APPENDIX A TO THE STAFF REPORT

PROPOSED REGULATION ORDER

Note: The pre-existing regulation text is set forth below in normal type. The proposed amendments are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions. The symbol "***" means that intervening text not proposed for amendment is not shown.

PROPOSED AMENDMENTS TO THE REGULATION FOR THE MANDATORY REPORTING OF GREENHOUSE GAS EMISSIONS

Amend Division 3, Chapter 1, Subchapter 10, Article 2, sections 95101, 95102, 95103, 95104, 95111, 95112, 95113, 95114, 95115, 95119, 95121, 95122, 95124, 95130, 95131, 95132, 95133, 95152, 95153, 95156, 95157, and Appendix A, title 17 California Code of Regulations to read as follows:

Article 2: Mandatory Greenhouse Gas Emissions Reporting

Subarticle 1. General Requirements for Greenhouse Gas Reporting

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§ 95101. Applicability.

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(c) *Fuel and Carbon Dioxide Suppliers.* The suppliers listed below, as defined in section 95102(a), are required to report under this article when they produce, import and/or deliver an annual quantity of fuel that, if completely combusted, oxidized, or used in other processes, would result in the release of greater than or equal to 10,000 metric tons of CO_2e in California, unless otherwise specified in this article:

(1) Position holders at terminals and refiners delivering petroleum fuels and/or biomass-derived fuels, as described in section 95121;

(2) Enterers that import transportation~~petroleum~~ fuels outside the bulk transfer/terminal system, as described in section 95121, and biofuel production facilities that produce and deliver transportation fuels outside the bulk/terminal system, as described in section 95121;

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NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95102. Definitions.

(a) For the purposes of this article, the definitions in subsections (a), (b), and (c) shall apply. Subsection (b) is specific to product data definitions. Subsection (c) is specific to definitions regarding refining and related processes.

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~~(29) "Barrel of oil equivalent," with respect to reporting of oil and gas production, means barrels of crude oil produced, plus associated gas and dry gas produced, converted to barrels at 5.8 MMBtu per barrel.~~

*** [No changes except to renumber]

(34) “Biofuel production facility” means a production facility that produces one or more of the following biomass-derived transportation fuels: ethanol, biodiesel, renewable diesel, rendered animal fat, or vegetable oil.

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(49) “Bulk transfer/terminal system” means a fuel distribution system consisting of refineries, pipelines, vessels, and terminals. Fuel storage and blending facilities that are not fed by pipeline or vessel are considered outside the bulk transfer system.

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~~(55) “By-product hydrogen” means hydrogen produced as a result of a process or processes dedicated to producing other products (e.g. catalytic reforming).~~

*** [No changes except to renumber]

~~(58) “Calcined coke” means petroleum coke purified to a dry, pure form of carbon suitable for use as anode and other non-fuel applications.~~

*** [No changes except to renumber]

(63) “California Reformulated Gasoline Blendstock for Oxygenate Blending” or “CARBOB” has the same meaning as defined in title 13 of the California Code of Regulations, section 2260(a).

*** [No changes except to renumber]

(82) “Coal coke” means a solid residue high in carbon content produced by the destructive distillation of coal at high temperatures in either a by-product coke oven battery or a non-recovery coke oven battery.

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(111) "Crude oil" means a mixture of hydrocarbons that exists in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Depending upon the characteristics of the crude stream, it may also include any of the following:

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(D) Petroleum products that are received or produced at a refinery and subsequently injected into a crude supply or reservoir by the same refinery owner or operator.

Liquids produced at natural gas processing plants and natural gas fractionating facilities are excluded, unless the produced natural gas liquids are extracted from produced gas, associated gas, and waste gas at a facility and re-injected into barrels of crude oil produced by the same facility. Crude oil is refined to produce a wide array of petroleum products, including heating oils; gasoline, diesel and jet fuels; lubricants; asphalt; ethane, propane, and butane; and many other products used for their energy or chemical content.

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(113) "Customer meter" means natural gas meter, riser, and fittings at residential, commercial, or industrial premise(s).

*** [No changes except to renumber]

(125~~124~~) "Distillate fuel oil" means a classification for one of the petroleum fractions produced in conventional distillation operations and from crackers and hydrotreating process units. The generic term distillate fuel oil includes kerosene (EIA product code 311), kerosene-type jet fuel (EIA product codes 213, 217, and 218), diesel fuels (Diesel Fuels No. 1, No. 2, and No. 4; EIA product codes 465, 466, and 467), and fuel oils (Fuel Oils No. 1, No. 2, and No. 4; EIA product codes 508, 509, and 510).

*** [No changes except to renumber]

(135) "Electrical Distribution Utility(ies)" means an entity that owns and/or operates an electrical distribution system, including: 1) a public utility as defined in the Public Utilities Code section 216 (referred to as an Investor Owned Utility or IOU); or 2) a local publicly owned electric utility (POU) as defined in Public Utilities Code section 224.3; or 3) an Electrical Cooperative (COOP) as defined in Public Utilities Code section 2776, that provides electricity to retail end users in California.

*** [No changes except to renumber]

(216~~214~~) "Gas-to-oil ratio" or "GOR" means the ratio of gas produced from a barrel of crude oil or condensate when cooling and depressurizing these liquids to standard conditions, expressed in terms of standard cubic feet of gas per barrel of oil.

(217~~215~~) "Gas-to-water ratio" or ("GWR")~~," for purposes of Appendix B,~~ means the ratio of gas produced from a barrel of produced water when cooling and depressurizing produced water to standard conditions, expressed in terms of standard cubic feet of gas per barrel of water.

*** [No changes except to renumber]

(268) "Legacy contract" shall have the meaning defined in section 95802(a) of the cap-and-trade regulation.

(269) "Legacy contract transition assistance" means allowances provided under section 95894 of the cap-and-trade regulation to an entity which has applied for allowances on the basis of its legacy contract(s).

*** [No changes except to renumber]

~~(270) "Liquid hydrogen" means hydrogen in a liquid state.~~

*** [No changes except to renumber]

(304~~301~~) "Natural gas liquids" or "NGLs" means those hydrocarbons in natural gas that are separated from the gas as liquids through the process of absorption, condensation, adsorption, or other methods. Natural gas liquids can be classified according to their vapor pressures as low (condensate), intermediate (natural gasoline), and high (liquefied petroleum gas) vapor pressure. Generally, such liquids consist of ethane, propane, butanes, pentanes, and higher molecular weight hydrocarbons. Bulk NGLs refers to mixtures of NGLs that are sold or delivered as undifferentiated product from natural gas processing plants.

*** [No changes except to renumber]

~~(323) "On-purpose hydrogen" means hydrogen produced as a result of a process or processes dedicated to producing hydrogen (e.g., steam methane reforming).~~

*** [No changes except to renumber]

(345) "Pipeline dig-in" means unintentional puncture or rupture to a buried natural gas pipeline during excavation activities.

*** [No changes except to renumber]

~~(357)"Primary refinery products" means aviation gasoline, motor gasoline (finished), motor gasoline blendstocks, kerosene-type jet fuel, distillate fuel oil, renewable liquid fuels, and asphalt. For the purpose of calculating this value for each refinery ARB will convert blendstocks into their finished fuel volumes by multiplying blendstocks by an assumed blending ratio.~~

*** [No changes except to renumber]

~~(428) "Solomon Energy Intensity Index®" or "Solomon EII" or "EII" means a petroleum refinery energy efficiency metric that compares actual energy consumption for a refinery with the "standard" energy consumption for a refinery of similar size and configuration. The "standard" energy consumption is calculated based on an analysis of worldwide refining capacity as contained in the database maintained by Solomon Associates. The ratio of a facility's actual energy to the standard energy is multiplied by 100 to arrive at the Solomon EII for a refinery.~~

~~(429) "Solomon Energy Review" means a data submittal and review conducted by a petroleum refinery and Solomon Associates. This process uses the refinery~~

~~energy utilization, throughput and output to determine the Solomon EII of the refinery.~~

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~~(453) "Thermal host" means the user of the steam or heat output of a cogeneration or bigeneration facility.~~

*** [No changes except to renumber]

(455) "Thermal host" means the user of the steam or heat output of a cogeneration or bigeneration facility.

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(457) "Throughput" for the purposes of Appendix B, means the average volume of liquid processed by a vessel over a period of time, such as barrels per day. The throughput of crude oil or condensate may need to be calculated using the Percent Water Cut. The throughput of crude oil or condensate is calculated as the difference in volume between these liquids and the produced water.

~~(457) "Two-Phase Separator," for purposes of Appendix B, means a pressurized vessel sealed from the atmosphere used to gravimetrically separate crude oil and produced water that still contain entrained gases.~~

~~(458) "Throughput" for the purposes of Appendix B, means the average volume of liquid processed by a vessel over a period of time, such as barrels per day. The throughput of crude oil or condensate may need to be calculated using the Percent Water Cut. The throughput of crude oil or condensate is calculated as the difference between those liquids and the produced water.~~

*** [No changes except to renumber]

(472) "Two-Phase Separator," for purposes of Appendix B, means a pressurized vessel sealed from the atmosphere used to gravimetrically separate crude oil and produced water that still contain entrained gases.

(473) "Type of thermal energy product" means the form in which energy is transferred from a facility producing thermal energy to another facility, or if not transferred, the form in which the energy is used. Types of thermal energy products include steam, hot water, chilled water, and distilled water.

*** [No changes except to renumber]

(b) For the purposes of this article, the following definitions associated with reported product data shall apply:

~~(1) "Activin" means the extract from grape seeds containing concentrations of proanthocyanidin ($C_{31}H_{28}O_{12}$).~~

*** [No changes except to renumber]

(3) "Aluminum alloy" is an alloy in which aluminum is the predominant metal and the alloying elements may typically be copper, magnesium, manganese, zinc, or other elemental additives or any combination of elements added.

(4) "Aluminum and aluminum alloy billet" means a solid bar of nonferrous metal, produced by casting molten aluminum alloys~~, and~~ that is suitable for subsequent rolling, casting, or extrusion.

~~(5) "Aluminum alloy" is an alloy in which aluminum is the predominant metal and the alloying elements may typically be copper, magnesium, manganese, zinc, or other elemental additives or any combination of elements added.~~

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(5~~6~~) "Aseptic preparation" is ~~the process by which a sterile (aseptic) product (typically food or pharmaceutical) is packaged in a sterile container in a way that maintains sterility~~ a system in which a product is sterilized before filling into pre-sterilized packs under sterile conditions.

(6~~7~~) "Aseptic tomato paste" means tomato paste packaged using aseptic preparation. Aseptic paste is normalized to 31 percent tomato soluble solids ~~(TSS)~~. Aseptic ~~P~~paste ~~N~~normalized to 31% TSS = (%TSS - ~~5.28~~raw TSS)/(31 - ~~5.28~~raw TSS)

(7~~8~~) "Aseptic whole~~/~~ and diced tomato" means the sum of whole and diced tomatoes packaged using aseptic preparation. Sum of aseptic ~~W~~whole and ~~D~~diced tomatoes = ~~W~~whole ~~T~~tomatoes + (~~D~~diced ~~T~~tomatoes x 1.05))

(8~~9~~) "Baked potato chip" means a potato chip made from potato dough that is rolled to a ~~desired~~ specified thickness, cut into a chip shape and then toasted in an oven.

(9) "Barrel of oil equivalent," with respect to reporting of oil and gas production, means barrels of crude oil produced, plus associated gas and dry gas produced, converted to barrels at 5.8 MMBtu per barrel.

(10) "Bathroom tissue" means a thin, soft, lightweight, sanitized paper used in bathrooms for personal cleanliness. Bathroom tissue is usually sold as a long strip of perforated paper wrapped around a paperboard core.

(11) "Blending component" means a material blended into a primary refinery product, such as n-butane (EIA product codes 249 and 643), isobutane (EIA product codes 247 and 644), butylene (EIA product code 633), isobutylene (EIA product code 634), pentanes plus (EIA product code 220), ethyl tertiary butyl ether (ETBE) (EIA product code 142), methyl tertiary butyl ether (MTBE) (EIA product code 144), other oxygenates (EIA product code 445), and fuel ethanol (EIA product code 141).

(12~~10~~) "Butter" means the product made by gathering the fat ~~or~~of fresh or ripened milk or cream into a mass~~, which~~ that also contains a small portion of other milk constituents.

(13~~11~~) "Buttermilk" means the low-fat portion of milk or cream remaining after ~~it~~ the milk or cream has been churned to make butter.

(14) "Buttermilk powder" means milk powder obtained by drying liquid buttermilk that was derived from the churning of butter and pasteurized prior to condensing. Buttermilk powder has a protein content of no less than 30%. It may not contain, or be derived from, nonfat dry milk, dry whey, or products other than buttermilk, and contains no added preservatives, neutralizing agents, or other chemicals.

(15) "By-product hydrogen gas" means pure hydrogen gas produced as a result of a process or processes dedicated to producing other products (e.g. catalytic reforming).

(16) "Calcined coke" means petroleum coke purified to a dry, pure form of carbon suitable for use as anode and other non-fuel applications.

*** [No changes except to renumber]

(18) "Casein" means a group of proteins found in milk which is coagulated by enzymes and acid to form cheese.

*** [No changes except to renumber]

(23) "Concentrated milk" means the liquid food obtained by partial removal of water from milk. The milkfat and total milk solids contents of the food are not less than 7.5 and 25.5 percent, respectively. It is pasteurized, but is not processed by heat so as to prevent spoilage. It may be homogenized.

(24) "Condensed milk" means the food obtained by partial removal of water only from a mixture of milk and nutritive carbohydrate sweeteners. The finished food contains not less than 8 percent by weight of milkfat, and not less than 28 percent by weight of total milk solids. The quantity of nutritive carbohydrate sweetener used is sufficient to prevent spoilage. The food is pasteurized and may be homogenized.

*** [No changes except to renumber]

(27~~19~~) "Corn chip" is a food product made from masa (ground corn dough) that is rolled to a specific thickness, cut into a chop shape, lightly toasted in an oven, and then deep fried.

(28~~20~~) "Corn curl" is a food product made from a deep-fried extrusion of masa (ground corn dough).

(29~~21~~) "Corn entering wet milling process" means corn entering the process in which feed corn is steeped in liquid in order to help separate the kernel's various components into starch, germ, fiber and protein (gluten) and then process the components into useful products such as starch, syrup, high fructose corn syrup ~~(HFCS)~~, animal feed, and by-products such as gluten meal and germ.

*** [No changes except to renumber]

(31~~23~~) "Dairy product solids for animal feed" means modified dairy products (permeates and products derived there from) processed for animal consumption obtained by the removal of water, protein and/or lactose, and/or minerals from milk.

~~(24) "Deproteinized whey" means products manufactured through the cold ultrafiltration of sweet dairy whey, removing a portion of the protein from sweet whey to result in a non-hygroscopic, free-flowing and clean flavored powder containing greater than 80% carbohydrate (lactose) levels.~~

~~(25) "Diced Tomatoes" is the food prepared from mature tomatoes conforming to the characteristics of the fruit Lycopersicum esculentum P. Mill, of red or reddish varieties. The tomatoes are peeled and diced, and shall have had the stems and calicies removed and shall have been cored, except where the internal core is insignificant to texture and appearance.~~

~~(26) "Distillate products" means a spirit made from the separation of alcohol and a fermented product.~~

~~(27) "Dolime" is calcined dolomite.~~

(32~~28~~) "Dehydrated chili pepper~~s~~" means chili pepper~~s~~ that has~~have~~ been dehydrated to no more than 12 percent water by volume in order to extend the shelf life and to concentrate the flavor. ~~Dehydrated chili peppers are processed to remove moisture to no more than 12% water by weight.~~ Chili peppers are the fruit of plants from the genus *Capsicum*, and are members of the nightshade family~~,~~ *Solanaceae*~~Solanaceae~~.

(33~~29~~) "Dehydrated garlic" means garlic that has been dehydrated to no more than 6.8 percent water by volume in order to extend the shelf life and to concentrate the flavor. ~~Dehydrated garlic is processed to remove moisture to no more than 6.8% water by weight.~~ Garlic is an onion-like plant *(Allium sativum)* having a bulb that breaks up into separable cloves with a strong distinctive odor and flavor.

(34~~30~~) "Dehydrated onion~~s~~" mean onion~~s~~ that has~~have~~ been dehydrated to no more than 5.5 percent water by volume in order to extend the shelf life and to concentrate the flavor. ~~Dehydrated onions are processed to remove moisture to no more than 5.5% water by weight.~~ Onion (*Allium cepa*~~Allium cepa~~) is a plant that has a fan of hollow, bluish-green leaves and the bulb at the base of the plant begins to swell when a certain day-length is reached. ~~In the autumn the foliage dies down and the outer layers of the bulb become dry and brittle.~~

(35~~31~~) "Dehydrated parsley" means parsley that has been dehydrated to no more than 5 percent water by volume in order to extend the shelf life and to concentrate the flavor. ~~Dehydrated parsley is processed to remove moisture to no more than 5% water by weight.~~ Parsley (*Petroselinum crispum* ~~Petroselinum crispum~~) is a species of *Petroselinum* in the family *Apiaceae*~~Apiaceae~~ widely cultivated as an herb, a spice, and a vegetable.

(3632) "Dehydrated spinach" means spinach that has been dehydrated to no more than 7 percent water by volume in order to extend the shelf life and to concentrate the flavor. ~~Dehydrated spinach is processed to remove moisture to no more than 7% water by weight.~~ Spinach (*Spinacia oleracea*) is an edible flowering plant in the family of *Amaranthaceae*~~Amaranthaceae~~.

(37) "Delicate task wiper" means tissue-based wipers used for the delicate cleaning of lenses, surfaces, and equipment in labs, research facilities, hospitals, and manufacturing settings.

(38) "Deproteinized whey" means products manufactured through the cold ultrafiltration of sweet dairy whey, removing a portion of the protein from sweet whey to result in a non-hygroscopic, free-flowing and clean flavored powder containing greater than 80% carbohydrate (lactose) levels.

(39) "Diced Tomatoes" means the food prepared from mature tomatoes conforming to the characteristics of the fruit *Lycopersicum esculentum* P. Mill, of red or reddish varieties. The tomatoes are peeled and diced, and shall have had the stems and calicies removed and shall have been cored, except where the internal core is insignificant to texture and appearance.

(40) "Distilled spirit" means a spirit made from the separation of alcohol and a fermented product.

(41) "Dolime" is calcined dolomite.

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~~(34) "Dry whey protein concentrate" means the substance obtained by the removal of sufficient non-protein constituents from pasteurized whey so that the finished dry product contains not less than 25 percent or more than 89.9 percent protein, and not more than 5.0 percent moisture. DWPC is produced by physical separation techniques such as precipitation or ultrafiltration. High protein concentration typically requires diafiltration in addition to filtration. The acidity of WPC may be adjusted by the addition of safe and suitable pH adjusting ingredients.~~

*** [No changes except to renumber]

(44) "EIA product code" means the code used to report a specific product to the U.S. Energy Information Administration (EIA) through EIA reporting forms.

~~(36) "Evaporated milk" means the liquid food obtained by partial removal of water only from milk.~~

(45) "Facial Tissue" means a class of soft, absorbent, disposable tissue papers that is suitable for use on the face.

(4637) "Fiberglass ~~glass~~ pulled" means the quantity of glass removed from the melting furnace in the fiberglass manufacturing process where "fiberglass" is defined as insulation products for thermal, acoustic, and fire applications manufactured using glass.

*** [No changes except to renumber]

(52) "Grape juice concentrate" means the liquid from crushed grapes, from the botanical genus Vitas, processed to remove water.

(53) "Grape seed extract" means the extract from grape seeds containing concentrations of proanthocyanidin.

(5444) "Gypsum" means a ~~very soft sulfate~~ mineral ~~composed of calcium sulfate dihydrate,~~ with the chemical formula $CaSO_4 \cdot 2H_2O$.

*** [No changes except to renumber]

(57) "Imported protein" means protein found in pre-concentrated whey that is imported from other dairy facilities for further processing.

(5847) "Intermediate dairy ingredients" means intermediate (non-final) dairy product imported from other dairy facilities that ~~feedstock~~ enter~~ing~~ the rehydrating process, which ~~using~~uses water and heat to manufacture powdered products.

(5948) "Lactose ~~(milk sugar)~~" means a white to creamy white crystalline product, possessing a mildly sweet taste. It may be anhydrous, contain one molecule of water of hydration, or be a mixture of both forms.

(6049) "Lager beer" means beer produced with bottom fermenting yeast strains, *Saccharomyces uvarum*~~Saccharomyces uvarum~~ (or *carlsbergensis* ~~carlsbergensis~~) at colder fermentation temperatures than ales.

(6150) "Lead and lead ~~alloy~~alloys" means lead or the metal alloy that combines lead and other elements such as antimony, selenium, arsenic, copper, tin, or calcium.

(6251) "Limestone" means a sedimentary rock composed largely of the minerals calcite and aragonite, which are different crystal forms of calcium carbonate ($CaCO_3$~~3~~).

(6352) "Liquid Color Concentrate" means a fluid extract from fruits and vegetables reduced by driving off water and ~~whose uses are~~ the use of which is for altering the color of materials and/or food.

(64) "Liquid Hydrogen" means hydrogen in a liquid state.

*** [No changes except to renumber]

(67) "Nonfat dry milk and skimmed milk powder (high heat)" means milk powder obtained by removing water from pasteurized skim milk. It contains no more than 5% moisture (by weight) and no more than 1.5% milkfat (by weight). It is derived from cumulative heat treatment of 88 ºC for 30 minutes and includes undenatured whey protein nitrogen content equal to or less than 1.5 mg/g powder.

(68) "Nonfat dry milk and skimmed milk powder (low heat)" means milk powder obtained by removing water from pasteurized skim milk. It contains no more than 5% moisture (by weight) and no more than 1.5% milkfat (by weight). It is

derived from cumulative heat treatment of milk no higher than 70 ºC for 2 minutes and includes undenatured whey protein nitrogen content equal to or greater than 6 mg/g powder.

(69) "Nonfat dry milk and skimmed milk powder (medium heat)" means milk powder obtained by removing water from pasteurized skim milk. It contains no more than 5% moisture (by weight) and no more than 1.5% milkfat (by weight). It is derived from cumulative heat treatment of 70-78 ºC for 20 minutes and includes undenatured whey protein nitrogen content equal to or greater than 1.51 mg/g powder up to 5.99 mg/g powder.

*** [No changes except to renumber]

(7156) "Non-Aaseptic tomato paste and tomato puree" means the sum of tomato paste and tomato puree packaged using methods other than aseptic preparation. Non-Aaseptic paste and puree is normalized to 24 percent tomato soluble solids (TSS). Non-Aaseptic Ppaste and puree Nnormalized to 24% TSS = (%TSS - 5.28raw TSS)/(24 - 5.28raw TSS).

(57) "Non-Aseptic tomato sauce" means tomato sauce packaged using methods other than aseptic preparation. Non-Aseptic tomato sauce is normalized to 24 percent tomato soluble solids (TSS) using TSS = (%TSS - 5.28)/(24 - 5.28).

(7258) "Non-Aaseptic whole/ and diced tomato" means the sum of whole and diced tomatoes packaged using methods other than aseptic preparation. Sum of Non-Aseptic Whole and Diced non-aseptic whole and diced tomatoes = Whole Tomatoes whole tomatoes + (Diced Tomatoesdiced tomatoes x 1.05).

(7359) "Non-thermal enhanced oil recovery" or "non-thermal EOR" means the process of using methods other than thermal EOR, which may include water flooding or CO2CO_2 injection, to increase the recovery of crude oil from a reservoir.

(74) "On-purpose hydrogen gas" means pure molecular hydrogen gas produced by a process or processes dedicated to producing hydrogen (e.g., steam methane reforming).

(75) "Paper Towel" means a disposable towel made of absorbent tissue paper.

*** [No changes except to renumber]

(7761) "Pistachio" means the nuts of the pistachio tree of the genus *Pistacia vera* grown in the production area whether inshell or shelled.

*** [No changes except to renumber]

(8064) "Poultry deli product" means the Productsproducts, including corn dogs, sausages, and franks, that contain a significant portion of pre-processed poultry, that are cooked and sold wholesale or retail, or transferred to other facilities. and are prepared for human consumption (with or without additional cooking required), including sausages and corn dogs.

~~(65) "Powdered milk" means the manufactured dairy product made by evaporating milk to dryness. Powdered milk includes non fat dry milk powder, skimmed milk powder, whole milk powder and buttermilk powder.~~

(81~~66~~) "Pretzel" is a ~~type of baked bread product~~crisp biscuit made from dough ~~made~~formed into a knot or stick, flavored with salt, ~~desired shape. The dough is then~~ passed through a caustic hot water bath and ~~then~~ baked in an oven.

(82) "Primary refinery product" means aviation gasoline (EIA product code 111), motor gasoline (finished) (EIA product codes 125, 127, 130, 149, and 166), motor gasoline blendstocks (EIA product codes 117, 118, 138, and 139), distillate fuel oil (EIA product codes 213, 217, 218, 311, 465, 466, 467, 508, 509, and 510), renewable liquid fuels (EIA product codes 203, 205, and 207), and asphalt (EIA product code 931). For the purpose of calculating this value for each refinery, ARB will convert blendstocks into their finished fuel volumes by multiplying blendstocks by an assumed blending ratio.

(83) "Proof Gallons" means one liquid gallon of distilled spirits that is 50% alcohol at 60 degrees F.

(84~~67~~) "Protein meal and fat" means meal, feather meal, and fat rendered product from poultry tissues including meat, viscera, bone, blood, and feathers.

(85) "Raw TSS" means the average annual percent tomato soluble solids of raw tomatoes to be processed in a tomato processing facility.

*** [No changes except to renumber]

(87~~69~~) "Rare earth oxide equivalent" means the mass of oxide if all of the ~~R~~rare ~~E~~earth elements in the product are isolated and converted to their oxide form.

*** [No changes except to renumber]

(87~~71~~) "Recycled boxboard" means containers of solid fiber made from recycled fibers, including cereal boxes, shoe boxes, and protective paper packaging for dry foods. It also includes folding paper cartons, set-up boxes, and similar boxboard products. Recycled boxboard is made from recycled fibers.

*** [No changes except to renumber]

(94~~76~~) "Skim milk" means ~~non-fat or fat-free milk~~ the product that results from the complete or partial removal of milk fat from milk.

*** [No changes except to renumber]

(96~~78~~) "Steel produced using an electric arc furnace" means steel produced by an electric arc furnace or "EAF." EAF means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. Furnaces that continuously feed direct-reduced iron ore pellets as the primary source of iron are not affected facilities within the scope of this definition of EAF.

*** [No changes except to renumber]

~~(80) "Sweetened condensed milk" means the food obtained by partial removal of water only from a mixture of milk and safe and suitable nutritive carbohydrate sweeteners. The finished food contains not less than 8 percent by weight of milk fat, and not less than 28 percent by weight of total milk solids. The quantity of nutritive carbohydrate sweetener used is sufficient to prevent spoilage. The food is pasteurized and may be homogenized~~.

*** [No changes except to renumber]

(99~~82~~) "Tin Plate" means thin sheet steel with a very thin coating of metallic tin. Tin plate also includes Tin Free Steel or TFS which has an extremely thin coating of metallic chromium~~, metallic~~ and chromium oxide. Tin plate is used primarily in can making.

*** [No changes except to renumber]

(101)"Tissue produced adjusted by water absorbency capacity" means the mass of tissue adjusted by water absorbency capacity derived by using the following metric: Tissue produced adjusted by water absorbency capacity = Air dried ton of tissue produced x grams of water absorbed by a gram of tissue product.

(102~~84~~) "Tomato juice" is the liquid obtained from mature tomatoes conforming to the characteristics of the fruit *Lycopersicum esculentum*~~Lycopersicum esculentum~~ P. Mill, of red or reddish varieties. Tomato juice may contain salt, lemon juice, sodium bicarbonate, water, spices and/or flavoring. This food shall contain not less than 5.0 percent by weight tomato soluble solids.

(103~~85~~) "Tomato paste" is the food prepared from mature tomatoes conforming to the characteristics of the fruit *Lycopersicum esculentum*~~Lycopersicum esculentum~~ P. Mill, of red or reddish varieties. Tomato paste is prepared by concentrating tomato ingredients until the food contains not less than 24.0 percent tomato soluble solids.

(104~~86~~) "Tomato puree" ~~or "tomato sauce"~~ is the semisolid food prepared from mature tomatoes conforming to the characteristics of the fruit *Lycopersicum esculentum*~~Lycopersicum esculentum~~ P. Mill, of red or reddish varieties. Tomato paste is prepared by concentrating tomato ingredients until the food contains not less than 8.0 percent but less than 24.0 percent tomato soluble solids.

*** [No changes except to renumber]

(106~~88~~) "Ultrafiltered milk ~~products~~" means raw or pasteurized milk ~~products~~ or nonfat milk that is ~~produced by passing milk under pressure through a thin, porous~~passed over one or more semipermeable membranes to ~~separate the components of milk according to their size~~partially remove water, lactose, minerals, and water soluble vitamins without altering the casein-to-whey protein ratio of the milk or nonfat milk and resulting in a liquid product. ~~Ultrafiltered milk products include ultrafiltered milk, ultrafiltered skim milk and ultrafiltered permeate.~~

*** [No changes except to renumber]

(10890) "Water absorption capacity" means the mass of water that is absorbed per unit mass of the test piece using the methodology specified by ~~the~~ ISO 12625-8:2010 except for the humidity and temperature conditions, which shall be 50% relative humidity ±2%, and 23 degrees C ±1 degree C.

~~(91) "Whey permeate" means a source of dairy solids obtained by the removal of protein and some minerals and lactose from whey. The separation is accomplished by ultrafiltration and diafiltration. The product is labeled to reflect protein, ash and lactose content. The acidity of permeates may be adjusted by the addition of safe and suitable pH ingredients.~~

(109) "Whey protein concentrate" means the substance obtained by the removal of sufficient nonprotein constituents from pasteurized whey so that the finished dry product contains greater than 25% protein. Whey protein concentrate is produced by physical separation techniques such as precipitation, filtration, or dialysis. The acidity of whey protein concentrate may be adjusted by the addition of safe and suitable pH adjusting ingredients.

(11092) "Whole chicken and chicken parts" means the whole chicken or chicken parts (including breasts, thighs, wings, and drums) that are ~~bone-in or deboned and~~ packaged for wholesale, or retail sales, or transferred to other facilities.

(11193) "Whole ~~Peeled~~ Tomatoes" is the food prepared from mature tomatoes conforming to the characteristics of the fruit *Lycopersicum esculentum P*. Mill, of red or reddish varieties. The tomatoes are peeled but kept whole, and shall have had the stems and calicies removed and shall have been cored, except where the internal core is insignificant to texture and appearance.

(c) For the purposes of this article, the following definitions associated with refining and related processes shall apply:

*** [No changes except to renumber]

(61) "Solomon Energy Intensity Index®" or "Solomon EII" or "EII" means a petroleum refinery energy efficiency metric that compares actual energy consumption for a refinery with the "standard" energy consumption for a refinery of similar size and configuration. The "standard" energy consumption is calculated based on an analysis of worldwide refining capacity as contained in the database maintained by Solomon Associates. The ratio of a facility's actual energy to the standard energy is multiplied by 100 to arrive at the Solomon EII for a refinery.

(62) "Solomon Energy Review" means a data submittal and review conducted by a petroleum refinery and Solomon Associates. This process uses the refinery energy utilization, throughput and output to determine the Solomon EII of the refinery.

*** [No changes except to renumber]

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95103. Greenhouse Gas Reporting Requirements.

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(h) *Reporting in 2015~~4~~.* All provisions of the regulation are in full effect for 2014 data reporting in 2015 and beyond, except the following:~~For 2013 data reported in 2014, the following applies:~~

(1) Operators in the petroleum and natural gas systems sector subject to section 95103(m)(1)(A) for centrifugal compressor start-ups, may use best available methods to calculate emissions for 2014 data reported in 2015.

~~(1) Reporting entities may use best available methods for reporting and calculating the general requirements in sections 95101(a)(1)(B)(8) and 95101(b)(1)-(2), the information regarding de minimis reporting for suppliers in section 95103(i), section 95103(j)(3), section 95104(f), the information regarding mixed fuels in section 95115(c)(1), the information regarding mixed fuels in section 95115(e), the information regarding the percentage of aggregated fuel consumption in section 95115(h), section 95115(k)-(l), and the information regarding fuel characteristic data elements and Table 1 in section 95129(c)(3). Reporting entities must adhere to the general provisions found in section 95101(a)(3), section 95101(h)-(i), section 95103(k)(7)(C), section 95103(l), section 95103(m), section 95103(n), section 95104(d)(4), and section 95105(c);~~

~~(2) Abbreviated reporters may use best available methods for reporting and calculating the requirements in sections 95103(a)(1)-(2). Abbreviated reporters must adhere to the general provisions found in sections 95103(a)(8)-(9);~~

~~(3) Operators of electricity generating facilities may use best available methods for reporting and calculating the requirements for the information regarding legacy contract transition assistance in section 95112(a), section 95112(a)(4)(C), section 95112(a)(5)(C), section 95112(b)(2), the information regarding total thermal output in section 95112(b)(3), section 95112(c) and section 95112(c)(3);~~

~~(4) Facility operators may use best available methods for reporting and calculating covered product data listed in section 95113(l)(3), the information regarding liquid hydrogen sold, on-purpose and by-product hydrogen gas in section 95114(j), section 95115(n)(5)-(18), the information regarding the tissue produced with water absorption capacity in 95119(d), the information regarding lead and lead alloys in section 95124(d), the information regarding emulsion in sections 95156(a)(7)-(10), the information regarding a gas plant~~

~~that produces less than 25 MMscf per day in section 95156(c), and section 95156(d);~~

~~(5) Operators of hydrogen plants who report under sections 95114(e)(1), (g), (i), (k), and (l) may use best available methods for calculating those reporting requirements. Operators of hydrogen plants who report under section 95114(e)(2) must report using the full requirements of that provision;~~

~~(6) Operators of a lead production facility who report under section 95124 must use best available methods for calculating their emissions. Operators of a lime manufacturing facility may use best available methods to calculate emissions under sections 95117(c)(3) and 95117(e);~~

~~(7) Suppliers of natural gas must adhere to the general provisions found in sections 95122(a)(2) and 95122(d)(2)-(6);~~

~~(8) Electric power entities must report 2013 electricity transactions (MWh) and emissions (metric tons of CO2e) under the specifications of this article, including the requirement listed in section 95111(a)(5)(E). The requirement that a seller warrant the sale or resale of specified source power in section 95111(a)(4) and the requirement for reporting of asset controlling supplier power in section 95111(a)(5)(B) are effective starting with the reporting of 2014 data in 2015 and later years;~~

~~(9) All reporting entities and verification bodies must follow the requirements in sections 95130 to 95133, including those amendments outlined in sections 95130(a)(1)(D), 95130(a)(2), 95131(a)(2)(C), 95131(b)(8)(D), 95131(b)(8)(F), 95131(b)(9), 95131(b)(12)(B)-(C), 95131(b)(13), 95131(b)(14), 95131(c)(1), 95131(c)(3), 95131(c)(4), 95131(e), 95132(b)(1)(A),(C), 95132(d), 95133(a)-(c);~~

~~(10) Operators for the petroleum and natural gas systems sector subject to sections 95150(a)(2), including the definitional change to an onshore petroleum and natural gas systems facility in section 95102(a), 95152(i)(9), 95153(y)(2)(C)-(D), 95157(c)(6), 95157(c)(18)(B), 95157(c)(19)(H) must use best available methods for these reporting requirements;~~

~~(11) If a regulatory amendment is not specifically listed above, reporting entities must comply with the amendment for 2014 data reported in 2015.~~

***

(k) *Measurement Accuracy Requirement*. The operator or supplier subject to the requirements of 40 CFR §98.3(i) must meet those requirements for data used for calculating non-covered emissions and non-covered product data, except as otherwise specified in this paragraph.

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(2) All flow meters and other measurement devices that provide data used to calculate GHG emissions or product data must be calibrated according to either the manufacturer's recommended procedures or a method specified in an applicable subpart of 40 CFR 98. The calibration method(s) used must be

documented in the monitoring plan required under section 95105(c), and are subject to verification under this article and review by ARB to ensure that measurements used to calculate GHG emissions or product data have met the accuracy requirements of this section.

***

(l) *Reporting and Verifying Product Data*. The reporting entity must separately identify, quantify, and report all product data as specified in sections 95110-95124 and 95156 of this article. It is the responsibility of the reporting entity to obtain verification services for the product data. Product data will be evaluated for conformance and material misstatement independent of GHG emissions data. Covered product data is evaluated for material misstatement and conformance, while the remaining reported product data is evaluated for conformance only. Reporting entities ~~may elect to~~must exclude inaccurate covered product data. Reporting entities that ~~elect to~~ exclude inaccurate covered product data must report a description of the excluded data and an estimated magnitude using best available methods. The excluded covered product data will not be used for the material misstatement assessment or for the total covered product data variable described in section 95131(b)(12)(A). Operators of cement plants may not exclude covered product data.

(m) *Changes in Methodology*. Except as specified below, where this article permits a choice between different methods for the monitoring and calculation of GHGs and product data, the operator or supplier must make this choice by January 1, 2013, or January 1 of the first data year reporting under this article, and continue to use the method chosen for all future emissions data reports, unless the use of an alternative monitoring or calculation method is approved in advance by the Executive Officer.

(1) The operator or supplier is permitted to permanently improve the emissions or product data monitoring or calculation method after January 1, 2013 through a change to a higher-tier monitoring or calculation method, such as the addition of a continuous emissions monitoring system. Permanent improvements to emissions monitoring or calculation methods do not require approval in advance by the Executive Officer; however, the operator or supplier must notify ARB prior to January 1 of the year the new method is implemented. Permanent changes to a lower-tier emissions monitoring or calculation method, and to all covered product data monitoring or calculation methods, must be approved in advance by the Executive Officer per the requirements in parts 95103(m)(2)-(3).

(2) When proposing a permanent change in a monitoring or calculation method to the Executive Officer, an operator or supplier must indicate why the change in method is being proposed, include a detailed description of what data are affected by the alternate procedure, and include a demonstration of differences in estimated data under the two methods.

(3) When permitted, a change in method must be made after the completion of monitoring for a data year and apply to the start of the subsequent data year,

except in the circumstances described in part (m)(4).

(~~2~~4) The operator or supplier is permitted to temporarily modify the emissions or product data monitoring or calculation method when ~~consistent with and~~ necessary for the avoidance of missing data or to comply with the missing data provisions of this article. In the event of an unforeseen breakdown in fuel analytical data monitoring equipment or CEMS equipment, operators and suppliers must use the procedures in section 95129(h) and section 95129(i), respectively, for seeking approval of interim data collection procedures. For all other instances that temporary methods are used, ARB must be notified by the reporting deadline of the following information: a description of the temporary method, the affected data, and the duration that the temporary method was used. A temporary method may be used for a period not to exceed 365 days unless the method is submitted and approved by the Executive Officer as a permanent method per the requirements in parts 95103(m)(2)-(3). Operators and suppliers must be able to demonstrate during verification that the temporary method provides data accuracy within ± 5% as specified in section 95103(k)(6). Covered product data that does not meet the required accuracy specification must be excluded using the procedure in section 95103(l) to avoid an adverse verification statement.

~~(3) When proposing a change in a monitoring or calculation method, an operator or supplier must indicate why the change in method is being proposed, and include a demonstration of differences in estimated data under the two methods.~~

~~(4) When permitted, a change in method must be made after the completion of monitoring for a data year, and not for a portion of a data year except where necessary to comply with section 95129 and other missing data substitution provisions of this article.~~

(5) When regulatory changes impose new or revised reporting requirements or calculation methods on an operator or supplier, the monitoring and calculation method must be in place on January 1 of the year in which data is first required to be collected pursuant to the reporting requirements.

(n) *Changes in Ownership or Operational Control*. If a reporting entity undergoes a change of ownership or operational control, the following requirements apply regarding notifications to ARB and reporting responsibilities.

(1) *ARB Notifications.* Prior to the change of ownership or operational control, the previous owner or operator of the reporting entity and the new owner or operator of the reporting entity must provide the following information to ARB. Required information must be submitted to the ARB email account: ghgreport@arb.ca.gov

***

(B) The new owner or operator must notify ARB via email of the ownership or operational control change, including the following information:

***

4. Name of a new Designated Representative pursuant to section 95104(b) for the affected entity's account in the California Reporting Greenhouse Gas Reporting Tool (Cal e-GGRT) specified in section 95104(~~f~~e);

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NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95104. Emissions Data Report Contents and Mechanism.

The reporting entities specified in section 95101 must develop, submit, and certify greenhouse gas emissions data reports to the Air Resources Board each year in accord with the following requirements.

(a) *General Contents.* In addition to the items specified at 40 CFR §98.3(c), each reporting entity must include in the emissions data report the following California information: ARB identification number, air basin, air district, county, geographic location, and indicate whether the reporting entity qualifies for small business status pursuant to California Government Code 11342.610. Electricity generating units must also provide Energy Information Administration and California Energy Commission identification numbers, as applicable. Reporters subject to the AB 32 Cost of Implementation Fee Regulation (title 17, California Code of Regulations, section 95200 to 95207), must report the official responsible for fees payment and the billing address for fees.

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NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

Subarticle 2. Requirements for the Mandatory Reporting of Greenhouse Gas Emissions from Specific Types of Facilities, Suppliers, and Entities

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§ 95111. Data Requirements and Calculation Methods for Electric Power Entities.

The electric power entity who is required to report under section 95101 of this article must comply with the following requirements.

(a) *General Requirements and Content for GHG Emissions Data Reports for Electricity Importers and Exporters.*

***

(12) *Electrical Distribution Utility Sales into CAISO.* All electricity distribution utilities except IOUs must report the annual MWh, by source, of all electricity

sold in the CAISO market, and the emission factor for each source, beginning with calendar years 2013 and 2014, reported in 2015.

(b) *Calculating GHG Emissions.*

***

(2) *Calculating GHG Emissions from Specified Facilities or Units.* For electricity from specified facilities or units, the electric power entity must calculate emissions using the following equation:

$$CO_2e = MWh \times TL \times EF_{sp}$$

Where:

CO_2e = Annual CO_2 equivalent mass emissions from the specified electricity deliveries from each facility or unit claimed (MT of CO_2e).

MWh = Megawatt-hours of specified electricity deliveries from each facility or unit claimed.

EF_{sp} = Facility-specific or unit-specific emission factor published on the ARB Mandatory Reporting website and calculated using total emissions and transactions data as described below. The emission factor is based on data from the year prior to the reporting year.

EF_{sp} = 0 MT of CO_2e for facilities below the GHG emissions compliance threshold for delivered electricity pursuant to the cap-and-trade regulation during the first compliance period.

TL = Transmission loss correction factor.

TL = 1.02 ~~when deliveries are not reported as measured at the busbar,~~ to account for transmission losses between the busbar and measurement at first point of receipt in California.

~~TL = 1.0 when deliveries are reported as measured at the busbar.~~

The Executive Officer shall calculate facility-specific or unit-specific emission factors and publish them on the ARB Mandatory Reporting website using the following equation:

$EF_{sp} = E_{sp} / EG$

Where:

E_{sp} = CO_2e emissions for a specified facility or unit for the report year (MT of CO_2e).

EG = Net generation from a specified facility or unit for the report year shall be based on data reported to the Energy Information Administration (EIA) reported to ARB under this section (MWh).

(A) For specified facilities or units whose operators are subject to this article or whose owners or operators voluntarily report under this article, E_{sp} shall be equal to the sum of CO_2e emissions reported pursuant to section 95112.

(B) For specified facilities or units whose operators are not subject to reporting under this article ~~or whose owners or operators do not voluntarily report under this article, but are subject to the U.S. EPA GHG Mandatory Reporting Regulation~~, E_{sp} shall be based on GHG emissions reported to the Energy Information Administration (EIA) ~~U.S. EPA pursuant to 40 CFR Part 98~~. Emissions from combustion of biomass-derived fuels will be based on EIA data ~~, when not reported to U.S. EPA~~.

(C) For specified facilities or units whose operators are not subject to reporting under this article ~~or whose owners or operators do not voluntarily report under this article, nor are subject to the U.S. EPA GHG Mandatory Reporting Regulation~~, E_{sp} is calculated using heat of combustion data reported to ~~the Energy Information Administration (~~EIA~~)~~ as shown below.

$$E_{sp} = 0.001 \times \Sigma(Q \times EF)$$

Where:
0.001 = conversion factor kg to MT
Q = Heat of combustion for each specified fuel type from the specified facility or unit for the report year (MMBtu). For cogeneration, Q is the quantity of fuel allocated to electricity generation consistent with EIA reporting. For geothermal electricity, Q is the steam data reported to EIA (MMBtu).
EF = O_2e emission factor for the specified fuel type as required by this article (kg CO_2e /MMBtu). For geothermal electricity, EF is the estimated CO_2 emission factor published by EIA.

(D) Facilities or units will be assigned an emission factor by the Executive Officer based on the type of fuel combusted or the technology used when an ~~U.S. EPA GHG Report or~~ EIA fuel consumption report is not available, including new facilities and facilities located outside the U.S.

***

(f) *Requirements for Asset-Controlling Suppliers.* Owners or operators of electricity generating facilities or exclusive marketers for certain generating facilities may apply for an asset-controlling supplier designation from ARB. Approved asset-controlling suppliers may request that ARB calculate a supplier-specific emission factor pursuant to section 95111(b)(3). To apply for asset-controlling supplier designation, the applicant must:

***

(5) To apply for and maintain asset-controlling supplier status, the entity shall submit as part of its emissions data report the following information, annually:

***

(E) A list and description of electricity generating facilities for which the reporting entity is a generation providing entity pursuant to 95102(a); ~~,~~

and,

***

(g) Requirements for Claims of Specified Sources of Electricity, and for Eligible Renewable Energy Resources in the RPS Adjustment.

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(1) *Registration Information for Specified Sources and Eligible Renewable Energy Resources in the RPS Adjustment.* The following information is required:

***

(N) For verification purposes, retain meter generation data from all specified sources to document that the power claimed by the reporting entity was generated by the facility or unit at the time the power was directly delivered. This is applicable to imports from specified sources for which ARB has calculated an emission factor of zero, and for imports from California Renewable Portfolio Standard (RPS) eligible resources, excluding: (1) grandfathered contracts under the California RPS program that "count in full" under Public Utilities Code Section 399.16(d); (2) dynamically tagged power deliveries; (3) untagged power deliveries; and (4) nuclear power. Accordingly, a lesser of analysis is required pursuant to the following equation:

$$\text{Sum of Lesser of MWh} = \Sigma HM_{sp} \min(MG_{sp}, TG_{sp})$$

Where:

ΣHM_{sp} = Sum of the Hourly Minimum of MG_{sp} and TG_{sp} (MWh).

MG_{sp} = metered facility or unit net generation (MWh).

TG_{sp} = tagged or transmitted energy at the transmission or sub-transmission level imported to California (MWh).

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NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95112. Electricity Generation and Cogeneration Units.

The operator of a facility who is required to report under section 95101 of this article, and who is not eligible for abbreviated reporting under section 95103(a), must report as specified below and comply with Subparts C and D of 40 CFR Part 98 (§§98.30 to 98.48), as applicable, in reporting emissions and other data from electricity generating and cogeneration units to ARB, except as otherwise provided in this section. Notwithstanding the above, the operator of a facility with total facility nameplate generating capacity of less than 1 MW may elect to follow section 95115 in reporting electricity generating units as general combustion sources, in lieu of the requirements of section 95112. If engineering estimation is used to report disposition of generated

energy or energy flow data that are not used directly to determine emissions, facility operators must demonstrate accuracy of the chosen engineering estimation method.

(a) *Information About the Electricity Generating Facility.* Notwithstanding any limitations in 40 CFR Parts 75 or 98, the operator of an electricity generating facility is required to include in the emissions data report the information listed in this paragraph, unless otherwise specified in paragraphs (e) and (g) of this section for geothermal facilities and facilities with renewable energy generation. Reporting of information specified in section 95112(a)(4)-(6) is optional for facilities that do not provide or sell any generated energy outside of the facility boundary. However, facility operators that are applying for or receiving the legacy contract transition assistance under the cap-and-trade regulation, or that are applying for or receiving the limited exemption for emissions from the production of qualified thermal output under the cap-and-trade regulation, must ~~always~~ report the information in sections 95112(a)(4)-(6), even if they do not provide or sell any generated energy outside of the facility boundary.

***

(i) *Additional Reporting Requirements for Legacy Contract Applicants*. The additional requirements in section 95112(i) apply to every facility operator that is applying for legacy contract transition assistance under the cap-and-trade regulation. A legacy contract generator with an industrial counterparty and a legacy contract generator without an industrial counterparty must submit a simplified block diagram in every year that the facility operator applies for legacy contract transition assistance. Legends or attachments may be used when labeling the diagram. If any of the amounts requested are sums of measurements made by different devices, the amounts for each device must be shown in the diagram and the summation described in an attachment.

(1) The diagram must depict the following elements:

(A) For the data year, all of the information described in sections 95112(a)(4)-(5), as applicable, regardless of whether the facility operator is itself otherwise subject to sections 95112(a)(4)-(5). This information reflects electricity and thermal energy flows, including information identifying the recipient(s) of the electricity and/or thermal energy. Also report the quantities of any other products provided or sold under the legacy contract, using the units in which they are reported elsewhere in this regulation, if applicable. The diagram must indicate where each of these energy flows or products is measured. In addition, the following information must be included:

1. Each of the amounts reported under section 95112(i)(1)(A) must be labeled indicating whether or not it was provided under the legacy contract; and
2. All thermal energy products must be labeled with the type of thermal energy product (e.g., steam, hot water, chilled water, distilled water).

(B) The individual equipment included in the system for which the facility

operator is applying for legacy contract transition assistance, and other equipment that is not an integral part of that system but produces or consumes energy that is sent to or received from that system and is owned or operated by either the facility operator. Boilers, individual generators such as heat recovery steam generators, turbines if separate from generators, ice plants, chillers, purifiers and other equipment that meet these criteria must each be shown separately in the diagram. In addition, label each piece of equipment with the amount of fuel consumed (in MMBtu) by that piece of equipment during the data year, if any, and the resulting greenhouse gas emissions as reported elsewhere under this regulation. The diagram must also indicate the fuel meter where this fuel use was measured, and the amount measured.

(C) An outline showing the boundary of the activities covered by the legacy contract.

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95113. Petroleum Refineries.

The operator of a facility who is required to report under section 95101 of this article, and who is not eligible for abbreviated reporting under section 95103(a), must comply with Subpart Y of 40 CFR Part 98 (40 CFR §§98.250 to 98.258) in reporting emissions and other data from petroleum refineries to ARB, except as otherwise provided in this section. Petroleum refinery operators and refiners are considered separate reporting entities for the purposes of this article.

***

(l) Additional Product and Process Data.

(1) *Primary refinery products*. The operator must report on-site production quantities of each primary refinery product for the data year by EIA number. The operator must also report for the data year by EIA number the quantity of each primary refinery product and blending component that was produced elsewhere and brought on-site. Liquid products must be reported in barrels, and solid products must be reported in short tons. When reporting the production quantity of a primary refinery product, sales data may be used, but must be adjusted by the change in inventory during the data year to accurately reflect the amount of material actually produced during the data year. Sales data may be used to report quantities of primary refinery product and blending component produced elsewhere and brought on-site. For each primary refinery product and blending component that was produced elsewhere and brought on-site, the operator must designate if any was used for a purpose other than blending into a primary refinery product, such as being used as a fuel or as a process unit feedstock. The quantity of primary refinery product or

blending component that is produced elsewhere and brought on-site may not be included in the reported on-site production quantity of primary refinery product, unless the reporter has identified that the quantity of primary refinery product or blending component that is produced elsewhere and brought on-site is used for a purpose other than blending into a primary refinery product.

(2) *Calcined coke*. The operator must report the production quantity for the data year of calcined coke (metric tons). The operator must specify whether the calciner is integrated with the petroleum refinery operation.

(3~~1~~) *Finished Products.* The operator must report production quantities for the data year of each petroleum product listed in Table C-1 of 40 CFR Part 98 each additional transportation fuel product listed in Table MM-1 of 40 CFR Part 98 (standard cubic feet for gaseous products, barrels for liquid products, short tons for solid products~~, and calcined coke (short tons). For calcined coke, specify whether the calciner is integrated with the petroleum refinery operation~~. For transportation fuel products listed in Table MM-1, the operator must report CARBOB as RBOB, must specify the quantity of the fuel designated for use in California, and must report the designated amount (percentage) of oxygenate that will be blended with CARBOB. ~~Among the products reported, only calcined coke and primary refinery products will~~These products will not be subject to review for material misstatement under the requirements of section 95131(b)(12).

~~(A) The operator must report and verify the annual short tons of calcined coke.~~

(4~~2~~) *Energy Intensity Index*. For refineries that participate in the Solomon Energy Reviews, the operator must report its most current Solomon EII values for the applicable data year. Each refinery operator must demonstrate to the verifier that the Solomon EII value reported is the correct value by providing documentation from Solomon & Associates.

(5~~3~~) *Complexity Weighted Barrel (CWB) Calculation*.

(A) *Reporting ~~of~~ CWB Throughput Functions.* The operator must report annual volume in thousands of barrels for each applicable throughput in Table 1 of this section, unless other units are listed in column 3 of Table 1 of this section. The ~~percent of~~ coke-on-~~the~~-catalyst volume percent also must be reported for each catalytic cracking unit. Beginning with data year 2013, CWB is considered covered product data and subject to material misstatement.

(B) *Total facility CWB.* The total facility CWB production must be calculated according to the following formula.

~~$$CWB = \sum(CWB_{Factor} * Throughput) + CWB_{Off-Sites\ and\ Non-Energy\ Utilities}$$~~

~~Where:~~

~~"CWB" = The total amount of complexity weighted barrels from a petroleum refinery.~~

~~"CWB_{Factor}" = The CWB factor for each process found in Table 1 of this section.~~

~~"Throughput" = The reported value for each CWB function identified in Table 1 of this section reported pursuant to section 95113(l)(3)(A).~~

~~"$CWB_{Off\text{-}Sites\ and\ Non\text{-}Energy\ Utilities}$" = 0.327 * Total Refinery Input + [0.0085 * $CWB_{process}$]~~

~~"$CWB_{process}$" = $\sum(CWB_{Factor} * Throughput)$~~,excluding contributions from total refinery input and non-crude input.

$$CWB_{Total} = CWB_{Process} + CWB_{Off-Sites} + CWB_{Non-Crude\ Sensible\ Heat}$$

Where *CWB_{Total}* is the total complexity weighted barrels for a petroleum refinery, and *$CWB_{Process}$*, *$CWB_{Off\text{-}Sites}$*, and *$CWB_{Non\text{-}Crude\ Sensible\ Heat}$* must be calculated as follows:

$CWB_{Process}$ = $\sum$(*CWB_{Factor}* x *Throughput*)

$CWB_{Off\text{-}Sites}$ = (0.327) x (*Total Refinery Input* in thousands of barrels per year) + (0.0085) x (*$CWB_{Process}$*)

$CWB_{Non\text{-}Crude\ Sensible\ Heat}$ = (0.44) x (*Non-Crude Input* in thousands of barrels per year)

In these equations, *CWB_{Factor}* is the CWB Factor for a CWB unit from Table 1 of this section. *Throughput* is the process throughput for each CWB unit identified in Table 1 of this section reported pursuant to section 95113(l)(3)(A). *Total Input* and *Non-Crude Input* are the annual volumes of raw materials as defined in section 95102(c).

~~(C) *Catalytic Cracking Correction.* For fluid catalytic cracking, mild residual catalytic cracking, and residual catalytic cracking that result in coke on the catalyst, the following equation must be used in substitution for CWB_{Factor} * Throughput:~~

~~CWB_{CC} = (A + (B * COC)) * $Throughput_{CC}$~~

~~Where:~~

~~"CWB_{CC}" = The complexity weighted barrel amount from catalytic cracking.~~

~~"A" = The first CWB factor listed in column 4 of Table 1 of this section.~~

~~"B" = The second CWB factor listed in column 4 of Table 1 of this section.~~

~~"COC" = The percent of coke on the catalyst in the catalytic cracking unit.~~

~~"Throughput$_{CC}$" = The reported Coke on Catalyst CWB value for each CWB function using Coke on Catalyst, identified in Table 1 of this section reported pursuant to section 95113(l)(3)(A).~~

(C) *Correction to CWB_{Factor} for Fluid Catalytic Cracking*. The following equation must be used to adjust *CWB_{Factor}* for Fluid Catalytic Cracking (FCC) units and mild residual FCC units that result in coke on the catalyst:

$$CWB_{Factor,FCC} = CWB_{Factor} + (A\ x\ COC))$$

Where:

$CWB_{Factor, FCC}$ = The corrected CWB factor used to calculate the contribution to *$CWB_{Process}$* for a fluid catalytic cracking unit.

CWB_{Factor} = The uncorrected CWB factor for a catalytic cracking unit from Table 1 of this section.

A = The coke-on-catalyst factor for a fluid catalytic cracking unit listed in the fourth column of Table 1 of this section.

COC = The coke-on-catalyst volume percent reported to three significant figures and calculated by:

COC = 100 x (Volume of coke consumed in the FCC)/(Volume of fresh feed to the FCC)

***

(m) The operator must report the quantity of:

(1) CARBOB produced and imported, as defined by "California reformulated gasoline blendstock for oxygenate blending" in section 95202 of the AB 32 Cost of Implementation Fee Regulation, for use in California and the designated volume of oxygenate associated with the reported CARBOB;

(2) Finished California gasoline produced and imported, as defined by "California gasoline" in section 95202 of the AB 32 Cost of Implementation Fee Regulation, for use in California; and

(3) California Diesel produced and imported, as defined by "California diesel" in section 95202 of the AB 32 Cost of Implementation Fee Regulation, for use in California and the volume of biodiesel and/or renewable diesel associated with the reported fuels.

Table 1. CWB Functions and Factors

CWB unit	Throughput Basis	Unit of Measure	CWB Factor	EIA Number	Process Subtypes
***					
Fluid Catalytic Cracking	Feed	thousands of barrels/year	1.150, Coke-on-Catalyst ~~CWB:~~Factor = 1.041	407	Fluid Catalytic Cracking (Feed ConCarbon <2.25 wt%)
Mild Residual FCC	Feed	thousands of barrels/year	0.6593, Coke-on-Catalyst ~~CWB:~~Factor = 1.1075		Mild Residualuum Catalytic Cracking (Feed ConCarbon 2.25-3.5 wt %)
***					
~~Total Refinery Input~~	~~Feed~~	~~thousands of barrels/year~~	~~0.327~~		-
~~Non-Crude Input~~	~~Feed~~	~~thousands of barrels/year~~	~~0.44~~		-
[1] Standard cubic feet are dry @ 60° F and 14.696 psia or 15 °C and 1 atmosphere.					

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95114. Hydrogen Production.

The operator of a facility who is required to report under section 95101 of this article, and who is not eligible for abbreviated reporting under section 95103(a), must comply with Subpart P of 40 CFR Part 98 (40 CFR §§98.160 to 98.168) in reporting emissions and other data from molecular hydrogen production to ARB, except as otherwise provided in this section. GHG emissions and output associated with hydrogen production must be reported separately from other emissions and output associated with a petroleum refinery.

(a) *Definition of Source Category*. This source category is defined consistent with 40 CFR §98.160(b) and (c). This category is further defined as a hydrogen production source that produces molecular hydrogen whether sold to other entities or consumed on-site.

***

(e) *Sampling Frequencies.* When monitoring GHG emissions as specified at 40 CFR §98.163, and reporting data as specified at §98.166, the operator must report the following:

(1) Carbon, atomic hydrogen, and molecular hydrogen content for each feedstock using engineering estimates based on measured data as specified below:

(A) For gaseous feedstock the operator must use weighted average carbon content, atomic hydrogen content (excluding hydrogen atoms contained in steam), and molecular hydrogen content from the results of one or more analyses for month n for natural gas or a standardized fuel or feedstock specified in Table 1 of section 95115, or from monthly analysis for other gaseous fuels and feedstocks such as refinery fuel gas;

(B) For liquid feedstock the operator must use weighted average carbon content and atomic hydrogen content from the results of one or more analyses for month n for a standardized fuel or feedstock specified in Table 1 of section 95115, or from monthly sampling for other liquid fuels or feedstocks;

(C) For solid feedstock the operator must use weighted average carbon content and atomic hydrogen content from the results of monthly sampling.

***

(j) *Additional Product Data.* Operators must report the annual mass of hydrogen gas produced (metric tons) and liquid hydrogen sold (metric tons). For hydrogen gas ~~sold~~ produced, annual masses of on-purpose hydrogen gas and by-product hydrogen gas produced must be reported (metric tons). Operators must also specify if the hydrogen plant is an integrated refinery operation. Operators must report all hydrogen sold or otherwise transferred to another facility and include the purchaser (or receiver) and quantity sold or transferred to each facility.

***

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95115. Stationary Fuel Combustion Sources.

***

(k) *Natural Gas Supplier Information.* The operator who is reporting emissions from the combustion of natural gas must report the name(s) of the supplier(s) of natural gas to the facility, the operator's natural gas supplier customer account number(s), natural gas supplier service account identification number(s) or other primary account identifier(s), and the annual MMBtu delivered to each account according to billing statements (10 therms = 1 MMBtu), and if the natural gas was received directly from an interstate pipeline supplier. In the case that the natural gas is purchased from an entity other than the natural gas supplier, the operator must report the supplier name and customer or service account identification number, but may report the annual MMBtu delivered based on the seller's billing statement.

***

(n) *Additional Product Data.* Operators of the following types of facilities must also report the production quantities indicated below.

***

(5) The operator of a poultry processing facility must report the quantity of whole chicken and chicken parts, poultry deli products, and protein meal and fat produced in the data year (short tons).

***

(10) The operator of a tomato processing facility must report the quantity of aseptic tomato paste (short ton of 31% TSS), aseptic whole~~/~~ and diced tomato (short ton), non-aseptic tomato paste and tomato puree (short ton of 24% TSS), non-aseptic whole~~/~~ and diced tomato (short ton), and non-aseptic tomato juice (short ton)~~, and non-aseptic tomato sauce~~ produced in the data year ~~(short tons)~~.

(11) The operator of a pipe foundry must report the production of ductile iron pipes produced in the data year (short tons).

(12) The operator of a facility producing aluminum billets must report the production of aluminum ~~billets~~ and aluminum alloy billets in the data year (short tons).

***

(14) The operator of a facility mining or processing freshwater diatomite filter aids ~~diatomaceous earth~~ must report the production of freshwater diatomite filter aids in the data year (short tons).

(15) The operator of a performing forging facility must report the production of seamless rolled ~~rings~~ring during the data year (short tons).

(16) The operator of a dairy product facility must report the production of milk, buttermilk, skim milk, cream, butter,~~ sweetened~~ condensed milk, buttermilk powder, ~~evaporated milk,~~ intermediate dairy ingredients, dairy product solids for animal feed, lactose, ~~whey permeate, dry~~ whey protein concentrate ~~(DPWC)~~(WPC),~~ and~~ deproteinized whey,~~ during the data year (short tons). The operator must also report the production of~~ cheese by cheese type, ~~the production of powdered milk~~ nonfat dry milk and skimmed milk powder by the type of heat treatment (low heat, medium heat, or high heat), and~~ the production of~~ ultrafiltered milk products by product type during the data year (short tons). The operator must report the production of total ~~DPWC~~ WPC and ~~DPWC~~ WPC with high protein concentration using ~~dialifration~~diafiltration process during the data year (short tons). The operator must also report the amount of imported protein.

***

(19) The operator of a winery must report the production of distilled spirits (proof gallons), dry color concentrate (short tons), grape juice concentrate (gallons), grape seed extract (short tons), and liquid color concentrate (gallons) during the data year.

Table 1: Petroleum Fuels For Which Tier 1 or Tier 2 Calculation Methodologies May Be Used Under Section 95115(c)(1)

Fuel Type	***Default High Heat Value***	***Default CO_2 Emission Factor***
	MMBtu/gallon	*kg CO_2 /MMBtu*
	***	
Liquefied petroleum gases (LPG)~~[1]~~	0.092	62.98
	***	

~~[1]~~Commercially sold as "propane" including grades such as HD5.

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

***

§ 95119. Pulp and Paper Manufacturing.

***

(d) *Additional Product Data.* In addition to the information required by 40 CFR §98.276, the operator must report the annual production (air dried short tons) of recycled boxboard, recycled linerboard, recycled medium, and tissue. The operator producing tissue products must also report the annual production (air dried short tons) of tissue produced by type (bathroom tissue, facial tissue, delicate task wipers or paper towels)~~adjusted by water absorbency capacity~~. The operator producing tissue products must also report:

(1) A description of the process used to produce tissue, such as through use of an air dryer.

(2) ~~Weighted a~~Average water absorption capacity of bathroom tissue manufactured, ~~using the following equation:~~

~~Weighted average water capacity for tissue type =~~

$$\sum_{i=1}^{n} Oi\,WACi$$

~~Where:~~

~~O_i = annual product output in air dried ton for each tissue product type~~

~~WAC_i = water absorption capacity~~ measured at least annually ~~for each product type~~ using the methodology specified by ISO 12625-8:2010, except the humidity and temperature conditions shall be 50% relative humidity ±2%, and 23 degrees C ±1 degree C.

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health

~~[1] Commercially sold as "propane" including grades such as HD5.~~

and Safety Code.

***

§ 95121. Suppliers of Transportation Fuels.

Any position holder, refiner, enterer, or ~~refiner~~biofuel production facility who is required to report under section 95101 of this article must comply with Subpart MM of 40 CFR Part 98 (§§98.390 to 98.398) in reporting emissions and related data to ARB, except as otherwise provided in this section.

(a) *GHGs to Report.*

***

(2) Refiners, position holders of fossil fuels and biomass-derived fuels that supply fuel at California terminal racks, ~~and~~ enterers that import transportation fuels outside the bulk transfer/terminal system, and biofuel production facilities that produce and deliver biomass-derived fuels outside the bulk transfer/terminal system in California ~~of fossil fuels~~ must report the CO_2, CO_2 from biomass-derived fuels, CH_4, N_2O, and CO_2e emissions that would result from the complete combustion or oxidation of each Blendstock, Distillate Fuel Oil or biomass-derived fuel (Biomass-Based Fuel and Biomass) listed in Table 2 of this section. However, reporting is not required for fuel in which a final destination outside California or where a use in exclusively aviation or marine applications can be demonstrated. No fuel shall be reported as finished fuel. Fuels must be reported as the individual Blendstock, Distillate Fuel Oil or biomass-derived fuel listed in Table 2 of this section. For purposes of this article, CARBOB blendstocks are reported as RBOB blendstocks.

(b) *Calculating GHG emissions.*

(1) Refiners, position holders at California terminals, ~~and~~ enterers that import fuel outside the bulk transfer system, and biofuel production facilities who produce and deliver ~~bring~~ fuel ~~into California~~ outside the bulk transfer/terminal system in California must use Equation MM-1 as specified in 40 CFR §98.393(a)(1) to estimate the CO_2 emissions that would result from the complete combustion of the fuel. Emissions must be based on the quantity of fuel removed from the rack (for refiners and position holders), fuel imported or produced and not delivered to the bulk transfer/terminal system (by enterers and biofuel production facilities), and fuel sold to unlicensed entities as specified in section 95121(d)(3) (by refiners). For fuels that are blended, emissions must be reported for each individual Blendstock, Distillate Fuel Oil or biomass-derived fuel listed in Table 2 of this section separately, and not as motor gasoline (finished), biofuel blends, or other similar finished fuel. Emissions from denatured fuel ethanol must be calculated as 100% ethanol only. The volume of denaturant is assumed to be zero and is not required to be reported. Emission factors must be taken from column C of 40 CFR ~~-~~98 Table MM-1 or MM-2 as specified in Calculation Method 1 of 40 CFR §98.393(f)(1), except that the emission factor for renewable diesel is equivalent to the emission

factor for Distillate No. 2. If a position holder in diesel or biodiesel fuel does not have sealed or financial transaction meters at the rack, and the position holder is the sole position holder at the terminal, the position holder must calculate emissions based on the delivering entity's invoiced volume of fuel or a meter that meets the requirements of section 95103(k) either at the rack or at a point prior to the fuel going into the terminal storage tanks.

***

(3) Refiners, position holders at California terminals, and enterers and biofuel production facilities that deliver fuel outside of the bulk transfer/terminal system must estimate and report CH_4 and N_2O emissions using Equation C–8 and Table C-2 as described in 40 CFR §98.33(c)(1), except that the emission factors in Table 1 of this section will be used for each fuel required to be reported in section 95121(a)(2) above.

Table 1. Transportation Fuel CH_4 and N_2O emission factors

Fuel	CH_4 (g/bbl)	N_2O (g/bbl)
Blendstock	20	20
Distillate	2	1
Ethanol	37	27
Biodiesel and Renewable Diesel	2	1

***

(d) *Data Reporting Requirements.* In addition to reporting the information required in 40 CFR §98.3(c), the following entities must also report the information identified below:

***

(4) Enterers and biofuel production facilities delivering ~~of fossil-derived~~ transportation fuels outside~~not directly delivered to~~ the bulk transfer/terminal system must report the annual quantity in barrels, as reported on the bill of lading or other shipping documents of each Blendstock, Distillate Fuel Oil, or biomass-derived fuel listed in Table 2 of this section, except for fuel for which a final destination outside California can be demonstrated. Denatured fuel ethanol will be reported with the entire volume as 100% ethanol only. The volume of denaturant is assumed to be zero and is not required to be reported. Biodiesel or renewable diesel blends containing no more than one percent petroleum diesel by volume will be reported as 100% biodiesel or renewable diesel.

***

(7) All fuel suppliers identified in this section must report the total quantity of CARBOB, California Gasoline, California diesel fuel, and biomass-derived fuel that was imported from outside of California for use in California. In addition,

for CARBOB imports, the designated percentage of oxygenate must be reported.

(8) Fuel suppliers identified in this section must report the total quantity of biodiesel and/or renewable diesel blended in California diesel for use in California.

***

Table 2
Blendstocks, Distillate Fuel Oils, and Biomass-Derived Fuels
Subject to Reporting under section 95121

CBOB—Summer
***
RBOB (CARBOB)—Summer
Regular
Midgrade
Premium
RBOB (CARBOB)—Winter
Regular
Midgrade
Premium
***
Biomass-Derived Fuel
Ethanol (100%)
Biodiesel (~~100~~≥99%, methyl ester)
Renewable Diesel (≥99%)
Rendered Animal Fat
Vegetable Oil

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95122. Suppliers of Natural Gas, Natural Gas Liquids, Liquefied Petroleum Gas, Compressed Natural Gas, and Liquefied Natural Gas.

***

(a) *GHGs to Report.*

(1) In addition to the CO_2 emissions specified under 40 CFR §98.402(a), natural gas liquid fractionators must report the CO_2, CH_4, N_2O and CO_2e emissions that would result from the complete combustion or oxidation of liquefied

petroleum gas sold or delivered to others that was produced on-site, except for products for which a final destination outside California can be demonstrated.

***

(b) *Calculating GHG Emissions.*

(1) Natural gas liquid fractionators must use calculation methodology 2 as specified in 40 CFR §98.403(a)(2) to estimate the CO_2 emissions that would result from the complete combustion of all natural gas liquid ~~the~~ products supplied except that Table MM-1 must be used in place of Table NN-2. For calculating the emissions from liquefied petroleum gas, the fractionators must sum the emissions from the individual constituents of liquefied petroleum gas sold or delivered to others that was produced on-site, except for products for which a final destination outside of California can be demonstrated.

***

(8) Local distribution companies must separately and individually calculate end-user emissions of CH_4, N_2O, CO_2 from biomass-derived fuels, and CO_2e by replacing CO_2 in the equation in section 95122(b)(6) with CH_4, N_2O, CO_2 from biomass-derived fuels, and CO_2e. CO_2 emissions from biomass-derived fuel are based on the fuel the LDC has contractually purchased on behalf of and delivered to end users. Emissions from contractually purchased biomethane are calculated using the methods for natural gas required by this section, including the use of the emission factor for natural gas found in 40 CFR§98.408, table NN-1. Biomass-derived fuels directly purchased by end users and delivered by the LDC ~~are~~ must be reported as natural gas by the LDC.

***

(d) Data Reporting Requirements.

(1) For the emissions calculation method selected under section 95122(b), natural gas liquid fractionators must report, in addition to the data required by 40 CFR §98.406(a), the annual volume of liquefied petroleum gas, corrected to 60 degrees Fahrenheit, that was produced on-site and sold or delivered to others, except for products for which a final destination outside California can be demonstrated. Natural gas liquid fractionators must report the annual quantity of liquefied petroleum gas produced and sold or delivered to others as the total volume in barrels as well as the volume of the individual components for all components listed in 40 CFR 98 Table MM-1. Fractionators must also include the annual CO_2, CH_4, N_2O, and CO_2e mass emissions (metric tons) from the volume of liquefied petroleum gas reported in 40 CFR §98.406(a)(5) as modified by this regulation, calculated in accordance with section 95122(b).

(2) For the emissions calculation method selected under section 95122(b), local distribution companies must report all the data required by 40 CFR §98.406(b) subject to the following modifications:

***

(E) In lieu of reporting the information specified in 40 CFR §98.406(b)(7), local distribution companies including intrastate pipelines must report the annual volumes in Mscf, annual energy in MMBtu, customer information required in 40 CFR §98.406(b)(12), and ARB ID number if available for all end-users registering supply equal to or greater than 188,500 MMBtu during the calendar year. In addition to reporting the information specified in 40 CFR §98.406(b)(13), local distribution companies including intrastate pipelines that deliver to end users must report the annual energy in MMBtu delivered to the following end-use categories: residential consumers; commercial consumers; industrial consumers; electricity generating facilities; and other end-users not identified as residential, commercial, industrial, or electricity generating facilities. Local distribution companies must also report the total energy in MMBtu delivered to all California end-users.

***

(6) In addition to the information required in 40 CFR §98.3(c), all local distribution companies that report biomass emissions from biomethane fuel that was contractually purchased by the LDC on behalf of and delivered to end users, and all liquefied natural gas production facilities reporting biomass emission from biomethane, must report, for each contracted delivery, the information specified in section 95103(j)(3).

***

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

***

§ 95124. Lead Production.

The operator of a facility who is required to report under section 95101(a)(1)(B)(8.) of this article, and who is not eligible for abbreviated reporting under section 95103(a), must comply with Subpart R of 40 CFR Part 98 (§§98.180 to 98.188) in reporting stationary combustion and process emissions and related data from lead production to ARB, except as otherwise provided in this section.

***

(c) *Missing Data Substitution Procedures.* The operator must comply with 40 CFR §98.185~~225~~ when substituting for missing data, except as otherwise provided in paragraphs (1)-(3) below.

***

(2) If the annual mass or carbon content of carbon-containing inputs are missing when using the process emissions calculation procedure in 40 CFR §98.183(b)(2), the operator must apply substitute values according to the procedures in paragraphs (A)-(B) below.

(A) If the analytical data capture rate is at least 80 percent for the data year,

the operator must substitute for each missing value according to 40 CFR §98.185~~225~~(a) and the number of days per month.

***

(d) *Additional Product Data.* The operator of a lead production, recycling, recovery, or manufacturing facility must report production of lead and lead alloys~~,~~ during the data year (short tons).

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

***

Subarticle 4. Requirements for Verification of Greenhouse Gas Emissions Data Reports and Requirements Applicable to Emissions Data Verifiers; Requirements for Accreditation of Emissions Data and Offset Project Data Report Verifiers

§ 95130. Requirements for Verification of Emissions Data Reports.

***

(a) Annual Verification.

***

(2) Reporting entities subject to annual verification under section 95130 shall not use the same verification body or verifier(s) for a period of more than six consecutive years, which includes any verifications conducted under this article and for the California Climate Action Registry; The Climate Registry; Climate Action Reserve; or other third-party verifications, validations, or audits conducted under impartiality provisions ~~in accordance with, or~~ substantively equivalent to~~,~~ section 95133, ~~including~~ which may include third-party certification of environmental management systems to the ISO 14001 standard or third-party certification of energy management systems to the ISO 50001 standard. This limitation applies only to those third-party verifications, validations, or audits that include the scope of activities or operations under the ARB identification number for the emissions data report.

The six year period begins on the date the reporting entity ~~verification body~~ first contracts for any third-party verifications, validations, or audits under any protocols, including ARB verification services, ~~provides ARB or other verification services to the reporting entity~~ for the scope of activities or operations under the ARB identification number for the emissions data report, and ends on the date the final verification statement is submitted. Even if these services are provided before the verification body or verifiers have received ARB accreditation, the six year period still begins when these services are contracted for, if accreditation is later received.

The six year ~~period~~ limit also applies to verification bodies and verifiers providing ARB or any other third-party verifications, validations, or audits that include the scope of activities or operations under the ARB identification number for the emissions data report and does not reset upon a change in reporting entity ownership or operational control.

***

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95131. Requirements for Verification Services.

***

(b) Verification services shall include, but are not limited to, the following*:*

***

(3) *Site Visits.* At least one accredited verifier in the verification team, including the sector specific verifier, if applicable, shall at a minimum make one site visit, during each year full verification is required, to each facility for which an emissions data report is submitted. The verification team member(s) shall visit the headquarters or other location of central data management when the reporting entity is a retail provider, marketer, or fuel supplier. During the site visit, the verification team member(s) shall conduct the following:

***

(C) The verification team shall carry out tasks that, in the professional judgment of the team, are needed in the verification process, including the following:

***

4. Reviewing financial transactions to confirm fuel, feedstock, product data and electricity purchases and sales, and confirming the complete and accurate reporting of required data such as facility fuel suppliers, fuel quantities delivered, and if fuel was received directly from an interstate pipeline.

(4) *Review of Reporting Entity's Operations, Product Data and Emissions.* The verification team shall review facility operations to identify applicable greenhouse gas emissions sources and product data. This shall include a review of the emissions inventory and each type of emission source to ensure that all sources listed in sections 95110 to 95123 and sections 95150 to 95157 of this article are properly included in the emissions data report. This shall also include a review of the product data to ensure that all product data listed in sections 95110 to 95123 and sections 95150 to 95157 of this article are included in the emissions data report as required by this article. The verification team shall also ensure that the reported current NAICS code(s)

accurately represents the activities noted in Table 8-1 of the Cap-and-Trade Regulation, as applicable.

***

(8) *Data Checks.* To determine the reliability of the submitted emissions data report, the verification team shall use data checks. Such data checks shall focus on the largest and most uncertain estimates of emissions, product data and fuel and electricity transactions, and shall include the following:

***

(F) The verification team is responsible for ensuring via data checks that there is reasonable assurance that the emissions data report conforms to the requirements of this article. In addition, and as applicable, the verifier's review of conformance must confirm the following information is correctly reported:

1. For facilities that combust natural gas, natural gas supplier customer account number, service account identification number, or other primary account identifier(s) ~~and annual MMBtu of natural gas delivered,~~ reported pursuant to section 95115(k);

***

(9) *Emissions Data Report Modifications.* As a result of data checks by the verification team and prior to completion of a verification statement(s), the reporting entity must fix all correctable errors that affect covered emissions, non-covered emissions, or covered product data in the submitted emissions data report, and submit a revised emissions data report to ARB. Failure to do so will result in an adverse verification statement. Failure to fix correctable errors that do not affect covered emissions, non-covered emissions, or covered product data represents a non-conformance with this article but does not, absent other errors, result in an adverse verification statement. The reporting entity shall maintain documentation to support any revisions made to the initial emissions data report. Documentation for all emissions data report submittals shall be retained by the reporting entity for ten years pursuant to section 95105.

The verification team shall use professional judgment in the determination of correctable errors as defined in section 95102(a), including whether differences are not errors but result from truncation or rounding or averaging.

If the verification team determines that the reported NAICS code(s) reviewed pursuant to section 95131(b)(4) is inaccurate, and the reporting entity does not submit a revised emissions data report to correct the current NAICS code(s), the result will be an adverse verification statement.

The verification team must document the source of any difference identified, including whether the difference results in a correctable error.

***

(14) *Review of Product Data.* The verifier's review of product data must include the following, where applicable.

***

(B) For product data reported by operators of petroleum refineries subject to section 95113:

1. Verifiers must evaluate conformance and material misstatement for 2013 primary refinery products data reported in 2014~~, and 2014 data reported in 2015. Beginning with 2015 primary refinery product data reported in 2016, verifiers will evaluate for conformance, and will not assess material misstatement~~. For the 2014 data year, the total on-site production quantity of primary refinery product for a refinery that has not reported a Solomon EII value pursuant to 95113(l)(4) ("non-EII refinery") is covered product data and verifiers must evaluate conformance and material misstatement. For non-EII refineries in the 2014 data year, the quantity of each primary refinery product and blending component produced elsewhere and brought on-site and that is used for a purpose other than blending into a primary refinery product is not covered product data and is not subject to material misstatement. For the 2014 data year and subsequent years, the total on-site production quantity of primary refinery product for a refinery that has reported a Solomon EII value pursuant to 95113(l)(4) ("EII refinery"), and the quantities of primary refinery product and blending component produced elsewhere and brought on-site by an EII refinery, are not covered product data and verifiers only evaluate for conformance. For the 2015 data year and subsequent years, primary refinery product data are not covered product data for any refinery and verifiers only evaluate for conformance.

***

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95132. Accreditation Requirements for Verification Bodies, Lead Verifiers, and Verifiers of Emissions Data Reports and Offset Project Data Reports.

***

(b) The Executive Officer may issue accreditation to verification bodies, lead verifiers, and verifiers that meet the requirements specified in this section.

(1) *Verification Body Accreditation Application.* To apply for accreditation as a verification body, the applicant shall submit the following information to the Executive Officer:

(A) A list of all verification staff and a description of their duties and

qualifications, including ARB accredited verifiers on staff. The applicant shall demonstrate staff qualifications by listing each individual's education, experience, professional licenses, and other pertinent information.

1. A verification body shall employ~~have~~ and retain at least two verifiers that have been accredited as lead verifiers, as specified in section 95132(b)(2).

***

(3) *Verifier Accreditation Application.* To apply for accreditation as a verifier, the applicant shall submit the following documentation to the Executive Officer:

***

(B) Evidence demonstrating sufficient workplace experience to act as a verifier, including evidence that the applicant has a minimum of two years of full-time work experience in a professional role involved in emissions data management, emissions technology, emissions inventories, environmental auditing, or other technical skills necessary to conduct verification.

***

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95133. Conflict of Interest Requirements for Verification Bodies.

(a) The conflict of interest provisions of this section shall apply to verification bodies, lead verifiers, and verifiers accredited by ARB to perform verification services for reporting entities. Any individual person or company that is hired by a reporting entity to contract with a verification body on behalf of the reporting entity is subject to the conflict of interest assessment in this article. In such instances, the verification body must assess the potential conflict of interest between itself and the contracting entity as well as between itself and the reporting entity, and must also address the potential conflict of interest between the contracting entity and the reporting entity, including a written assessment provided and signed by the contracting entity.

(b) The potential for a conflict of interest must be deemed to be high where:

***

(2) Any employee of the verification body, or any employee of a related entity, or a subcontractor who is a member of the verification team has provided to the reporting entity any of the following services within the previous five years:

***

(S) Expert services to the reporting entity, a trade or membership group to which the reporting entity belongs, or a legal representative for the

purpose of advocating the reporting entity's interests in litigation or in a regulatory or administrative proceeding or investigation.

***

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

Subarticle 5. Reporting Requirements and Calculation Methods for Petroleum and Natural Gas Systems.

***

§95152. Greenhouse Gases to Report.

***

(b) For offshore petroleum and natural gas production, the operator must report CO_2, CH_4, and N_2O emissions from equipment leaks, vented emissions, and flare emission source types as identified in the data collection and emissions estimation study (Year 2008 Gulfwide Emission Inventory Study (GOADS) (December 2010)) conducted by the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) in compliance with 30 CFR §§250.302 through 304 (July 1, 2011), which is hereby incorporated by reference. Offshore platforms do not need to report portable emissions. In addition, offshore production facilities must report combustion emissions from supply and transportation vessels (e.g., ships and helicopters) used to transport personnel, equipment and products to and from the production facility using methods found in subpart C of 40 CFR Part 98.

(c) For an onshore petroleum and natural gas production facility, the operator must report CO_2, CH_4, and N_2O emissions from the following source types on a well-pad, associated with a well-pad or associated with equipment to which an emulsion is transferred:

***

(13) Reciprocating compressor ~~rod packing~~ venting;

(d) For onshore natural gas processing, the operator must report CO_2, CH_4, and N_2O emissions from the following sources:

***

(6) Reciprocating compressor ~~rod packing~~ venting; and

***

(e) For onshore natural gas transmission compression, the operator must report CO_2, CH_4, and N_2O emissions from the following sources:

***

(7) Reciprocating compressor ~~rod packing~~ venting; and

***

(f) For underground natural gas storage, the operator must report CO_2, CH_4, and N_2O

from the following sources:

***

(6) Reciprocating compressor ~~rod packing~~ venting; and

***

(g) For LNG storage, the operator must report CO_2, CH_4, and N_2O emissions from the following sources:

***

(4) Reciprocating compressor ~~rod packing~~ venting; and

***

(h) For LNG import and export equipment, the operator must report CO_2, CH_4, and N_2O emissions from the following sources:

***

(4) Reciprocating compressor ~~rod packing~~ venting; and

***

(i) For natural gas distribution, the operator must report CO_2, CH_4, and N_2O emissions from the following sources:

(1) ~~Meters, regulators, and associated equipment at above grade transmission-distribution transfer stations, including~~ e<u>E</u>quipment leaks from connectors, block valves, <u>control valves, pressure relief valves,</u> orifice meters, regulators, and open ended lines <u>at above grade transmission-distribution transfer stations</u>;

(2) Equipment leaks ~~from vaults~~ at below grade transmission-distribution transfer stations;

(3) ~~Meters, regulators, and associated e~~<u>E</u>quipment <u>leaks</u> at above grade metering-regulating stations <u>that are not above grade transmission-distribution transfer stations</u>;

(4) Equipment leaks ~~from vaults~~ at below grade metering-regulating stations.

(5) <u>Distribution main e</u>~~E~~quipment <u>leaks</u>~~and pipeline blowdowns~~;

(6) <u>Distribution s</u>~~S~~service<u>s</u> ~~line~~ equipment leaks;

(7) Report under section 95150 of this article the emissions of CO_2, CH_4, and N_2O ~~emissions~~ from stationary <u>fuel</u> combustion sources following the methods in 95153(y);~~ and~~

(8) Flare stack emissions<u>;</u>~~.~~

(9) ~~Pipeline main e~~<u>E</u>quipment leaks <u>and pipeline blowdowns</u>~~.~~<u>;</u>

<u>(10) CO_2 and CH_4 emissions from customer meters (N_2O emissions excluded); and</u>

<u>(11) CO_2 and CH_4 emissions from pipeline dig-ins (N_2O emissions excluded).</u>

***

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§ 95153. Calculating GHG Emissions.

The operator of a facility must calculate and report annual GHG emissions as prescribed in this section. The facility operator who is a local distribution company reporting under section 95122 of this article must comply with section 95153 for reporting emissions from the applicable source types in section 95152(i) of this article.

***

(c) *Acid gas removal (AGR) vents.* For AGR vents (including processes such as amine, membrane, molecular sieve or other absorbents and adsorbents), the operator must calculate emissions for CO_2 only (not CH_4) vented directly to the atmosphere or <u>emitted</u> through a flare, engine (e.g. permeate from a membrane or de-adsorbed gas from a pressure swing adsorber used as fuel supplement), or sulfur recovery plant using the applicable calculation methodologies described in paragraphs (c)(1)-(c)(10) below.

***

(2) *Calculation Methodology 2*. If CEMS is not available but a vent meter is installed, the operator must use the CO_2 composition and annual volume of vent gas to calculate emissions using Equation 3 of this section.

$$E_{a,CO2} = V_S * Vol_{CO2} \quad \text{(Eq. 3)}$$

Where:

$E_{a,CO2}$ = Annual volumetric CO_2 emissions at actual conditions, in cubic feet per year.

V_s = Total annual volume of vent gas flowing out of the AGR unit in cubic feet per year at actual conditions as determined by flow meter using methods set forth in section 95154(b). Alternatively, the facility operator may follow the manufacturer's instructions for calibration of the vent meter.

Vol_{CO2} = <u>Annual average volumetric</u> ~~Volume~~ fraction of CO_2 content in the vent gas out of the AGR unit as determined in (c)(5) of this section.

***

(7) Determine volume fraction of CO_2 content in natural gas out of the AGR unit using one of the methods specified in paragraph (c)(7) of this section.

***

(e) *Well venting for liquids unloadings.* Calculate CO_2 and CH_4 emissions from *well venting* for liquids unloading using one of the calculation methodologies described

in paragraphs (e)(1), (e)(2) or (e)(3) of this section.

(1) *Calculation Methodology 1*. Calculate the total emissions for well venting for liquids unloading without plunger lift assist using Equation 6 of this section.

$$E_{S,n} = \sum_{p=1}^{W}\left[V_p * \left((0.37 * 10^{-3}) * CD_p^2 * WD_p * SP_p\right) + \sum_{p=1}^{V_p}\left(SFR_p * \left(HR_{p,q} - 1.0\right) * Z_{p,q}\right)\right] \quad \text{(Eq. 6)}$$

Where:

$E_{S,n}$ = Annual natural gas emissions at standard conditions, in cubic feet/year.

W = Total number of well venting events for liquids unloading for each basin.

$0.37x10^{-3}$ = {3.14(pi)/4}/{14.7x144}(psia converted to pounds per square feet).

p = wells 1 through W with well venting for liquids unloading in the basin.

CD_p = Casing diameter for each well, p, in inches.

WD_p = Well depth from either the top of the well or the lowest packer to the bottom of the well, for each well, p, in feet.

SP_p = For each well, p, sShut-in pressure or surface pressure for wells with tubing production and no packers or casing pressure for each well, p, in pounds per square inch absolute (psia).

V_p = Number of unloading events per year per well, p.

SFR_p = Average flow-line rate of gas for well p, at standard conditions in cubic feet per hour. Use Equation 29 to calculate the average flow-rate at standard conditions.

***

(f) *Gas well venting during well completions and well workovers*. Using one of the calculation methodologies in this paragraph (f)(1) through (f)(5) below, operators must calculate CH_4, CO_2 and N_2O (when flared) annual emissions from gas well venting during both conventional completions and completions involving hydraulic fracturing in wells and during both conventional well workovers and well workovers involving hydraulic fracturing.

(1) *Calculation Methodology 1*. Measure total gas flow with a recording flow meter (analog or digital) installed in the vent line ahead of a flare or vent id used. The facility operator must correct total gas volume vented for the volume of CO_2 or N_2 ~~injected and the volume of gas recovered into a sales lines as follows~~:

$$E_a = V_M - V_{\mathrm{CO2\ or\ N2}} ~~- V_{SG}~~ \quad \text{(Eq. 8)}$$

Where:

E_a = ~~Natural g~~Gas emissions during the well completion or workover at actual conditions (m^3).

V_M= Volume of vented gas measured during well completion or workover (m^3).

$V_{CO2\ or\ N2}$ = Volume of CO_2 or N_2 injected during well completion or workover (m^3).

~~V_{SG} = Volume of natural gas recovered into a sales pipeline (m^3).~~

***

(2) Calculation Methodology 2.

***

(E) Calculate total gas volume vented during sonic flow conditions as follows:

$$V_S = FR_a * T_S \quad \text{(Eq. 10)}$$

Where:

V_s = Volume of gas vented during sonic flow conditions (scf~~m~~^{3}).

T_S = Length of time that the well vented under sonic conditions (hours).

***

(I) Sum the vented volumes during subsonic and sonic flow and adjust vented emissions for the volume of CO_2 and N_2 injected and the volume of gas recovered to a sales line as follows:

$$E_S = V_S + V_{SS} - V_{\frac{CO2}{N2}} - V_{SG} \quad \text{(Eq. 12)}$$

Where:

E_s = Total volume of ~~natural~~ gas vented during the well completion or workover (scf).

V_s = Volume of ~~natural~~ gas vented during sonic flow conditions for the well completion or workover (scf) (see Eq. 10).

V_{ss} = Volume of ~~natural~~ gas vented during subsonic flow conditions for the well completion or workover (scf) (see 95153(f)(2)(G) above).

$V_{CO2/N2}$ = Volume of CO_2 or N_2 injected during the well completion or workover (scf).

V_{SG} = Volume of gas recovered to a sales line during the well completion or workover (scf).

***

(g) *Equipment and pipeline blowdowns*. Calculate CO_2 and CH_4 blowdown emissions from depressurizing equipment and natural gas pipelines to reduce system pressure for planned or emergency shutdowns resulting from human intervention or to take equipment out of service for maintenance (excluding depressurizing to a flare, over-pressure relief, operating pressure control venting and blowdown of non-GHG gases; desiccant dehydrator blowdown venting before reloading is covered in paragraphs (d)(4) of this section) as follows:

(1) Calculate the unique physical volume (including pipelines, compressor case or cylinders, manifolds, suction bottles, discharge bottles, and vessels) between isolation valves determined by engineering estimates based on best available data. Engineering estimates based on best available data may also be used to determine the temperature and pressure variables used in the Equations 13 and 14 if monitoring data is unavailable. Equipment blowdowns with a unique physical volume (including pipelines, compressor case or cylinder manifolds, suction bottles, discharge bottles and vessels) of less than 50 cubic feet (cf) between isolation valves are not subject to the requirements of 95153(g).

***

(i) *Transmission storage tanks*. For vent stacks connected to one or more transmission condensate storage tanks, either water or hydrocarbon, without vapor recovery, in onshore natural gas transmission compression and onshore petroleum and natural gas production, the operator of a facility must calculate CH_4, CO_2 and N_2O annual emissions from condensate scrubber dump valve leakage as follows:

***

(2) If the tank vapors from the vent stack are continuous for five minutes, or the acoustic leak detection device detects a leak, then use one of the following two methods in paragraph (i)(2) of this section to quantify annual emissions:

(A) Use a meter, such as a turbine meter, calibrated bag, or high flow sampler to estimate tank vapor volumes from the vent stack according to methods set forth in section 95154(b) through (d). If a continuous flow measurement device is not installed, the facility operator may install a flow measuring device on the tank vapor vent stack. If the vent is directly measured for five minutes under paragraph (i)(1) of this section to detect continuous leakage, this serves as the measurement.

***

(3) If ~~the~~a leaking dump valve~~(s) is fixed following leak detection, the annual emissions shall be calculated from the beginning of the calendar year to the time the valve(s) is repaired~~ is identified, the leak must be counted as having occurred since the beginning of the calendar year, or from the previous test that did not detect leaking in the same calendar year. If the leaking dump valve is fixed following leak detection, the leak duration will end upon being repaired. If the leaking dump valve is identified and not repaired, the leak must be counted as having occurred through the rest of the calendar year.

***

(j) *Well testing venting and flaring.* Calculate CH_4, CO_2 and N_2O (when flared) gas and oil well testing venting and flaring emissions as follows:

(1) Determine the gas-to-oil ratio (GOR) of the hydrocarbon production from all oil well(s) tested. Determine the production rate from all gas well(s) tested.

***

(3) Estimate venting emissions using Equation 15 (for oil wells) or Equation 16 (for gas wells) of this section.

$$E_{\text{~~a~~}S,n} = GOR * FR * D \quad \text{(Eq. 15)}$$

$$E_{a,n} = PR * D \quad \text{(Eq. 16)}$$

Where:

$E_{S,n}$ = Annual volume of gas emissions from well(s) testing in cubic feet under actual conditions.

$E_{a,n}$ = Annual volumetric natural gas emissions from well(s) testing in cubic feet under actual conditions.

GOR = Gas-to-oil ratio, for well p in basin q, in cubic feet of gas per barrel of oil; oil here refers to hydrocarbon liquids produced of all API gravities.

FR = Annual average f~~F~~low rate in barrels of oil per day for the oil well(s) being tested.

PR = Average annual production rate in actual cubic feet per day for the gas well(s) being tested.

D = Number of days during the year the well(s) is tested.

(4) For equation 16 c~~C~~alculate natural gas volumetric emissions at standard conditions using calculations in paragraph (r) of this section.

***

(k) *Associated gas venting and flaring.* Calculate CH_4, CO_2 and N_2O (when flared) associated gas venting and flaring emissions not in conjunction with well testing as follows:

***

(3) Estimate venting emissions using Equation 17 of this section.

$$\text{~~}E_{a,n} = \sum_{q=1}^{y} \sum_{p=1}^{x} GOR_{p,q} * V_{p,q}\text{~~} \quad E_{a,n} = \sum_{p=1}^{x} GOR_{p,q} * V_{p,q} \quad \text{(Eq.17)}$$

Where:

$E_{a,n}$ = Annual volumetric natural gas emissions, at the facility level, from associated gas venting under actual conditions, in cubic feet.

$GOR_{p,q}$ = Gas-to-oil ratio, for well p in basin q, in cubic feet of gas per barrel of oil; oil here refers to hydrocarbon liquids produced of all API gravities.

$V_{p,q}$ = Volume of oil produced, for well p in basin q, in barrels in the calendar year during which associated gas was vented or flared.

x = Total number of wells in the basin that vent or flare associated gas.

~~y = Total number of basins that contain wells that vent or flare associated gas.~~

***

(l) *Flare stack or other destruction device emissions.* Calculate CO_2, CH_4 and N_2O emissions from a flare stack or other destruction device as follows:

***

(2) If a continuous flow measurement device is installed on the flare or destruction device, the measured flow volumes must be used to calculate the flare gas emissions. If all of the gas or liquid sent to the flare or destruction device is not measured by the existing flow measurement device, then the flow not measured can be estimated using engineering calculations based on best available data or company records. If a continuous flow measurement device is not installed on the flare or destruction device, a flow measuring device can be installed on the flare or destruction device or engineering calculations based on process knowledge, or company records, or best available data.

***

(5) Calculate GHG volumetric emissions at actual conditions using Equations 18, and 19, and 20 of this section.

~~$E_{a,CH4}(uncombusted) = V_a * (1 - \eta) * X_{CH4}$~~

$E_{a,CH4} = V_a * X_{CH4} * [(1 - \eta) * Z_L + Z_U]$ (Eq. 18)

~~$E_{a,CO2}(uncombusted) = V_a * X_{CO2}$~~ (Eq. 19)

~~$E_{a,CO2}(combusted) = \sum_{j=1}^{5}(\eta * V_a * Y_j * R_j)$~~

$E_{a,CO2} = V_a * X_{CO2} + \sum_{j=1}^{5}(\eta * V_a * Y_j * R_j * Z_L)$ (Eq. 2019)

Where:

$E_{a,CH4}$(uncombusted) = Contribution of aAnnual un-combusted CH_4 emissions from flare stack in cubic feet, under actual conditions.

~~$E_{a,CO2}$ (uncombusted) = Contribution of annual un-combusted CO_2 emissions from flare stack in cubic feet, under actual conditions.~~

$E_{a,CO2}$(combusted) = Contribution of aAnnual combusted CO_2 emissions from flare stack in cubic feet, under actual conditions.

V_a = Volume of gas sent to flare in cubic feet, during the year.

η = Fraction of gas combusted by a burning flare (default is 0.98). For gas sent to an unlit flare, η is zero.

X_{CH4} = Mole fraction of CH_4 in gas to the flare.

Z_L = Fraction of the feed gas sent to a burning flare (equal to 1 – Z_U).

Z_U = Fraction of the feed gas sent to an unlit flare determined by engineering estimate and process knowledge based on best available data and operating records.

***

(11) If source types in section 95153 use Equations 18 and~~through~~ 19~~20~~ of this section, use volume under actual conditions for the parameter, V_a, in these equations.

(m) *Centrifugal compressor venting.* Calculate CH_4, CO_2 and N_2O (when flared) emissions from both wet seal and dry seal centrifugal compressor vents as follows:

(1) For each centrifugal compressor with a rated horsepower of 250hp or greater covered by sections 95152(c)(12), (d)(5), (e)(6), (f)(5), (g)(3), and (h)(3) the operator must conduct an annual measurement in each operating mode in which it is found for more than 200 hours in a calendar year. Measure emissions from all vents (including emissions manifolded to common vents) including wet seal oil degassing vents, unit isolation valve vents, and blowdown valve vents. Record emissions from the following vent types in the specified compressor modes during the annual measurement:

(A) Operating mode, blowdown valve leakage through the blowdown vent, wet seal and dry seal compressors. For all centrifugal compressor start-ups where natural gas is used as spin-up or starting gas (i.e. not combusted in the compressor), venting of this gas must be quantified and reported as follows:

$$E_{SGi} = \sum_1^n V_{sg}(1 - CF)Y_i \qquad \text{(Eq. 20)}$$

Where:

E_{SGi} = Annual GHG_i (CO_2 and CH_4) vented emissions at standard conditions in cubic feet.

n = number of compressor start-ups using spin gas.

V_{sg} = Volume of spin-up gas in standard cubic feet.

CF = Fraction of spin-up gas that is sent to vapor recovery or fuel gas as determined by keeping logs of the number of operating hours for the vapor recovery system and the amount of gas that is directed to the fuel gas or vapor recovery system.

Y_i = Mole fraction of GHG_i in the vent gas.

Calculate both CH_4 and CO_2 mass emissions from volumetric emissions using calculations in paragraph (t) of this section.

***

(o) *Leak detection and leaker emission factors.* The operator must use the methods described in section 95154(a) to conduct leak detection(s) of equipment leaks from all components types listed in sections 95152(c)(16), (d)(7), (e)(8), (f)(7), (g)(5), (h)(5), and (i)(1). This paragraph (o) applies to component types in streams with gas content greater than 10 percent CH_4 plus CO_2 by weight. Component types in streams with gas content less than 10 percent CH_4 plus CO_2 by weight do not need

to be reported. Tubing systems equal to or less than one half inch diameter are exempt from the requirements of this paragraph (o) and do not need to be reported. If equipment leaks are detected for sources listed in this paragraph (o), calculate equipment leak emissions per component type per reporting facility using Equations 25 or 26 of this section for each component type. Use Equation 25 for industry segments listed in section 95150(a)(1) – (a)(7). Use Equation 26 for natural gas distribution facilities as defined in section 95150(a)(8). Use methods found in section 95153(t) to convert GHG_i volume emissions to GHG_i mass emissions.

$$E_{s,i} = GHG_i * \sum_{p=1}^{x}(EF * T_p) \quad \text{(Eq. 25)}$$

$$E_{s,i} = GHG_i * \sum_{q=t-n+1}^{t}\sum_{p=1}^{x}(EF * T_{p,q}) \quad \text{(Eq. 26)}$$

Where:

$E_{s,i}$ = Annual total volumetric GHG emissions at standard conditions from each component type in cubic feet, as specified in (o)(1) through (o)(8) of this section.

X = Total number of each component type.

EF = Leaker emission factor for specific component types listed in Table 1A and 2 through 7 of Appendix A.

GHG_i = For onshore petroleum and natural gas production facilities, concentration of GHG_i, CH_4 or CO_2, in produced natural gas as defined in paragraph (s)(2)(A) of this section; For onshore natural gas processing facilities, concentration of GHG_i, CH_4 or CO_2, in the total hydrocarbon of the feed natural gas; for onshore natural gas transmission compression and underground natural gas storage, GHG_i equals 0.975 for CH_4 and 1.1×10^{-2} for CO_2; for LNG storage and LNG import and export equipment, GHG_i equals 1 for CH_4 and 0 for CO_2; and for natural gas distribution, GHG_i equals 1 for CH_4 and 1.1×10^{-2} for CO_2 or use the experimentally determined gas composition for CO_2 and CH_4.

***

(p) *Population count and emission factors.* This paragraph applies to emissions sources listed in sections 95152(c)(16), (f)(2), (f)(7), (g)(~~3~~5), (h)(~~3~~5), (i)(2), (i)(3), (i)(4), (i)(6), and (i)(10)~~(i)(9)~~ on streams with gas content greater than 10 percent CH_4 plus CO_2 by weight. Emissions sources in streams with gas content less than 10 percent CH_4 plus CO_2 by weight do not need to be reported. Tubing systems equal to or less than one half inch diameter are exempt from the requirements of paragraph (p) of this section and do not need to be reported. Calculate emissions from all sources listed in this paragraph using Equation 27 of this section.

$$E_{s,i} = Count_s * EF_s * GHG_i * T_s \quad \text{(Eq. 27)}$$

Where:

$E_{s,i}$ = Annual volumetric GHG emissions at standard conditions from each component type in cubic feet.

$Count_s$ = Total number of this type of emission source at the facility. ~~Use average component counts as appropriate for operations in Western U.S.,~~

~~according to Table 1B of Appendix A for 2012 data. For 2013 calendar year emissions and onwards, a~~Actual component~~s~~ counts for individual facilities must be used. Underground natural gas storage shall count the components listed for population emission factors in Table 4. LNG storage shall count the number of vapor recovery compressors. LNG import and export shall count the number of vapor recovery compressors. Natural gas distribution shall count the meter/regulator runs and the number of customer meters as described in paragraph (p)(6) of this section.

***

T_s = Total time that each component type associated with the equipment leak emission was operational in the calendar year, in hours, using engineering estimate based on best available data, assume T_s = 8760 hours for section 95152(i)(10).

***

(6) Natural gas distribution facilities must use the appropriate emission factors as described in paragraph (p)(6) of this section.

(A) Below grade metering-regulating stations; distribution mains; ~~and~~ distribution services~~,~~; and customer meters must use the appropriate default population emission factors listed in Table 7 of Appendix A. Below grade T-D transfer stations must use the emission factor for below grade metering-regulating stations.

***

(q) *Offshore petroleum and natural gas production facilities.* Operators must report CO_2, CH_4, and N_2O emissions for offshore petroleum and natural gas production from all equipment leaks, vented emission, and flare emission source types as identified in the data collection and emissions estimate study (Year 2008 Gulfwide Emission Inventory Study (GOADS) (December 2010)) conducted by BOEMRE in compliance with 30 CFR §§250.302 through 304 (July 1, 2011), which is hereby incorporated by reference.

(1) Offshore production facilities under BOEMRE jurisdiction must report the same annual emissions as calculated and reported by BOEMRE in data collection and emissions estimate study published by BOEMRE and referenced in 30 CFR §§250.302 through 304 (July 1, 2011) Gulfwide Offshore Activities Data System (GOADS).

(A) The BOEMRE data is collected and reported every other year. In years where the BOEMRE data is not available, use the previous year's BOEMRE data and adjust the emissions based on the operating time for the facility relative to the operating time in the previous year's BOEMRE data.

(2) Offshore production facilities that are not under BOEMRE jurisdiction must use monitoring methods and calculation methodologies published by BOEMRE

and referenced in 30 CFR §§250.302 through 304 (July 1, 2011) to calculate and report emissions (GOADS).

(A) The BOEMRE data is collected and reported every other year. In years where the BOEMRE data is not available, use the previous year's BOEMRE data and adjust the emissions based on the operating time for the facility relative to the operating time in the previous year's BOEMRE data.

(3) If BOEMRE discontinues or delays their data collection effort by more than 4 years, then offshore operators must once in every 4 years use the most recent BOEMRE data collection and emissions estimation methods to report emission from the facility sources.

(4) For either the first or subsequent year of reporting, offshore facilities either within or outside of BOEMRE jurisdiction that were not covered in the previous BOEMRE data collection cycle must use the BOEMRE data collection and emissions estimation methods published by BOEMRE and referenced in 30 CFR §§250.302 through 304 (July 1, 2011) (GOADS) to calculate and report.

***

(t) *GHG mass emissions.* Calculate GHG mass emissions ~~in carbon dioxide equivalent~~ by converting the GHG volumetric emissions at standard conditions into mass emissions using Equation 32 of this section.

***

(v) *Crude Oil, Condensate, and Produced Water Dissolved CO_2 and CH_4.* The operator must calculate dissolved CO_2 and CH_4 in crude oil, condensate, and produced water. This reporting requirement includes emissions from hydrocarbon liquids and water produced using EOR operations. Emissions must be reported for crude oil, condensate, and produced water sent to storage tanks, ponds, and holding facilities. The facility operator must also report the volume of produced water in barrels per year.

***

(w) ~~*Reserved.*~~*Pipeline dig-ins.* For reporting pipeline dig-in emissions as specified in section 95152(i)(11), operators may either use measured data or use engineering estimation based on best available data to quantify the volume of natural gas released from pipeline dig-in events. Volumetric emissions must be converted into mass emissions of CO_2 and CH_4 using the applicable methods in paragraphs (r), (s), and (t) of this section.

***

(y) *Onshore petroleum and natural gas production and natural gas distribution combustion emissions.* Calculate CO_2, CH_4, and N_2O combustion-related emissions from stationary or portable equipment, except as specified in paragraph (y)(3) and (y)(4) of this section as follows:

***

(5) Calculate sorbent CO_2 emissions from fluidized bed boilers with flue gas desulfurization using methods found in §98.33(d).

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

***

§ 95156. Additional Data Reporting Requirements.

Operators must conform ~~with~~to the data reporting requirements in section 95157 in addition to the data reporting requirements ~~except as~~ specified below. Sales records may be used to provide the data required by paragraphs (a)(7)-(10), (b), (c) and (d) of this section for products that are produced and sold during the data year if the measurement system meets the criteria for financial transaction meters in sections 95103(k)(7)(A)(1) through 95103(k)(7)(A)(3). Inventory measurements may be used to provide covered product data required by paragraphs (a)(7)-(10), (b), (c), and (d) of this section for products that are produced but not sold during the data year if the measurement system meets the measurement accuracy requirements of section 95103(k)(11). Any changes in product data reporting methodologies must conform to the requirements in 95103(m). Reporting entities must exclude inaccurate product data pursuant to section 95103(l).

(a) In addition to the data required by section 95157, the operator of an onshore and offshore petroleum and natural gas production facility must report the following data disaggregated within the basin ~~by each~~ to the sub-facility level~~that lies within contiguous property boundaries~~:

***

(7) Barrels of crude oil produced using thermal enhanced oil recovery. This ~~includes~~means the volume of crude oil produced within the facility boundary during the data year, a volume which may include the crude oil fraction piped as an emulsion as defined in section 95102(a);

(8) Barrels of crude oil produced using non-thermal enhanced oil recovery. This ~~includes~~means the volume of crude oil produced within the facility boundary during the data year, a volume which may include the crude oil fraction piped as an emulsion as defined in section 95102(a);

(9) MMBtu of associated gas produced using thermal enhanced oil recovery. This includes the associated gas fraction piped as an emulsion as defined in section 95102(a). Associated gas may be quantified using production or sales meters as appropriate. If using sales meters, associated gas may be quantified by multiplying the barrels of crude oil produced during the data year by a representative GOR measurement. If using the GOR approach, GOR

measurements used for quantifying associated gas must be the most disaggregated data available (e.g., field or tank farm level);

(10) MMBtu of associated gas produced using non-thermal enhanced oil recovery. This includes the associated gas fraction piped as an emulsion as defined in section 95102(a). Associated gas may be quantified using production or sales meters as appropriate. If using sales meters, associated gas may be quantified by multiplying the barrels of crude oil produced during the data year by a representative GOR measurement. If using the GOR approach, GOR measurements used for quantifying associated gas must be the most disaggregated data available (e.g., field or tank farm level).

***

(c) The operator of a natural gas liquid fractionating facility, a natural gas processing facility, or an onshore petroleum and natural gas production facility with a natural gas processing plant that processes less than 25 MMscf per day must report the annual production of the following natural gas liquids in barrels corrected to 60 degrees Fahrenheit:

(1) Ethane

***

(12) Bulk natural gas liquids not included in 95156(d)(1)-(11)

If a facility extracts natural gas liquids from produced gas, associated gas, or waste gas, and re-injects these natural gas liquids into barrels of crude oil produced at the same facility, the operator of such a facility shall report the amount of any re-injected natural gas liquids as covered product data pursuant to section 95156(a)(7) or (8). All other natural gas liquids produced at the facility should be reported as covered product data pursuant to section 95156(c).

***

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

§95157. Activity Data Reporting Requirements.

***

(b) For offshore petroleum and natural gas production, report emissions of CH_4, CO_2, and N_2O as applicable to the source type (in metric tons per year at standard conditions) individually for all of the emissions source types listed in the most recent BOEMRE study.

(c) Report the information listed in this paragraph for each applicable source type in metric tons for each GHG type. If a facility operates under more than one industry segment, each piece of equipment should be reported under the unit's respective majority use segment. When a source type listed under this paragraph routes gas to flare, separately report the emissions that were vented directly to the atmosphere without flaring, and the emissions that resulted from flaring of the gas. Both the

vented and flared emissions will be reported under respective source types and not under flare source type.

***

(10) For well testing venting and flaring (refer to Equation 15 or 16 of section 95153(j)), report the following:

***

(B) Average gas-to-oil ratio for each basin.

***

(11) For associated natural gas venting and flaring (refer to Equation 17 of section 95153), report the following for each basin:

***

(B) Average gas-to-oil ratio for each basin.

***

(12) For flare stacks (refer to Equation 18, 19, and 20 of section 95153(l)), report the following for each flare:

***

(F) Report ~~uncombusted~~ CH_4 emissions, in metric tons (refer to Equation 18 of section 95153).

(G) Report ~~uncombusted~~ CO_2 emissions, in metric tons (refer to Equation 19 of section 95153).

~~(H) Report combusted CO_2 emissions, in metric tons (refer to Equation 20 of section 95153).~~

(~~I~~H) Report N_2O emissions, in metric tons.

(~~J~~I) For the natural gas processing industry segment, a unique name or ID number for the flare stack.

(~~K~~J) In the case that a CEMS is used to measure CO_2 emissions for the flare stack, indicate that a CEMS was used in the annual report and report the combusted CO_2 and uncombusted CO_2 as a combined number.

***

(16) For local distribution companies, report the following:

***

(U) Annual CO_2 and CH_4 emissions, in metric tons for each gas, from customer meters serving residential, commercial, and industrial customers, respectively.

(V) Annual CO_2 and CH_4 emissions, in metric tons for each gas, from pipeline dig-ins.

(W) Number of customer meters at residential, commercial, and industrial premises, respectively.

(X) Number of pipeline dig-ins.

***

(19) For onshore petroleum and natural gas production and natural gas distribution combustion emissions, report the following:

***

(F) Report annual CO_2, CH_4 and N_2O emissions from ~~external~~internal fuel combustion units with a rated heat capacity larger than 5 MMBtu/hr, expressed in metric tons for each gas, by type of unit.

***

(I) Onshore petroleum and natural gas production facilities may voluntarily report total thermal input (MMBtu) to EOR wells generated using renewable energy source(s) as defined in section 95102(a).

***

(e) For onshore petroleum and natural gas production, report the best available estimate of API gravity, best available estimate of gas-to-oil ratio, and best available estimate of average low pressure separator pressure for each oil basin category.

NOTE: Authority cited: Sections 38510, 38530, 39600, 39601, 39607, 39607.4 and 41511, Health and Safety Code. Reference: Sections 38530, 39600 and 41511, Health and Safety Code.

***

Appendix A

to the Regulation for the Mandatory Reporting
of Greenhouse Gas Emissions

Emission Factors and Calculation Data
for Petroleum and Natural Gas Systems Reporting

***

Table 7
Default Methane Emission Factors for Natural Gas Distribution

Natural gas distribution	Emission Factor (scf/hour/component)
***	
Population Emission Factors – Customer Meters	Emission Factor (scf/meter-hour)
Residential	0.01582
Commercial	0.00547
Industrial	0.00547

***

Appendix B
to the Regulation for the Mandatory Reporting
of Greenhouse Gas Emissions

TEST PROCEDURE

Flash Emissions of Greenhouse Gases and Other Compounds from Crude Oil and Natural Gas Separator and Tank Systems

Test Procedure

Flash Emissions of Greenhouse Gases and Other Compounds from Crude Oil and Natural Gas Separator and Tank Systems

***

2. PRINCIPLE AND SUMMARY OF TEST PROCEDURE

The sampling and laboratory methods specified in this procedure are used to take samples of liquids and conduct a Flash Analysis on crude oil or natural gas separator and tank systems and are based on American Standards and Testing Materials (ASTM), US Environmental Protection Agency (EPA), and Gas Processor Association (GPA) methods and standards. The alternative vapor recovery system methodology described in Sections 9 and 10.2 is based on common industry practices.

Samples must be taken from a primary vessel located in a separator and tank system using the sampling methods specified in this procedure. Non-pressurized tanks or secondary vessels may not be used for sampling. Typical sampling points are from pressurized Two-Phase or Three-Phase Separators or vessels used to measure Percent Water Cut (e.g., Automatic Well Tester). The liquids found in these vessels contain gases that will flash from the liquids as vapor when the liquids flow into lower pressure secondary vessels. This procedure is used to measure both the volume and composition of this flashed gas vapor. Liquid samples of a crude oil-produced water emulsion do not contain enough crude oil to be evaluated by a laboratory and are not applicable to this procedure.

Two sampling methods are specified: The first is a displacement method used for gathering crude oil or condensate. The second is for gathering produced water. Both methods are specified due to the nature of the laboratory analyses and the design of the sampling cylinders. Produced water cannot be displaced

from a Double-Valve Cylinder using laboratory grade water and heavy crude oil may solidify and cause problems with a Floating-Piston Cylinder.

The laboratory methods are used to measure the composition and volume of gas that flash from liquids while they cool or depressurize to standard atmospheric conditions. This includes the molecular weight and weight percent of the gaseous compounds and a Gas-to-Oil Ratio or Gas-to-Water Ratio. The laboratory results are applied to the annual liquid production rates to calculate Greenhouse Gas and other compound emission rates per year.

***

10. CALCULATING RESULTS

10.1 Flash Emission Calculation Methodology for Liquid Samples

The following is used in conjunction with vessel information and a laboratory analysis to calculate metric tons of Greenhouse Gases (CO_2 and CH_4) or short tons of other compounds ($VOC_{C3\text{-}C9}$ or BTEX). The same formulas may be applied to crude oil, condensate, and produced water.

***

(c) Calculate the total volume of gas produced per year:

$$Ft^3 / Year = (G)\left(\frac{Barrels}{Day}\right)\left(\frac{Days}{Year}\right) \qquad \textbf{Equation 2}$$

Where:

Ft^3/Year = standard cubic feet of gas produced per year

G = Gas-to-Oil Ratio or Gas-to-Water Ratio (from lab analysis)

***

12.3 Laboratory Reports

Any chromatograph system that allows for the collection, storage, interpretation, adjustment, or quantification of chromatograph detector output signals representing relative component concentrations may be used to conduct this procedure. The laboratory results must be reported as specified in Section 11. A laboratory report that provides the following minimum information described below and in Table 1 must be provided to the facility operator so they can calculate and report the results specified in Sections 10 and 11:

***

(d) Volumetric Gas-to-Water Ratio (GWR) for produced water; and,

(e) Volumetric Gas-to-Oil Ratio (GOR) for crude oil or condensate.

***

Table 1

Flash Analysis Sampling and Laboratory Requirements

Gas Evolved from Crude Oil, Condensate, or Produced Water
***
Gas-to-Oil Ratio
Gas-to-Water Ratio

***

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