Venture Global Calcasieu Pass Requested Pollutant Increases

Pollutant		Proposed Increase (Tons Per Year)	Current Permit (Tons Per Year)	% Increase	EPA listed health concerns
PM10/PM25	Particulate Matter	40.24	236	**17%**	PM10 particles are 10 microns (μm) or less in diameter, PM2.5 particles are about 1 ten-thousandth of an inch, or 30 times smaller than a human hair and can include dust, soot, metals, organic chemicals, and biological matter like mold, pollen, bacteria, and animal dander. They are small enough to pass through the nose and throat and enter the lungs, posing more health risks than larger particles.
SO2	Sulfur Dioxide	3.66	96.25	**3.2%**	Can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO2
NOX	Nitrogen Oxide	91.41	459.51	**20%**	Can cause damage to the human respiratory tract and increase a person's vulnerability to, and the severity of, respiratory infections and asthma
CO	Carbon Monoxide	230.43	705.63	**32%**	Causes impaired vision and coordination, headaches, dizziness, confusion, nausea, flu-like symptoms that clear up after leaving home. Fatal at very high concentrations.
VOCs & HAPs & TAPS	Volatile Organic Compounds, Hazardous Air Pollutants, and Toxic Air Pollutants	115.44	87.17	**132%**	Many substances in these categories have serious health effects on people, including respiratory, reproductive and developmental effects, as well as cancer.
CO2	Carbon Dioxide	680,388	3,970,643	**17%**	At higher levels, causes rapid breathing, confusion, increased cardiac output, elevated blood pressure and increased arrhythmias. Breathing oxygen depleted air caused by extreme CO2 concentrations can lead to death by suffocation.
1,3 Butadiene	Carcinogenic VOC	0.001	0.009	**11%**	There is some evidence that it causes lymph and blood cancer in humans and it has been shown to cause lymph, breast, uterine, lung, heart, and skin cancer in animals.

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Acetaldehyde	Carcinogenic VOC	0.3	0.86	**34%**	Probable human carcinogen (Group B2) based on inadequate human cancer studies and animal studies that have shown nasal tumors in rats and laryngeal tumors in hamsters.
Acrolein	A highly reactive and toxic VOC	0.074	0.115	**61%**	Toxic to humans following inhalation, oral or dermal exposures. Acute (short-term) inhalation exposure may result in upper respiratory tract irritation and congestion.
Benzene	Carcinogenic VOC	0.16	0.39	**41%**	A known carcinogen, Acute (short-term) inhalation exposure may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness.
1,4 Dichlorobenzene	Long-lived carcinogenic VOC that can cause persistent food chain contamination	0.09	0.01	**900%**	Short- term exposure results in irritation of the skin, throat, and eyes. Long-term exposure results in effects on the liver, skin, and central nervous system.
Ethylbenzene	Hydrocarbon used as a solvent	0.26	0.69	**38%**	Breathing very high levels can cause dizziness and throat and eye irritation. Breathing lower levels has resulted in hearing effects and kidney damage in animals.
Lead	Neurotoxin	0.05	0.00	**500%**	Proven to cause behavior and learning problems, lower IQ and hyperactivity, slowed growth. hearing problems and anemia.
Formaldehyde	Carcinogenic VOC	0.3	1.8	**16%**	Inhaling high levels for a short period of time can cause sensory irritation such as eye irritation. For longer periods of time can damage the lungs and increase asthma and allergy-related conditions, sensory irritation, reproductive toxicity, and cancer.
n-hexane	Neurotoxic Hydrocarbon	9.86	5.3	**186%**	Short-term inhalation exposure high levels of hexane causes dizziness, giddiness, slight nausea, and headache. Long-term exposure is associated with polyneuropathy in humans, with numbness in the extremities, muscular weakness, blurred vision, headache, and fatigue.

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Naphthalene	Carcinogenic PAH	0.02	0.08	**25%**	Short-term exposure of humans to naphthalene by inhalation, ingestion, and dermal contact is associated with hemolytic anemia, damage to the liver, and neurological damage. Cataracts have also been reported in workers acutely exposed to naphthalene by inhalation and ingestion. Long-term exposure of workers and rodents to naphthalene has been reported to cause cataracts and damage to the retina. Hemolytic anemia has been reported in infants born to mothers who "sniffed" and ingested naphthalene (as mothballs) during pregnancy.
PAH	Polycyclic aromatic hydrocarbons (Carcinogenic)	0.015	0.048	**31%**	Large amounts in air can irritate eyes and breathing passages. Workers who have been exposed to large amounts of naphthalene from skin contact with the liquid form and from breathing naphthalene vapor have developed blood and liver abnormalities. Several of the PAHs and some specific mixtures of PAHs are considered to be cancer-causing chemicals
Propylene Oxide	B2 (probable) Carcinogenic VOC	0.22	0.62	**35%**	Short-term exposure has caused eye and respiratory tract irritation. Dermal contact, even with dilute solutions, has caused skin irritation and necrosis in humans. Propylene oxide is also a mild central nervous system depressant in humans. Inflammatory lesions of the nasal cavity, trachea, and lungs and neurological effects have been observed in animals with long-term by inhalation. Has been observed to cause tumors at or near the site of administration in rodents, causing tumors and nasal tumors after inhalation exposure. EPA has classified propylene oxide as a Group B2, probable human carcinogen.

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Toluene	Neurotoxin, particularly harmful to aquatic life	1.07	2.93	**36%**	The central nervous system dysfunction and narcosis have been frequently observed in humans acutely exposed to elevated airborne levels of toluene; symptoms include fatigue, sleepiness, headaches, and nausea. Chronic inhalation exposure of humans also causes irritation of the upper respiratory tract and eyes, sore throat, dizziness, and headache. Human studies have reported developmental effects, such as CNS dysfunction, attention deficits, and minor craniofacial and limb anomalies, in the children of pregnant women exposed to high levels of toluene or mixed solvents by inhalation.
Xylenes	Neurotoxic VOC, particularly harmful to aquatic life	0.55	1.4	**39%**	Short-term inhalation exposure results in irritation of the eyes, nose, and throat, gastrointestinal effects, eye irritation, and neurological effects. Long-term inhalation exposure results primarily in central nervous system effects, such as headache, dizziness, fatigue, tremors, and incoordination; respiratory, cardiovascular, and kidney effects have also been reported.
Ammonia	Potentially fatal respiratory, eye and skin irritant, common cause of fish kills.	0.03	162.06	**0.01%**	A common cause of fish kills. Commonly associated with affecting fish growth, gill condition, organ weights and hematocrit in fish. Increases in internal ammonia concentrations in humans can have several detrimental effects, including reduced immune, osmoregulatory, nervous system and respiratory function.

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Barium Compounds	Toxin that causes heart and breathing problems	0.03	0.011	**273%**	Has been found to potentially cause gastrointestinal disturbances and muscular weakness when people are exposed to it at levels above the EPA drinking water standards for relatively short periods of time. Some people who eat or drink amounts of barium above background levels found in food and water for a short period may experience vomiting, abdominal cramps, diarrhea, difficulties in breathing, increased or decreased blood pressure, numbness around the face, and muscle weakness. Eating or drinking very large amounts of barium compounds that easily dissolve can cause changes in heart rhythm or paralysis and possibly death. Animals that drank barium over long periods had damage to the kidneys, decreases in body weight, and some died.
Cadmium Compounds	Causes lung cancer and reproductive problems	0.007	3.0	**233%**	Short-term effects through inhalation exposure consist mainly of effects on the lung, such as pulmonary irritation. Long-term inhalation or oral exposure leads to a build-up of cadmium in the kidneys that can cause kidney disease.
Chromium VI Compounds	Carcinogen (can cause lung cancer)	0.014	0.001	**1400%**	Human studies have clearly established that inhaled chromium (VI) is a human carcinogen, resulting in an increased risk of lung cancer. Animal studies have shown chromium (VI) to cause lung tumors via inhalation exposure.
Copper Compounds	Toxin that causes developmental and reproductive harm in aquatic species	0.003	0.003	**100%**	Acute and chronic effects at high doses have been shown to cause stomach and intestinal distress, liver and kidney damage, and anemia. Persons with Wilson's disease may be at a higher risk of health effects due to copper than the general public.
Manganese	Neurotoxin that causes “Manganese” similar to Parkinson’s disease	0.05	0.00	**1000%**	Excessive exposure to manganese, particularly through inhalation, can lead to serious health risks such as neurotoxicity (manganism), respiratory irritation, reproductive and developmental toxicity, and damage to the liver and kidneys. Environmentally, manganese contamination can persist in soil and water, leading to bioaccumulation in the food chain and toxic effects on aquatic life, which can disrupt ecosystems and pose risks to both wildlife and humans.

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Hydrogen Sulfide	Highly toxic-exposure for 5 minutes at high concentrations (800 ppm) is fatal.	0.49	0.04	**1225%**	Exposure to low concentrations may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Respiratory distress or arrest has been observed in people exposed to very high concentrations of hydrogen sulfide. Exposure to low concentrations of hydrogen sulfide may cause headaches, poor memory, tiredness, and balance problems. Brief exposures to high concentrations of hydrogen sulfide can cause loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in some individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function.
Nickel Compounds	Carcinogen, particularly dangerous to aquatic life	0.019	0.002	**950%**	Nickel compounds pose significant health risks, including carcinogenicity, respiratory irritation, skin sensitization, and potential reproductive toxicity, making them particularly hazardous to individuals exposed through inhalation or skin contact. Additionally, these compounds have a detrimental environmental impact, contaminating soil and water, bioaccumulating in aquatic species, and causing toxicity to aquatic life, leading to long-term ecological damage.
Selenium	Carcinogen, particularly dangerous to aquatic life	0.001	0.001	**0%**	Chronic exposure to high levels can cause selenosis, respiratory irritation, potential carcinogenic effects, and reproductive toxicity, with severe cases leading to neurological damage and organ failure. Environmentally, selenium contaminates water and soil, causing toxicity to aquatic life and plants, and can bioaccumulate and biomagnify in the food chain, posing risks to wildlife and humans.

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Zinc	Zinc toxicity in water can lead to developmental and reproductive harm in aquatic species, leading to population declines and ecosystem disruptions.	0.21	0.11	**190%**	Inhalation of zinc oxide fumes can cause metal fume fever, respiratory irritation, and gastrointestinal distress, while direct contact with zinc compounds may result in skin and eye irritation. Environmentally, zinc can contaminate water and soil, leading to toxicity in aquatic life, plants, and bioaccumulation in organisms, posing risks to ecosystems and human health.
		Proposed Increase (Hours per Year)	**Current Permit (Hours per Year)**	**Percentage Increase**	
Flaring Hours		500	60	**833%**	
					Data calculated from EDMS Document ID: 13730261), Venture Global Calcasieu Pass, LLC and TransCameron Pipeline, LLC application for the Renewal and Significant Modification of the Title V Permit No. 0560-00987-V4 and the Major Modification of the Prevention of Significant Deterioration (PSD) Permit No. PSD-LA-805(M-4) submitted March 17, 2023