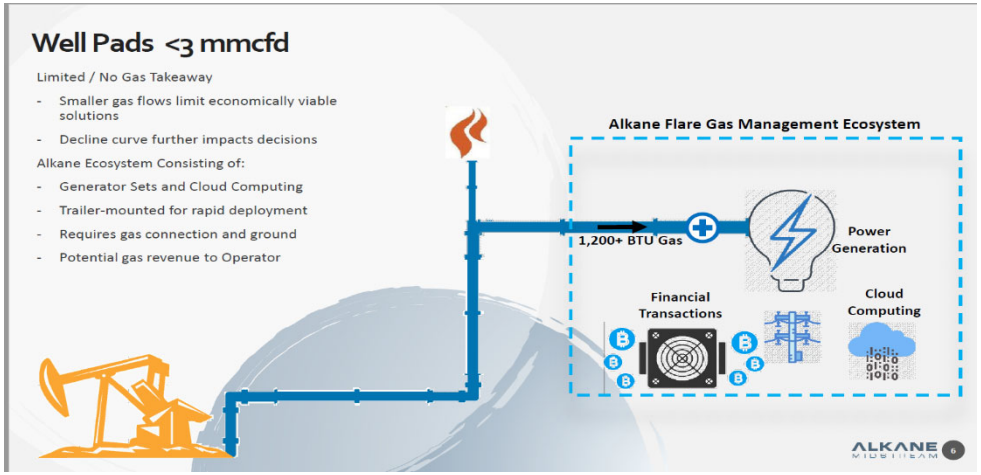
Exhibit E

Claim	Claim Elements	Accused Product(s)
1	1(a): "A flare mitigation system comprising: an electrical power generation system comprising:"	Alkane has committed and continues to commit acts of infringement under 35 U.S.C. § 271 by making, using, selling, and offering to sell *a flare mitigation system*—which it refers to as a "Flare Gas Management" system—that includes *an electrical power generation system* that is comprised of one or more generators used to convert natural gas into electrical power, which is in turn used to power a distributed computing system. The below image is from the title slide of a presentation given by Alkane on October 6, 2020[1], in which Alkane described its Flare Gas Management system.  *Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020), at app. D, slide 1. The image below is a diagram from Alkane's October 6, 2020 presentation that depicts Alkane's Flare Gas Management system at a high-level. The figure illustrates flare gas moving from the wellhead into Alkane's Flare Gas Management system. The figure further illustrates a "Power Generation" sub-system, which is depicted by a lightbulb icon. The figure also illustrates the electrical power generated by the Power Generation sub-system being used to power a distributed computing system used to conduct computing operations relating to "Financial Transactions" or "Cloud Computing." A person of ordinary skill in the art would understand from this figure that the Power Generation sub-system in Alkane's Flare Gas Mitigation system includes one or more generators that convert the flare gas flowing from the wellhead into electrical power.

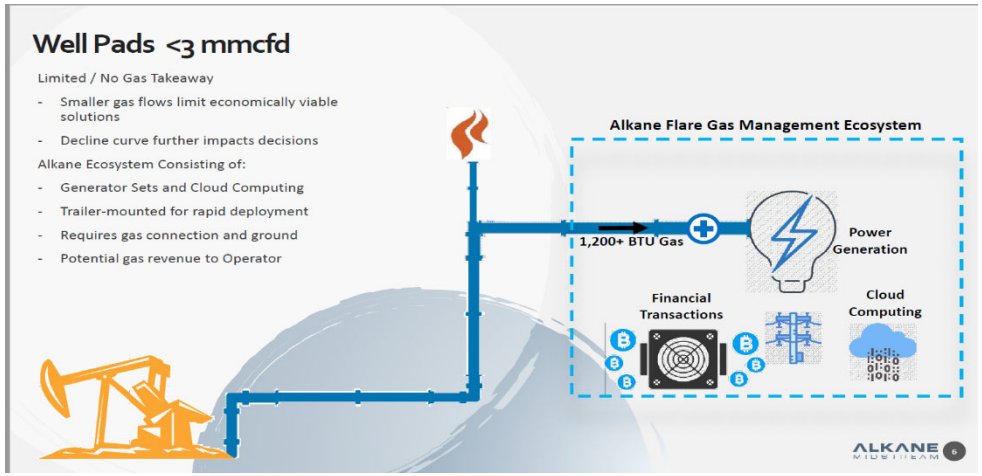
[1] The title slide of Alkane's "Flare Gas Management and LNG Distribution" presentation is dated October 5, 2020. As per the Energy Development and Transition Committee meeting minutes, the presentation was delivered on October 6, 2020. *See Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020). The presentation will be referred to herein according to the date the presentation was given.

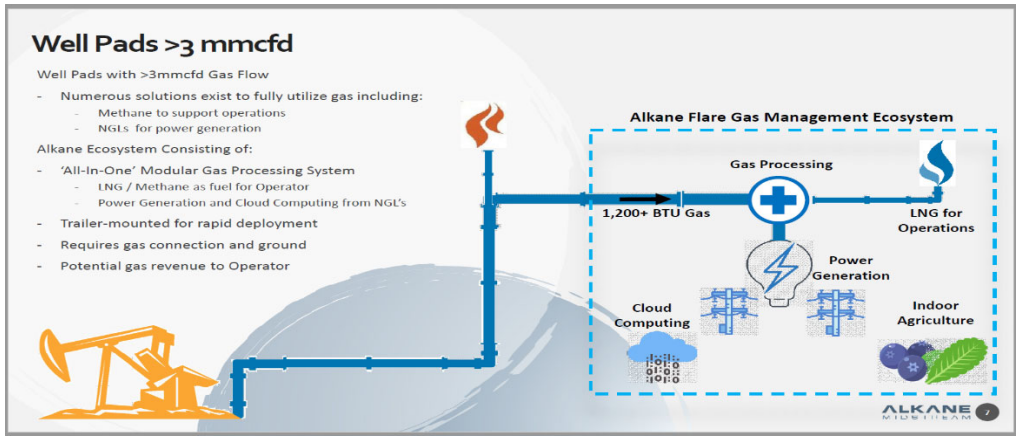


Energy Development and Transition Committee Meeting Minutes (Oct 6, 2020), at app. D, slide 6.

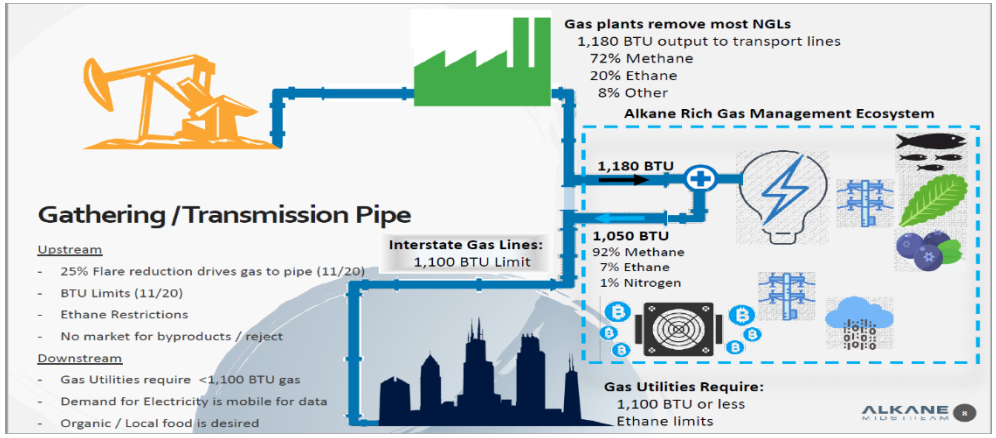
The photo below depicts a version of Alkane's Flare Gas Management systems installed at a site in Seminole, TX. As shown in this photo, the system includes one or more generators (red arrow) that are used to generate electrical power, which is in turn used to power a distributed computing system (red box).

		 Google Maps, June 2020 (last visited: Aug. 16, 2022), Alkane Midstream Seminole, TX (placed by owner), available at: https://www.google.com/maps/place/Alkane+Midstream/@32.6528598,-102.8162514,3a,75y,90t/data=!3m8!1e2!3m6!1sAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv!2e10!3e12!6shttps:%2F%2Flh5.googleusercontent.com%2Fp%2FAF1QipMZuo9AubVyF6n5Rok2FAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv%3Dw203-h152-k-no!7i3968!8i2976!4m7!3m6!1s0x86fc899ec4647283:0xdcc54f7ac60124dd!8m2!3d32.6526757!4d-102.8162529!14m1!1BCgIgARICEAE
	1(b): "a power generation module adapted to:"	Alkane's system includes *a power generation module*. Specifically, as explained above with respect to element 1(a), Alkane's system includes multiple generators that are used to convert natural gas into electrical power.
	1(c): "receive a fuel gas stream comprising a fuel gas associated with a gas profile, the fuel gas	Each of the generators in Alkane's system *receives a fuel gas stream comprising a fuel gas associated with a gas profile, the fuel gas having a heat value of at least about 1,000 Btu/scf*. A person of ordinary skill in the art would understand the term *gas profile* to refer to the physical and chemical characteristics of the gas. Such characteristics would include, for example, the composition

	having a heat value of at least about 1,000 Btu/scf; and”	and the heat-value of the gas, among other things. Accordingly, a person of ordinary skill in the art would understand that any fuel gas has an associated gas profile. Indeed, the profile of a fuel gas is an inherent property of the gas mixture. As shown in the three figures below, natural gas with a heat value of at least 1,000 BTU/scf flows into the Power Generation sub-system, which—as explained above with respect to elements 1(a) and 1(b)—includes *a power generation module.* Specifically, the first two figures included below illustrate that natural gas with a heat value of “1,200+ BTU” flows into the Power Generation sub-system. Similarly, the third figure illustrates that natural gas with a heat value over 1,000 BTU—either 1,180 BTU or 1,050 VTU—flows into the Power Generation sub-system.  *Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020), at app. D, slide 6.



Energy Development and Transition Committee Meeting Minutes (Oct 6, 2020), at app. D, slide 7.

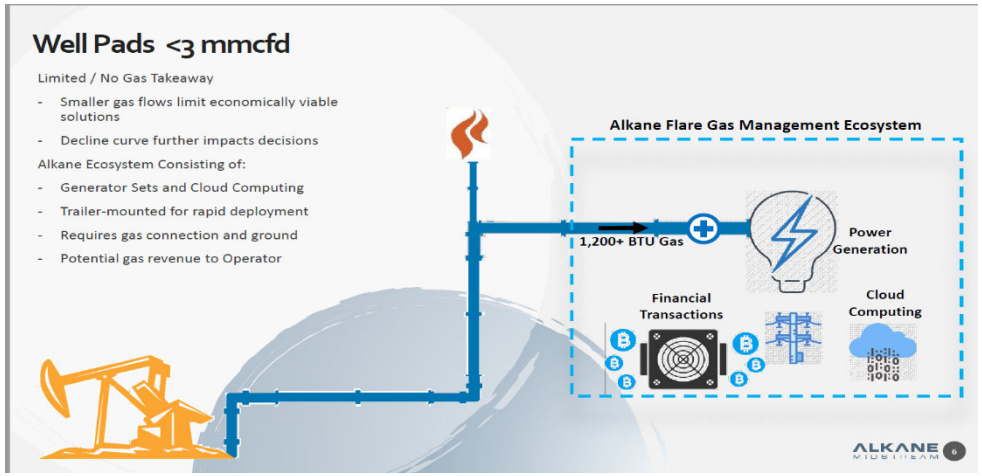


Energy Development and Transition Committee Meeting Minutes (Oct 6, 2020), at app. D, slide 8.

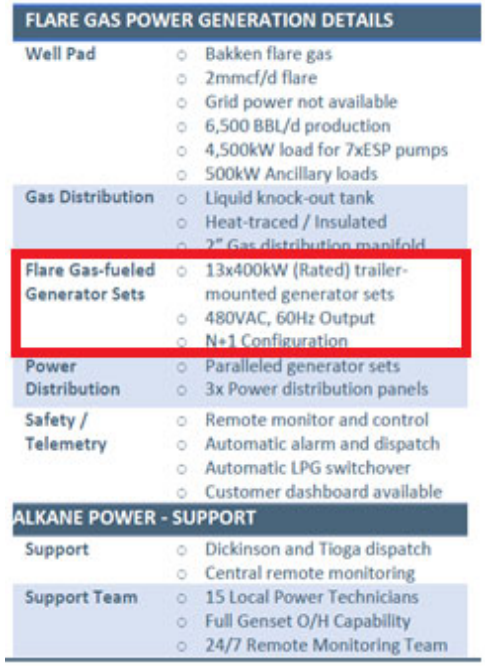
The photo included below depicts a version of Alkane's Flare Gas Management systems installed at a site in Seminole, TX. As shown in the photo, the system includes a fuel gas stream in the form of liquid natural gas or compressed natural gas (identified by the red arrow) that flows to one or more generators (identified by the red box).

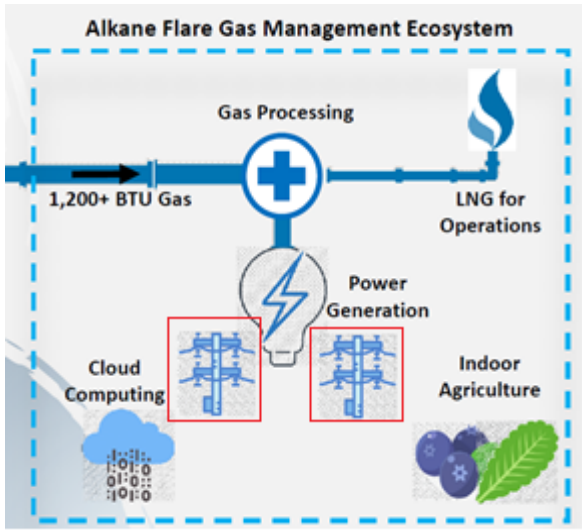
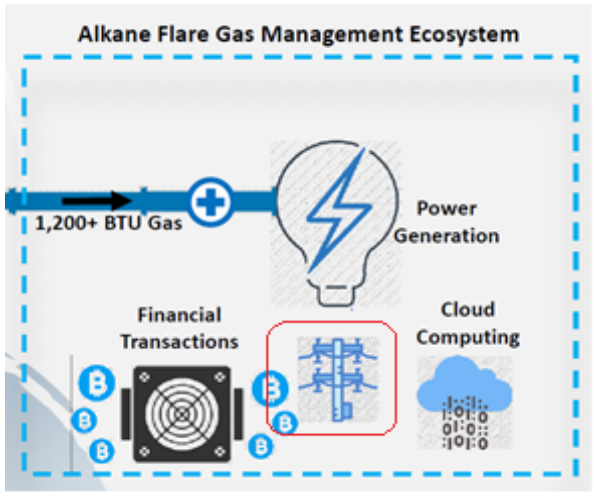


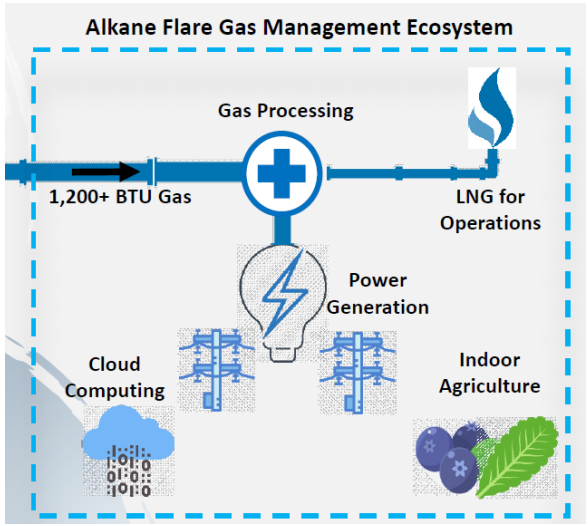
Google Maps, June 2020 (last visited: Aug. 16, 2022), Alkane Midstream Seminole, TX (placed by owner), available at: https://www.google.com/maps/place/Alkane+Midstream/@32.6528598,-102.8162514,3a,75y,90t/data=!3m8!1e2!3m6!1sAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv!2e10!3e12!6shttps:%2F%2Flh5.googleusercontent.com%2Fp%2FAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv%3Dw203-h152-k-no!7i3968!8i2976!4m7!3m6!1s0x86fc899ec4647283:0xdcc54f7ac60124dd!8m2!3d32.6526757!4d-102.8162529!14m1!1BCgIgARICEAE

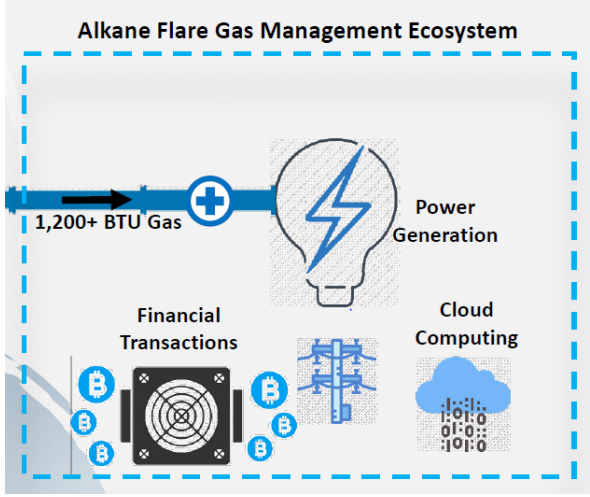
	1(d): "consume the fuel gas stream to generate a high-voltage electrical output associated with a first voltage; and"	Alkane's system uses generators that *consume the fuel gas* **stream** *to generate a high-voltage electrical output associated with a first voltage*. As explained above with respect to elements 1(a) and 1(b), the Power Generation sub-system of Alkane's system includes one or more generators that convert natural gas into electrical power, which is in turn used to power a distributed computing system. This is further illustrated in the figure included below, which depicts a fuel gas stream flowing into the Power Generation sub-system, which is then converted to electrical power that is output by the Power Generation sub-system. A person of ordinary skill in the art would understand from this figure that the Power Generation sub-system *consumes the fuel gas stream to generate* electrical power.  *Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020), at app. D, slide 6. The photo included below, which illustrates a version of Alkane's system installed at a site in Seminole, TX, depicts Taylor Power Systems® gas generators. According to the specification for these generators, they generate an electrical power output between 400-450 kW, though the specific output voltage depends on the configuration in which the generators are being operated. Alkane's product literature—an excerpt of which is also included below—indicates the generators used in Alkane's systems are configured to have an output volage of "480 VAC." This is consistent with what the specification of the '307 Patent describes as *a high-voltage electrical output associated with a first*

		voltage. Specifically, the specification describes "a high-voltage electrical output" as one that ranges "from about 70kW to about 2MW" and a "first voltage" associated with that output as one that ranges "from about 480 V to about 4.16 kV." *See* '307 Patent at 3:22-28. Thus, a person of ordinary skill in the art would understand the electrical output of the generators used by Alkane to be *a high-voltage electrical output associated with a first voltage*.  *Google Maps*, June 2020 (last visited: Aug. 16, 2022), Alkane Midstream Seminole, TX (placed by owner), available at: https://www.google.com/maps/place/Alkane+Midstream/@32.6528598,-102.8162514,3a,75y,90t/data=!3m8!1e2!3m6!1sAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv!2e10!3e12!6shttps:%2F%2Flh5.googleusercontent.com%2Fp%2FAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv%3Dw203-h152-k-no!7i3968!8i2976!4m7!3m6!1s0x86fc899ec4647283:0xdcc54f7ac60124dd!8m2!3d32.6526757!4d-102.8162529!14m1!1BCgIgARICEAE

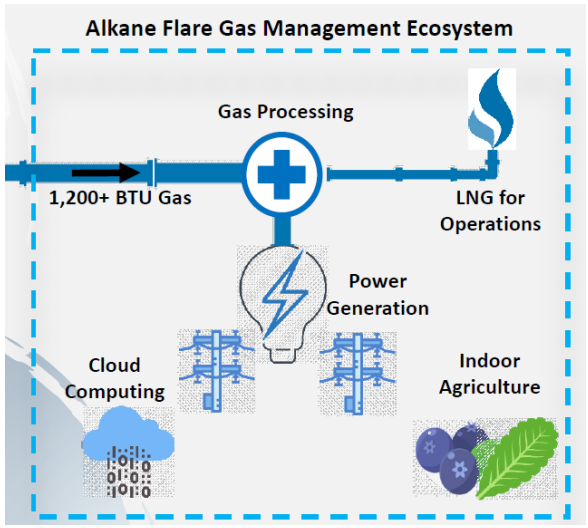
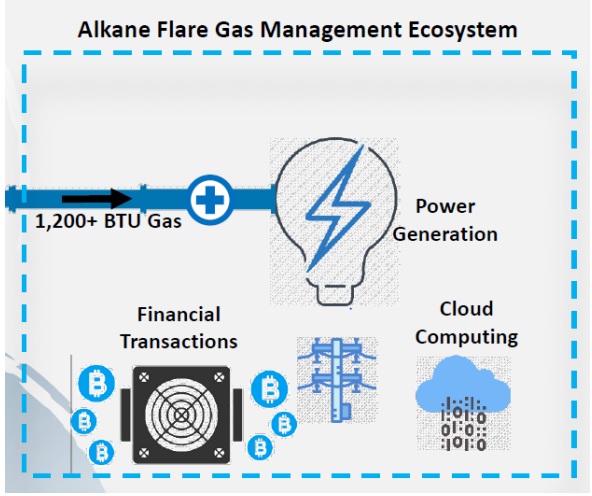
		 Alkane Midstream, Leaflet, *Power Profile Pad Power with Flare Gas*.
	1(e): "an electrical transformation module in electrical communication with the power generation module, the electrical transformation module adapted to: receive the high-voltage electrical output generated by the power generation module; and	Alkane's system includes *an electrical transformation module in electrical communication the power generation module*. As explained above with respect to element 1(a)-(d), Alkane's system includes a *power generation module*, which is labeled as the Power Generation sub-system in the figures from Alkane's October 6, 2020 presentation. The figures below from Alkane's October 6, 2020 presentation also illustrate a transformer (outlined in red) that sits between and is in communication with the "Power Generation" sub-system and the distributed computing system. The distributed computing system in these figures is illustrated as being used for "Financial Transactions" and "Cloud Computing."

	transform the high-voltage electrical output into a low-voltage electrical output associated with a second voltage that is lower than the first voltage;"	 *Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020), at app. D, slide 7.  *Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020), at app. D, slide 6.

		A person of ordinary skill in the art would understand that a transformer (or equivalent component) must necessarily be included for the system to operate. As explained above with respect to element 1(d), Alkane's Power Generation sub-system includes one or more generators that generate an electrical output of 480 V. Passing a 480 V output directly to the distributed computing system would cause damage to the computing system. Thus, the electrical output of the Power Generation sub-system must first pass through a transformer to step-down the voltage to a level that can be used to power the distributed computing system.
	1(f): "a distributed computing system powered by the electrical power generation system, the distributed computing system comprising:"	Alkane's system includes *a distributed computing system powered by the electrical power generation system*. As explained above with respect to elements 1(a)-(d), Alkane's system includes a Power Generation sub-system that generates electrical power that is used to power a distributed computing system. The figures included below, which are excerpted from Alkane's October 6, 2020 presentation, illustrate both the Power Generation sub-system and the distributed computing system that it powers, which (in these figures) is used for computing operations relating to "Financial Transactions" and "Cloud Computing." 

		Energy Development and Transition Committee Meeting Minutes (Oct 6, 2020), at app. D, slide 7.  *Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020), at app. D, slide 6. The photo below, which illustrates a version of Alkane's system installed at a site in Seminole, TX, shows a distributed computing system (identified by a red arrow) in electrical connection with the Power Generation sub-system (identified by the red box). Indeed, there is no other observable mechanism or sub-system in this installation that could supply power to the distributed computing system.

		 *Google Maps*, June 2020 (last visited: Aug. 16, 2022), Alkane Midstream Seminole, TX (placed by owner), available at: https://www.google.com/maps/place/Alkane+Midstream/@32.6528598,-102.8162514,3a,75y,90t/data=!3m8!1e2!3m6!1sAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv!2e10!3e12!6shttps:%2F%2Flh5.googleusercontent.com%2Fp%2FAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv%3Dw203-h152-k-no!7i3968!8i2976!4m7!3m6!1s0x86fc899ec4647283:0xdcc54f7ac60124dd!8m2!3d32.6526757!4d-102.8162529!14m1!1BCgIgARICEAE
	1(g): "a communications system comprising one or more data satellite antennas, the communications system adapted to	The distributed computing system in Alkane's system includes *a communications system comprising one or more data satellite antennas adapted to provide a network.* The figures included below from Alkane's October 6, 2020 presentation indicate that the distributed computing system included in Alkane's Flare Gas Management system is used to perform computing operations related to "Financial Transactions" and/or "Cloud Computing."

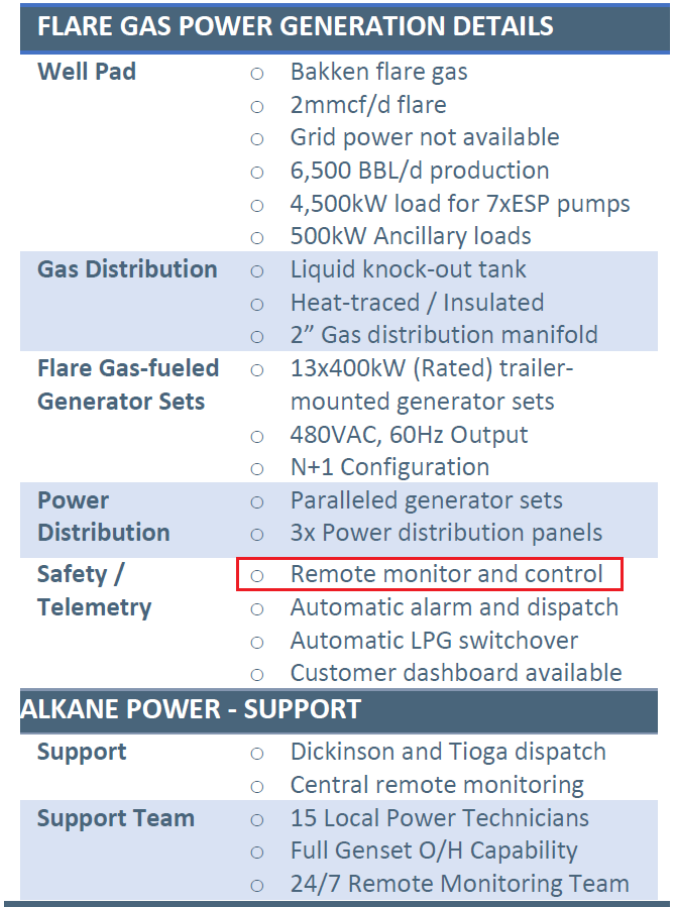
	provide a network; and”	 *Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020), at app. D, slide 7.  *Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020), at app. D, slide 6. In order to perform such computing operations, the distributed computing system must necessarily include a communications system that connects the distributed computing system to a communications

		network.[2] Based on a review of Alkane's materials, most (if not all) of Alkane's systems are installed in remote locations where a broadband or other wired network connection would not be available. Thus, the communications system would require data satellite antennas or an equivalent thereto to establish a network connection. The photo below, which illustrates a version of Alkane's system installed at a site in Seminole, TX, shows data satellite antennas or their equivalent (indicated by the red arrow).  *Google Maps*, June 2020 (last visited: Aug. 16, 2022), Alkane Midstream Seminole, TX (placed by owner), available at: https://www.google.com/maps/place/Alkane+Midstream/@32.6528598,-102.8162514,3a,75y,90t/data=!3m8!1e2!3m6!1sAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv!2e10!3e12!6shttps:%2F%2Flh5.googleusercontent.com%2Fp%2FAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv%3Dw203-h152-k-no!7i3968!8i2976!4m7!3m6!1s0x86fc899ec4647283:0xdcc54f7ac60124dd!8m2!3d32.6526757!4d-102.8162529!14m1!1BCgIgARICEAE

[2] The figures illustrating Alkane's system link the "Financial Transactions" performed by the distributed computing system to Bitcoin mining because the Bitcoin logo is depicted around "Financial Transactions." The following two references state that Bitcoin mining operations require a network connection. *See* Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, 2–4 (2008); Arvind Narayanan et al., *Bitcoin and Cryptocurrency Technologies*, Princeton University Press (forthcoming 2016) (manuscript at 8).

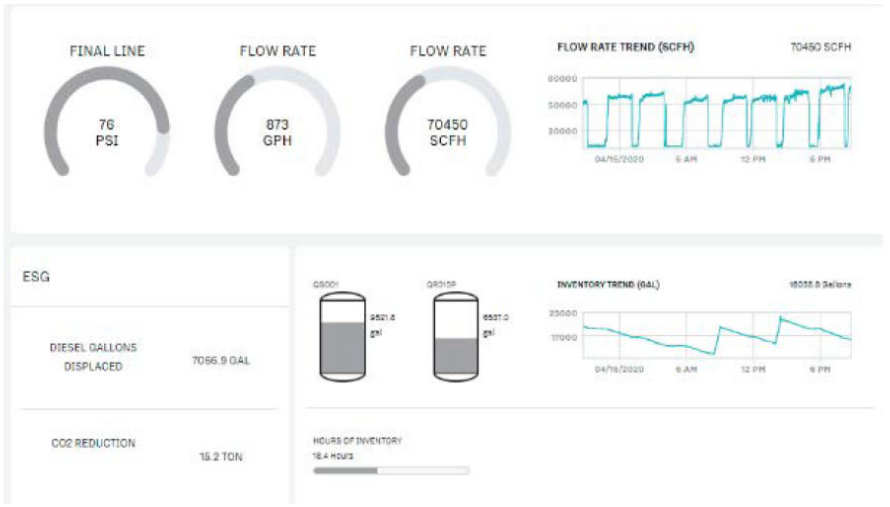
	1(h): "a first mobile data center comprising: an enclosure defining an interior space; a plurality of distributed computing units located within the interior space of the enclosure, each of the plurality of distributed computing units in communication with the network; and"	The distributed computing system of Alkane's system includes *a first mobile data center comprising: an enclosure defining an interior space* and *a plurality of distributed computing units located within the interior space of the enclosure, each of the plurality of distributed computing units in communication with the network.* As shown in the photo below, which illustrates a version of Alkane's system installed at a site in Seminole, TX, the data centers in Alkane's systems are housed in shipping containers (identified by the red arrow). These containers are enclosures that define an interior space.  *Google Maps*, June 2020 (last visited: Aug. 16, 2022), Alkane Midstream Seminole, TX (placed by owner), available at: https://www.google.com/maps/place/Alkane+Midstream/@32.6528598,-102.8162514,3a,75y,90t/data=!3m8!1e2!3m6!1sAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv!2e10!3e12!6shttps:%2F%2Flh5.googleusercontent.com%2Fp%2FAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv%3Dw203-h152-k-no!7i3968!8i2976!4m7!3m6!1s0x86fc899ec4647283:0xdcc54f7ac60124dd!8m2!3d32.6526757!4d-102.8162529!14m1!1BCgIgARICEAE As explained above with respect to elements 1(f)-(g), materials relating to Alkane's Flare Gas Management system indicate that the distributed computing system is used to perform computing

		operations related to Financial Transactions (such as Bitcoin mining) and Cloud Computing. Such operations would not be profitably performed with a single distributed computing unit, nor with a computing unit that has no network connection. Thus, Alkane's distributed computing system must necessarily include *a plurality of distributed computing units in communication with the network*.
	1(i): "a power system located at least partially within the interior space of the enclosure, the power system in electrical communication with the electrical transformation module and the plurality of distributed computing units such that the power system receives the low-voltage electrical output and powers each of the plurality of distributed computing units; and"	The first mobile data center of Alkane's system includes *a power system located at least partially within the interior space of the enclosure.* Further, the power system is (a) *in electrical communication with the electrical transformation module and the plurality of distributed computing units*, and (b) *receives the low-voltage electrical output and powers each of the plurality of distributed computing units*. As explained above with respect to element 1(e), Alkane's system includes a transformation module that steps-down the voltage of the high-voltage electrical output to a second, lower voltage that can be used to power the distributed computing system. In order to power the distributed computing units within the mobile data center, that transformer must necessarily be in electrical communication with a power system within the mobile data center such that it receives the low-voltage output from the transformer. The power system in the mobile data center must in turn be in electrical communication with the distributed computing units such that it powers each of the distributing computing units using the low-voltage electrical output from the transformer. If these components of the system are not in electrical communication with one another, the system would not function.
	1(j): "a monitoring and control system in communication with the electrical power generation system and the distributed	Alkane's system includes *a monitoring and control system in communication with the electrical power generation system and the distributed computing system via the network.* Alkane's product literature (excerpted below) demonstrates that Alkane's system includes remote monitoring and control capabilities. To enable ***remote*** monitoring and control, the monitoring and

	computing system via the network, the monitoring and control system adapted to:"	control system must be connected to a communications network, such as the one provided by the communications sub-system discussed above with respect to element 1(g).  *Alkane Midstream, Leaflet, Power Profile Pad Power with Flare Gas.*

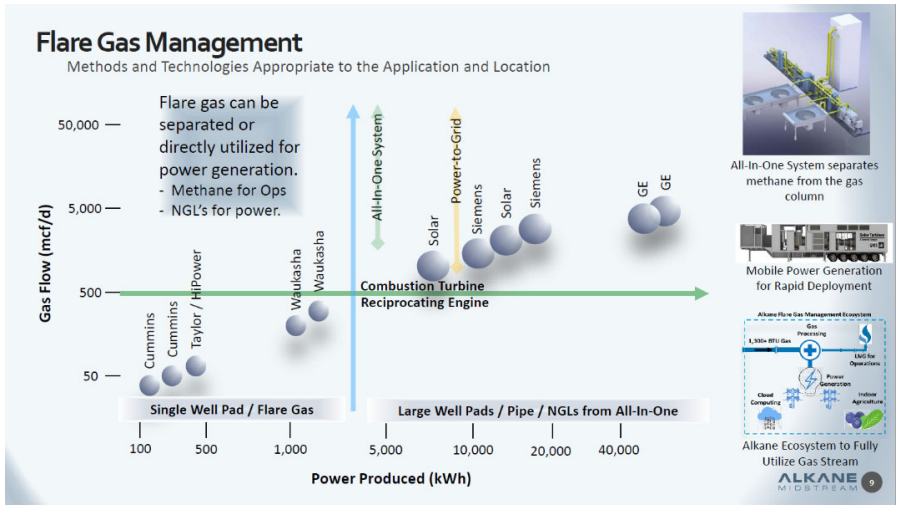


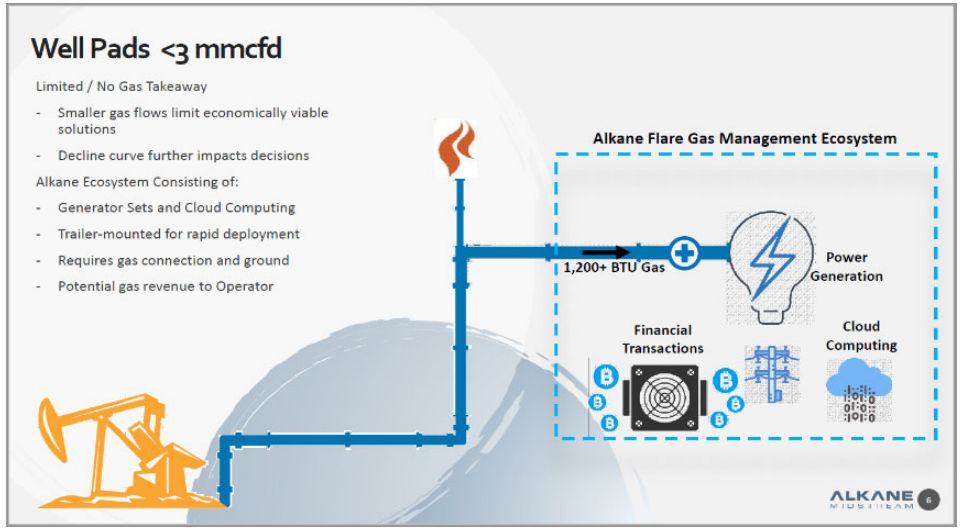
Alkane Midstream, Leaflet, Power Profile Pad Power with Flare Gas.

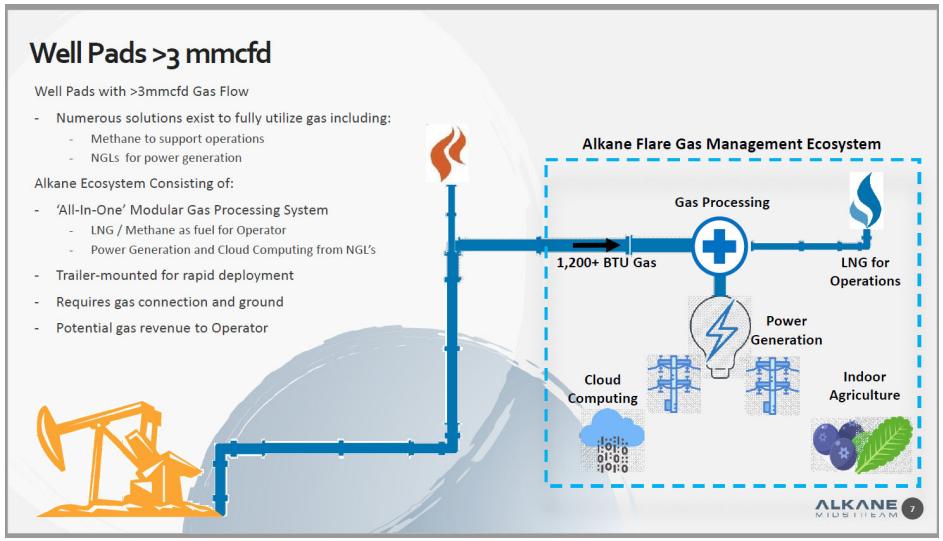
		Remote Monitoring  *Energy Development and Transition Committee Meeting Minutes (Oct 6, 2020), at app. D, slide 17.*
	1(k). "monitor the gas profile of the fuel gas received by the electrical power generation system; and upon determining a change in the gas profile, automatically modulate an electrical load of the distributed computing system."	The monitoring and control system is *adapted to: monitor the gas profile of the fuel gas received by the electrical power generation system, and upon determining a change in the gas profile automatically modulates an electrical load of the distributed computing system.* As explained above with respect to element 1(j), Alkane's system includes a monitoring and control system in communication with the electrical power generation system. And as explained above with respect to element 1(c), a person of ordinary skill in the art would understand the term *gas profile* to refer to the physical and chemical characteristics of the gas, including but not limited to the composition of the gas. A person having ordinary skill in the art would understand that it is necessary to monitor the gas profile of the flare gas stream, and in particular its composition, given that a flare gas stream's composition varies over time. A person of ordinary skill in the art would further understand that changes in the composition of the flare gas stream would require that the ability to modify one or more operational parameters of the system based on changes in the composition. Such operational parameters would include, among other things, the electrical load of the distributed computing system. In light of Alkane's disclosure (excerpted below) that its systems include a "remote monitor and control"

		capabilities, and Alkane's marketing of its systems as "turn-key fuel, power and stranded gas solutions" it is likely that modification of operational parameters—including modulating an electrical load of the distributed computing system—in response to changes in the gas profile would be automated. Alkane Midstream provides virtual pipeline solutions for natural gas in the Williston Basin. We provide turn-key fuel, power and stranded gas solutions, helping customers save money and increase production while reducing their environmental impact. Alkane Midstream, Leaflet, *Power Profile Pad Power with Flare Gas*.
2.	2(a): "A system according to claim 1, wherein: the power generation module comprises an engine-type generator;"	As explained above with respect to claim 1, Alkane's system includes multiple power generation modules (*i.e.*, generators). One or more of those generators is *an engine-type generator*. The photo below, which illustrates a version of Alkane's system installed at a site in Seminole, TX, depicts Taylor Power Systems® gas generators, which are engine-type generators.

		 *Google Maps*, June 2020 (last visited: Aug. 16, 2022), Alkane Midstream Seminole, TX (placed by owner), available at: https://www.google.com/maps/place/Alkane+Midstream/@32.6528598,-102.8162514,3a,75y,90t/data=!3m8!1e2!3m6!1sAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv!2e10!3e12!6shttps:%2F%2Flh5.googleusercontent.com%2Fp%2FAF1QipMZuo9AubVyF6n5RokTXcCUeicjX4KhAGfwpukv%3Dw203-h152-k-no!7i3968!8i2976!4m7!3m6!1s0x86fc899ec4647283:0xdcc54f7ac60124dd!8m2!3d32.6526757!4d-102.8162529!14m1!1BCgIgARICEAE Similarly, the figure below from Alkane's October 6, 2020 presentation indicates that the Taylor generators used in Alkane's system are engine-type generators. Specifically, the figure includes a green line running through the middle and a notation indicating that the generators below the line—such as the Taylor generators—are "reciprocating engine" generators, while those above the line are "combustion turbine" generators.

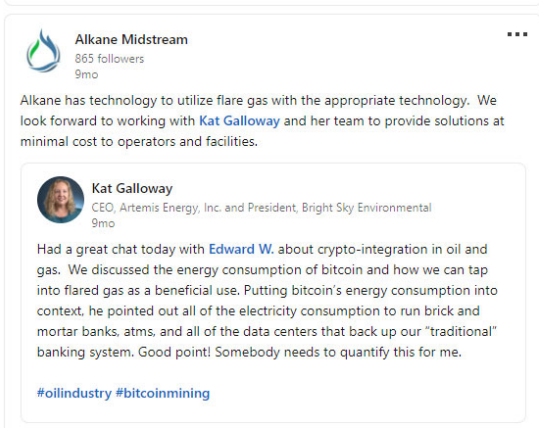
		 *Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020), at app. D, slide 9.
	2(b): "the high-voltage electrical output is from about 70 kW to about 2 MW; and the first voltage is from about 480 V to about 4.16 kV"	The *high-voltage electrical output generated by the engine-type generator* of Alkane's system *is from about 70kW to about 2MW, and the first voltage is from about 480V to about 4.16kV.* As explained above with respect to element 1(d), the generators used in Alkane's system generate an electrical output of 400-450 kW at a voltage of 480 VAC.
3.	"A system according to claim 2, wherein the second voltage is from about 208 V to about 240 V."	In Alkane's system, the second voltage (*i.e.*, the voltage associated with the electrical output from the transformation module) is *from about 208 V to about 240 V*. A person of skill in the art would understand the distributed computing units in Alkane's system to be standard, distributed computing units, which require an input voltage in the range of *from about 208 V to about 240 V*. Accordingly, the transformation module of Alkane's system, which steps-down the high-voltage output from the gas generators, would necessarily be within the range of about 208 V to about 240 V.

14.	" A system according to claim 1, wherein the plurality of distributed computing units are adapted to mine a cryptocurrency."	The distributed computing units of Alkane's system *are adapted to mine a cryptocurrency*. The figures included below from Alkane's October 6, 2020 presentation illustrate that the distributed computing units of Alkane's system are used to perform computing operations relating to "Financial Transactions." Further, the inclusion of the Bitcoin logo in and around the illustration of the computing equipment used for "Financial Transactions" indicates that the operations performed by those distributed computing units involve cryptocurrency mining.  *Energy Development and Transition Committee Meeting Minutes* (Oct 6, 2020), at app. D, slide 6.



Energy Development and Transition Committee Meeting Minutes (Oct 6, 2020), at app. D, slide 7.

In addition, a LinkedIn user posted in August 2022 about a conversation she had with an Alkane representative about Alkane's cryptocurrency mining capabilities.



		Alkane Midstream, LinkedIn (last visited: Aug 3, 2022), available at: https://www.linkedin.com/company/alkane.