Is asphalt the most recycled material in the USA?

Response: **Yes.** According to the Federal Highway Administration 73 million tons of reclaimed asphalt pavement is reused every year. This is nearly twice as much as paper, glass, aluminum and plastics combined.

Question: What constituents are found in RAP? What's in it?

Response: According to the FHWA, mineral aggregates constitute the overwhelming majority (93 to 97 percent by weight) of RAP. Only a minor percentage (3 to 7 percent) of RAP consists of hardened asphalt cement. Consequently, the overall chemical composition of RAP is essentially similar to that of the naturally occurring aggregate that is its principal constituent. FHWA states that asphalt cement is made up of mainly high molecular weight aliphatic hydrocarbon compounds, but also small concentrations of other materials such as sulfur, nitrogen, and polycyclic hydrocarbons (aromatic and/or naphthenic) of **very low chemical reactivity**. Asphalt cement is a combination of asphaltenes and maltenes (resins and oils). Asphaltenes are more viscous than either resins or oils and play a major role in determining asphalt viscosity. Oxidation of aged asphalt causes the oils to convert to resins and the resins to convert to asphaltenes, resulting in age hardening and a higher viscosity binder.

Question: What is the source of the RAP being used in El Dorado?

Response: The RAP being placed on the roads in El Dorado was donated to Santa Fe County by FHWA/NMDOT. Santa Fe County Staff confirmed with NMDOT that the RAP that was donated to Santa Fe County came from local NMDOT facilities. The New Mexico Department of Transportation invited all Counties within the State of New Mexico to utilize stockpiles of RAP that the State had accumulated, as a result, Santa Fe County applied to NMDOT for the use of RAP. Pursuant to NMDOT's agreement with the Federal Highway Administration dated September 25, 2015, the NMDOT confirmed to the Federal Highway Administration that the project initiated by Santa Fe County to apply RAP to the road surfaces in El

Dorado qualified for a Programmatic Categorical Exclusion. The source of the RAP is likely millings from St. Francis (285) and I-25 in Santa Fe.

Question: What is a Categorical Exclusion?

Response: 23 CFR § 771.117 FHWA categorical exclusions.
(a) Categorical exclusions (CEs) are actions which meet the definition contained in 40 CFR 1508.4, and, based on past experience with similar actions, do not involve significant environmental impacts. They are actions which: do not induce significant impacts to planned growth or land use for the area; do not require the relocation of significant numbers of people; do not have a significant impact on any natural, cultural, recreational, historic or other resource; do not involve significant air, noise, or water quality impacts; do not have significant impacts on travel patterns; or do not otherwise, either individually or cumulatively, have any significant environmental impacts. (U.S. Government Publishing Office)

40 CFR 1508.4 states the following:

40 CFR § 1508.4 Categorical exclusion.
Categorical exclusion means a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations (§ 1507.3) and for which, therefore, neither an environmental assessment nor an environmental impact statement is required. An agency may decide in its procedures or otherwise, to prepare environmental assessments for the reasons stated in § 1508.9 even though it is not required to do so. Any procedures under this section shall provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect.

Question: I am concerned that RAP will harm the aquifer. Is RAP harmful to the environment?

Response: **No.** This project qualified for a Categorical Exclusion as previously defined in this fact sheet. By the definition of a Categorical Exclusion, the project will not individually or cumulatively have any significant environmental impacts.

In addition, the body of evidence does not support the concern that RAP is harmful to the environment. According to the Federal Highway Administration Report # FHWA-RD-97-148, “the available body of technical data indicate that RAP is a nonleachable material”. Santa Fe County’s position is that placing RAP on roads in Santa Fe County does not pose a risk to the environment. Studies have been performed by various agencies and the conclusion is that RAP does not pose a risk to the environment. The Virginia Department of Transportation and State University System of Florida have conducted studies and deduced the following:

The Virginia Department of Transportation stated that “Research has been conducted on the feasibility and potential environmental impact of using milled asphalt as fill material for bridge approaches and similar applications. Even when used in applications above mean high water (an unsaturated condition), concern has been expressed that leachate resulting from flood or rainfall could be contaminated by such recycled asphalt and thus have negative environmental consequences.” “Results of numerous field studies and standardized tests, including the Toxicity Characteristic Leachate Procedure (TCLP) test, suggest that typical RAP can be used as “clean fill” without undue negative environmental consequences.”

State University System of Florida produced the following on the Leaching Characteristics of Asphalt Road Waste:

“While it is generally recognized that RAP does not present a great risk to human health or the environment, a better characterization of the amount and type of chemicals that leach in the environment helps provide a better means to correctly manage this material. This project was conducted to address some of the environmental concerns expressed by regulators and others related to the leaching of pollutants from asphalt road waste, primarily RAP.”

“A series of leaching tests were performed at both batch-scale and in leaching columns. Samples tested did not pose an undue risk (in regard to leaching of the pollutants tested). In all of the batch tests, measurements of volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and selected heavy metals (Ba, Ca, Cr, Cu, Pb, Ni, and Zn) all were below detection limits and were below applicable regulatory groundwater guidance concentrations. This indicated that the samples tested did not pose an undue risk (in regard to leaching of the pollutants tested) under current waste policy in Florida.”

Question: Does the RAP contain solid waste material?

Response: **No.** RAP does not contain solid waste material. Remnants of the previous road surface may be found in the RAP material. This material is not solid waste. This includes items like rubber crack sealant and thermoplastic pavement markings that were placed on the previous road surface during the life of the road prior to milling. In an effort to further reduce amounts of the previous road material, Santa Fe County has reduced the size of the screen that is being used to screen material from the RAP.

Question: Material Safety Data Sheet (MSDS) for RAP details the potential health hazards associated with RAP. Is the dust from the road hazardous to human health?

Response: **No.** Material Safety Data Sheet (MSDS) mentions Respirable Crystalline Silica dust as a potential hazard. The United States Department of Labor’s website defines Respirable Crystalline Silica as the following: “Respirable Crystalline

Silica – very small particles at least 100 times smaller than ordinary sand you might find on beaches and playgrounds – is created when cutting, sawing, grinding, drilling, and crushing stone, rock, concrete, brick, block, and mortar. Activities such as abrasive blasting with sand; sawing brick or concrete; sanding or drilling into concrete walls; grinding mortar; manufacturing brick, concrete blocks, stone countertops, or ceramic products; and cutting or crushing stone result in worker exposures to respirable crystalline silica dust.”

This constituent is not present as result of the asphalt binder but is created from the mechanical disruption of the rock aggregate that makes up 93% to 97% of cured asphalt by weight. This constituent is only an issue of concern for the workers that are operating the milling machine or those that are in close proximity to the milling operation. The application of the RAP material to the roads in El Dorado does not involve grinding, cutting, drilling, crushing, or reheating of the material; therefore, this process is not generating respirable crystalline silica dust. In addition, Santa Fe County is aware that the EPA recognizes that recycled asphalt pavement can be used as an effective control for significantly reducing general fugitive dust emissions from unpaved roads and areas. (Koch et. at., 2011)

Question: Is Santa Fe County required to follow the New Mexico Department of Transportation Standards?

Response: **No.** Santa Fe County is not required to follow NMDOT construction specifications and standards. Because the RAP is owned by the FHWA and NMDOT, Santa Fe County submitted a project scope of work to NMDOT as part of the request to use the RAP material. In a letter dated March 15, 2017, from NMDOT to FHWA the NMDOT states the following: “The New Mexico Department of Transportation (NMDOT) staff has reviewed the following project. The project meets the conditions stipulated in the agreement approved September 25, 2015, for completing the requirements of 23 CFR § 771 and it qualifies for the NMDOT and Federal Highway Administration Programmatic Categorical Exclusion.”

Question: Does the use of 100% RAP violate NMDOT and the Federal Highway Transportation Administration (FHWA) standards?

Response: **No.** The use of 100% RAP does not violate NMDOT or FHWA standards. NMDOT does not have a specification for using RAP as a driving surface because NMDOT does not maintain un-surfaced roads. However, NMDOT does limit the use of RAP in its Hot Mix Asphalt designs to 35% and 50% in its Base Course. The FHWA requires states to utilize their own specifications so different states can have varying amounts of RAP in accordance with their own specification.

Question: Has the RAP material been tested for compliance with environmental standards before application.

Response: **No.** Additional testing was not required as Santa Fe County's request for the RAP qualified for a Programmatic Categorical Exclusion. See the definition of Categorical Exclusion above. Pursuant to NMDOT's agreement with the Federal Highway Administration dated September 25, 2015, the NMDOT confirmed to the Federal Highway Administration that the project initiated by Santa Fe County to apply RAP to the road surfaces in El Dorado qualified for a Programmatic Categorical Exclusion. This letter states that "No further coordination is required for environmental approval".

Question: Has Santa Fe County used RAP on any other roads with Santa Fe County?

Response: **Yes.** The following is a list of roads that Santa Fe County has applied RAP to in the past:

- Carlson Subdivision – 1992 I-25 Frontage Road
- Remuda Ridge Subdivision – 1992 I-25 Frontage Road
- Village of Cerrillos – 1992 Cerrillos
- CR 54 – 1992 La Cienega
- CR 52 – 1993 La Cienega
- Calle Victoriano – 2009 Stanley
- Arroyo Alamo East – 2010 La Puebla
- Bartons Loop – 2010 Arroyo Seco
- Lumbre del Sol – 2010 Arroyo Seco
- Camino arroyo Seco – 2010 Arroyo Seco
- Old dump road – 2010 Arroyo Seco
- Camino los Ranchos – 2010 Chimayo
- Camino de los Vigils – 2010 Chimayo
- Jericho Lane - 4/2017 Old SF Trail
- Fire Station Road -5/2017 Glorieta
- Cross Ranch Road – 4/2018 Stanley
- Camino las Cabrerías- 5/2018 Galisteo
- Peaceful Drive – 5/2018 (in progress) Edgewood

Question: Did Santa Fe County coordinate the RAP Project with the El Dorado Roads Committee?

Response: **Yes.** The following is a timeline that documents the coordination efforts between Santa Fe County and ECIA Roads Committee:

- 3/30/17 County reached out to ECIA regarding the use of RAP on the roads in Eldorado.
- 4/7/17 Ms. Felicia Probert, ECIA Roads Chairperson, emails county with their road recommendations.

- 5/17/17 Mr. Robert Martinez emails Ms. Probert finalized list with their recommendations added.
- 6/8/17 Mr. Martinez attends ECIA roads meeting to discuss the use of RAP.
- 6/14/17 Ms. Probert emails Mr. Martinez that ECIA Board supports the continued use of RAP
- 12/7/17 Commissioner Moreno conducts town hall meeting.

Question: Is asphalt recycling good for the environment?

Response: **Yes.** Asphalt Recycling benefits the environment in many ways. In particular, it reduces quarrying, mining and oil consumption. Every year, approximately 75 million tons of asphalt is recycled. Asphalt recycling reduces our consumption of scarce natural resources (aggregate and asphalt) and simultaneously keeps 75 million tons of material out of US landfills. Recycling asphalt also dramatically reduces the consumption of resources such as fuel, machinery, transportation and labor when compared with producing virgin asphalt materials. (Source: Asphaltrecycling.com)