CALIFORNIA
AIR RESOURCES BOARD

Verifier Accreditation Training for Mandatory GHG Reporting

Transaction Specialty – Course 2.2

Suppliers of Transportation Fuels

MRR Verifier Accreditation: Course Content

- Course 2: Transactions Specialty
  - 2.1 Electric Power Entities
  - 2.2 Suppliers of Transportation Fuels
  - 2.3 Suppliers of Natural Gas, Natural Gas Liquids, Liquefied Petroleum Gas, CNG and LNG
  - 2.4 Suppliers of Carbon Dioxide (CO2)

Course 2.2 Handouts

- Course 2.2 Handouts
  - Handout 2.2.1 – Fuel Supplier Emission Factors (PDF)
  - Handout 2.2.2 – Fuel Supplier calculation spreadsheet (.xlsx)
  - Handout 2.2.3 – Fuel Supplier sample Cal e-GGRT emissions data report (PDF)

Course 2.2: Transportation Fuel Suppliers

1. **Overview**
   - **Key Regulatory Sections**
   - **Contribution of Transportation Emissions**
   - **Reported Transportation Fuels**
   - **Fuel Suppliers and Reporters**
   - **What to Report**
   - **Reporting and Verification Thresholds**
2. Reporting Information
3. Emissions Calculations
4. Case Study 1
5. Monitoring & Meter Calibration
6. Verification
7. Case Study 2

Key Regulatory Sections Pertaining to Suppliers of Transportation Fuels

- **§95121. Reporting requirements**
- §95101. Applicability
  - (c) Fuel and Carbon Dioxide Suppliers
- §95102. Definitions
- §95103. General Reporting Requirements
  - (k) Measurement Accuracy Requirement
- §95105. Recordkeeping
  - (c) GHG Monitoring Plan for Facilities and Suppliers
- §95113. Petroleum Refineries
- 40 CFR Part 98 Subpart MM and C
- Guidance for Fuel Supplier Greenhouse Gas Reporting
  - https://ww3.arb.ca.gov/cc/reporting/ghg-rep/guidance/fuel-supplier.pdf

Transportation Fuels Reported under §95121

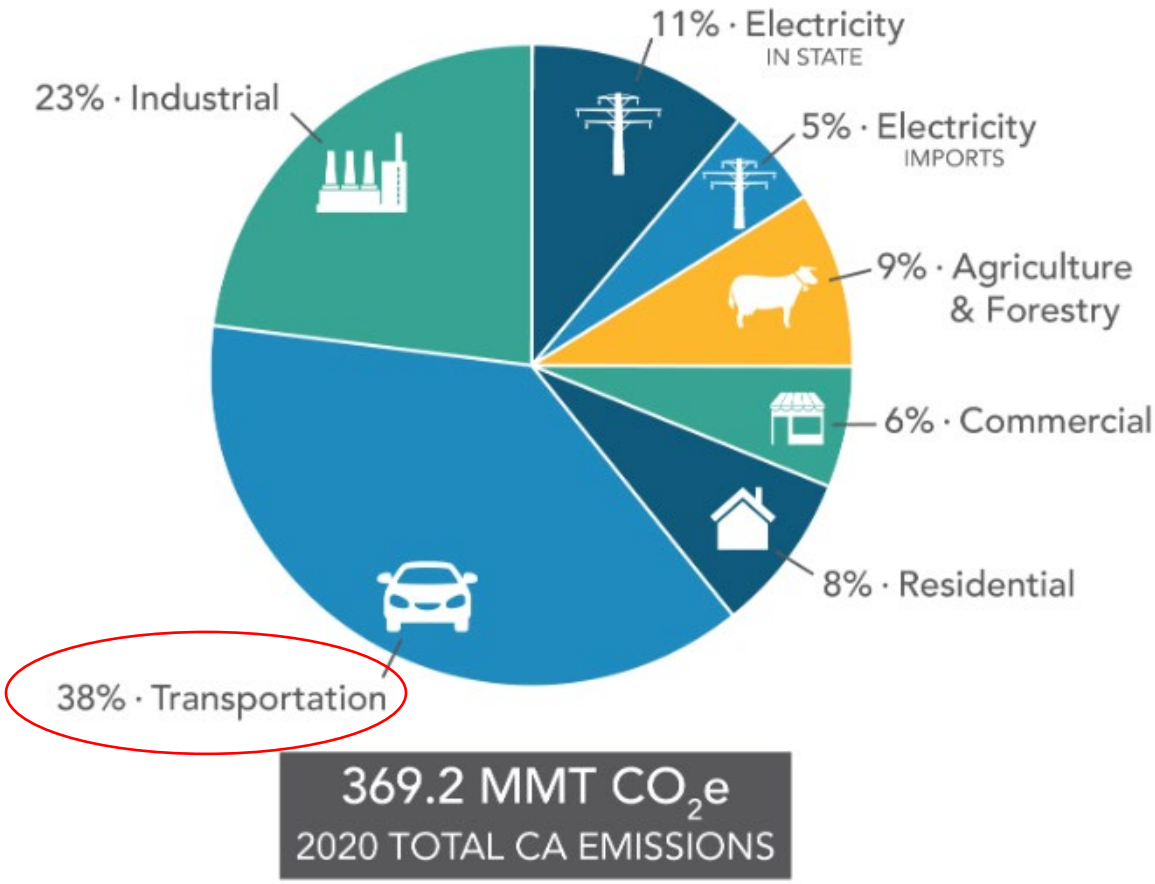
Fuel Types	
RBOB (CARBOB) —Summer	**Liquefied Petroleum Gas (LPG)**
Regular	Ethane
Midgrade	Ethylene
Premium	Propane
RBOB (CARBOB) —Winter	Propylene
Regular	Butane
Midgrade	Butylene
Premium	Isobutane
CBOB—Summer	Isobutylene
Regular	Pentanes Plus
Midgrade	**Biomass-Derived Fuel**
Premium	Ethanol (100%)
CBOB—Winter	Biodiesel (≥99%, methyl ester)
Regular	Renewable diesel (≥99%)
Midgrade	Rendered Animal Fat
Premium	Vegetable Oil
Distillate Fuel Oils	
Distillate No. 1	
Distillate No. 2	

Section 95121: Table 2-5

Transportation is a Significant Contributor to California's GHG Emissions

2020 California Emissions Inventory

~140 Million MT CO_2e Transportation Fuels



Updated from 2020 training. See errata.

Source: https://ww2.arb.ca.gov/ghg-inventory-data

Oil and Gas Process Diagram

Oil and Gas extraction and processing. (Report §§95150-58)

Crude oil

Refinery (§§95111, 95113, 95115)

Transportation fuels supplied via on-site rack. (§95121, reported by refinery operator)

Natural gas (NG) and natural gas liquids (NGLs)

Imported fuels ("enterer"). (§95121 if outside terminal system)

Transportation fuels supplied via terminal rack (§95121, reported by position holder at terminal)

NG and NGLs

NGL Fractionator (§§95150-58 and 95115 as direct emissions. §95122 for NGLs supplied. §§95150-58 for product data for NGLs produced.)

Pipeline NG

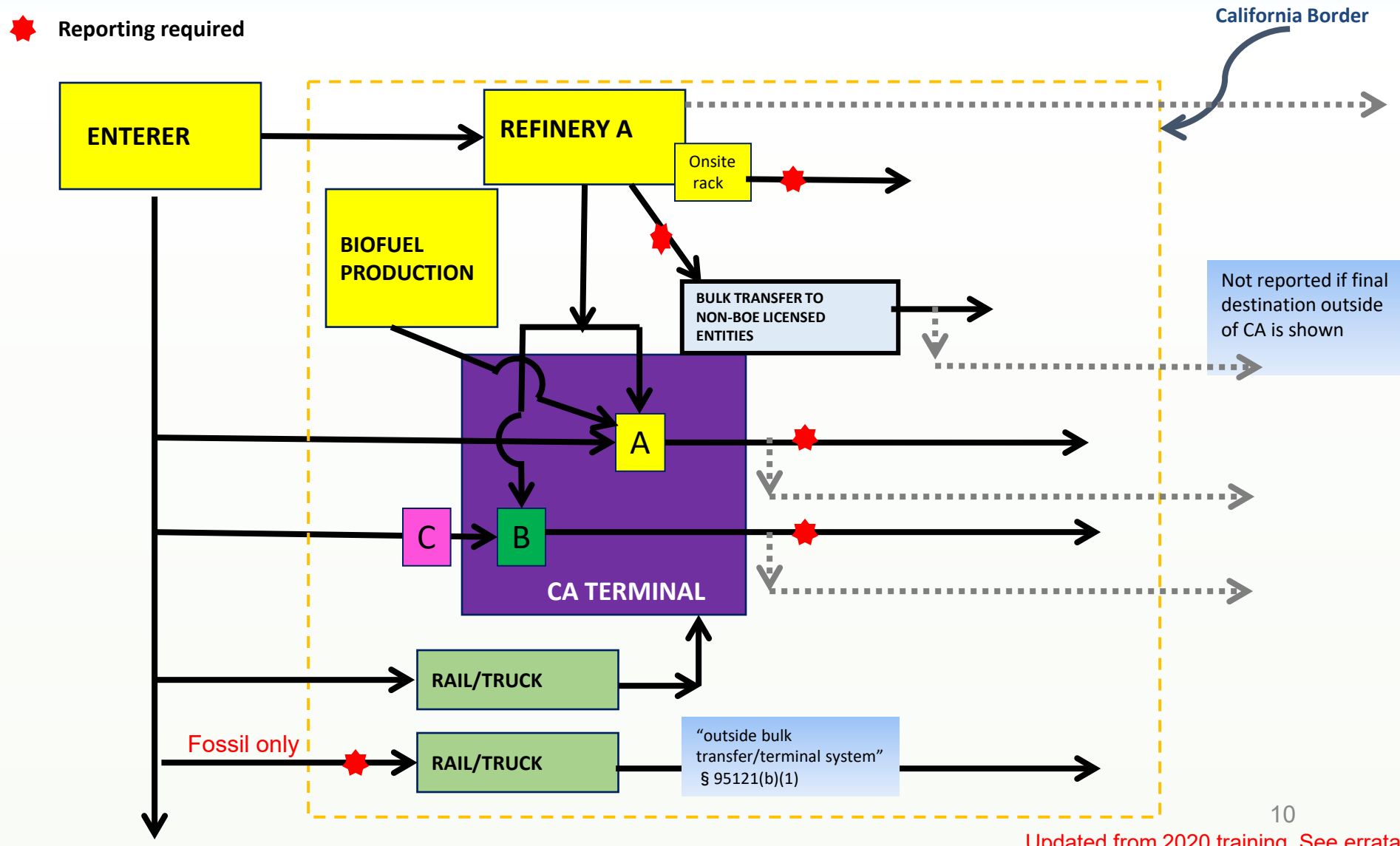
Pipeline natural gas

Natural gas distribution company/utility (§95122)

Transportation Fuel Suppliers & Reporters

- California fuel suppliers:
  - Position holders of fuels that supply fuel at California terminal racks
  - Enterers (importers) that import fossil transportation fuels for distribution outside the bulk transfer/terminal system
  - Refiners (outside of the bulk transfer/terminal system)
- Refiners that produce LPG fuel
  - Must report the GHG emissions of the annual quantity of LPG sold/delivered

Transportation Fuel Reporting Overview



Updated from 2020 training. See errata.

Definitions

- Position Holder
  - An entity that holds an inventory position in transportation fuel at a CA fuel terminal
- Refiner
  - An entity that delivers transportation fuel to end-users in CA that were produced at an entity or entity-subsidiary owned refinery
- Enterer
  - An entity that imports transportation fuel and is the importer of record under federal customs law or the owner of the fuel upon entry into CA

Reporting Entities

- Position Holders - Must report all transportation fuels that are delivered across the rack at California terminals
  - Fuels that change ownership upstream of a terminal rack (e.g. pre-terminal or inter-terminal transactions) are reported by the position holder that has ownership of the fuel as it is delivered across the rack
- Enterers - Must report all imported fuel delivered imported outside of the bulk transfer/terminal system
  - Transactions from an enterer to a California fuel terminal are not reported by the enterer (unless the enterer is also the position holder)
- Refiners of fuel - Must report fuels supplied via on-site rack, that are not destined for BOE-licensed terminal
  - Fuel supplier must be separate entity from refinery

Updated from 2020 training. See errata.

Bulk Transfers Upstream of Rack

- Refiners should not report fuel delivered in bulk via pipeline (or, rarely, trucked) to other fuel suppliers
  - Verifier must confirm that the purchaser is a licensed fuel supplier with the California Board of Equalization (BOE)
  - If this cannot be confirmed, the refiner must report the fuel delivered in bulk to the unlicensed entity
- First-rack rule: If a fossil fuel sold across a rack is re-blended and re-sold across a subsequent rack, only the position holder upstream of first rack is responsible for reporting.

What to Report

- Fuels (quantity)
  - Distributed from refineries to entities that are not licensed by the California Board of Equalization (BOE) as a "Supplier"
  - Terminal and refinery racks fuels delivered across rack for distribution
  - Fossil fuels distributed (outside the bulk system) by importers
- Emissions
  - CO_2, CH_4, N_2O, and CO_2e emissions that would result from the complete combustion, oxidation, or use of transportation fuels and LPG
  - Emissions must be reported for the individual fuels blendstocks, diesel fuels and biomass-derived fuels listed in Table 2-5 of §95121(b)

Reporting and Verification Thresholds

- Reporting threshold ≥ 10,000 MT CO2e
  - §95101(c): The suppliers are required to report when they produce, import and/or deliver an annual quantity of transportation fuel (listed in Table 2-5) that, when completely oxidized, would result in the release of ≥ 10,000 MT CO2e
- Verification threshold ≥ 25,000 MT CO2e
- Transportation fuel suppliers must submit separate reports from petroleum refinery reporting under §95113
- About 48 total transportation fuel suppliers verified in 2022

Updated from 2020 training. See errata.

Course 2.2: Transportation Fuel Suppliers

1. Overview
2. **Reporting Information**
   - **Fuels Included**
   - **MRR and other reporting programs**
3. Emissions Calculation
4. Case Study 1
5. Monitoring & Meter Calibration
6. Verification
7. Case Study 2

Fuels Included in "Transportation Fuels"

- Gasoline Blendstocks
  - RBOB
    - The primary blendstock of motor gasoline in CA
    - CARBOB is a special formulation of RBOB in CA. The same for reporting purposes.
  - CBOB
    - Conventional Blendstock for Oxygenate Blending
    - Commonly used in states other than CA – not legal for use as a vehicle fuel in CA
    - Any CBOB emissions should be carefully examined by verifier
- RBOB blended with Ethanol
  - Typically 90% RBOB and 10% Ethanol blended at the fuel terminal to produce finished motor gasoline (E10 motor gasoline -10% ethanol, 90% RBOB).
  - All components of finished fuels must be reported separately, i.e.: 100 barrels (bbls) of E10 would be reported as 90 bbl RBOB, 10 bbl ethanol

Fuels Included in "Transportation Fuels"

- Diesel Fuel
  - Only fuels that meet the definition of diesel (distillate) # 1 or # 2 is reported
  - Diesel #2 is common; diesel #1 rare in California
  - Includes both undyed (on-road) and dyed (off-road)
  - CARB diesel may contain up to 5% biodiesel without a special pump label. Only reportable if supplier has information to substantiate quantity
  - May also contain renewable diesel

Biomass-Derived Fuels

- Biodiesel is produced for distribution as pure biodiesel (B100) or biodiesel blends such as B20 (20% biodiesel, 80% fossil derived diesel)
  - "Pure" biodiesel may have <1% diesel blending. Per MRR, this can be considered 100% biodiesel
- All biodiesel, whether blended or unblended, is reported by the position holder or producer delivering the fuel across the rack IF reporter is able to substantiate volumes
- Volumes of biodiesel should be carefully documented and considered in your sampling plan

Biodiesel VS Renewable Diesel

- Biodiesel (BD) and renewable diesel (RD) are both biogenic fuels blended with diesel fuel, but tracked differently:
- RD often blended upstream and transacted as “regular” CARB diesel (discussed in guidance doc)
- CARB Diesel can be <5% biodiesel without selling as a “biodiesel product”
- BD volumes in blended fuel are tightly controlled to ensure volume does not exceed 5%
- RD can be blended in <u>any</u> ratio

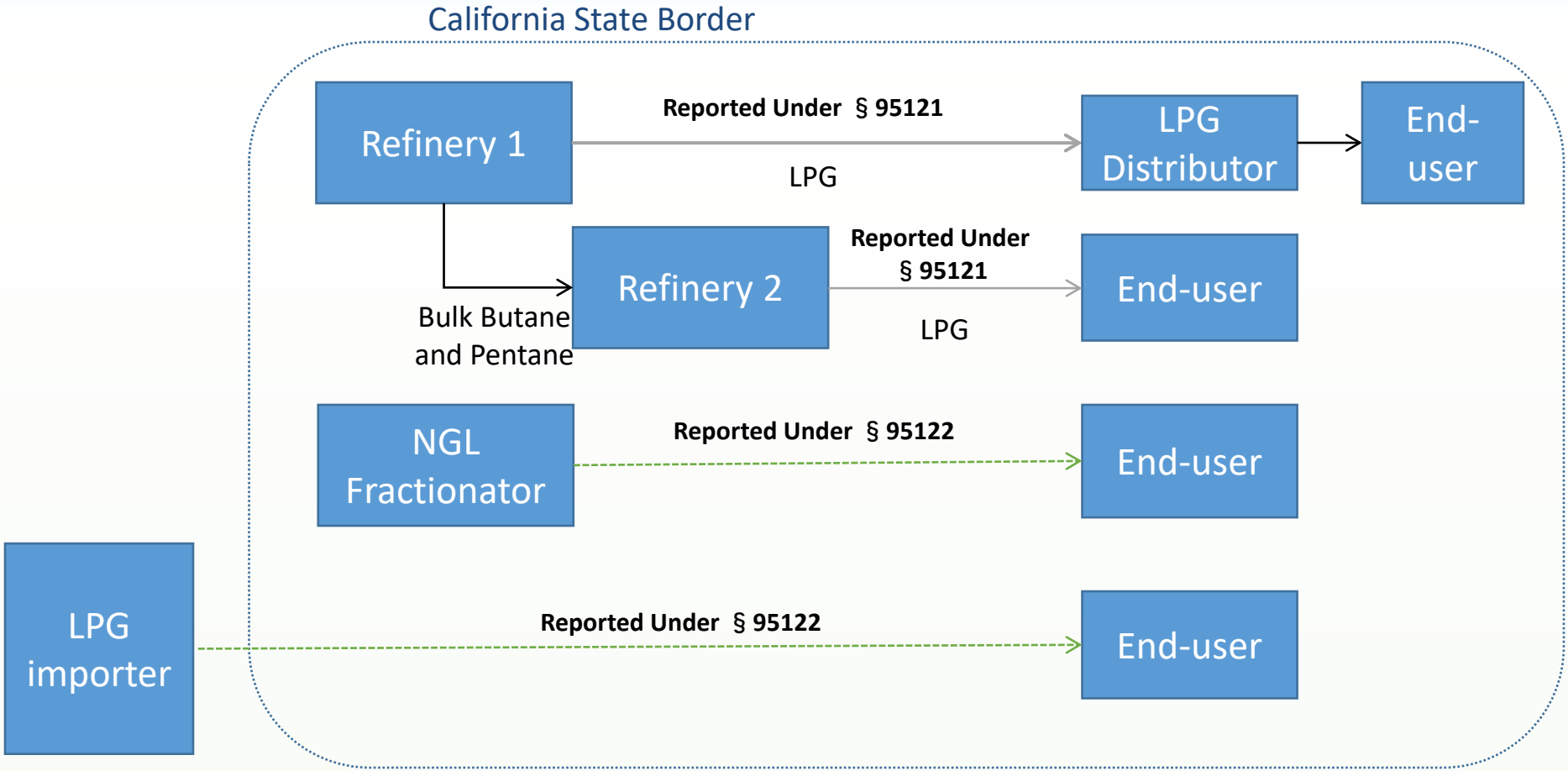
Reporting Biomass-Derived Diesel Fuels

- All biomass-derived diesel fuels require evidence of volumes transacted
- BD blends are generally “up to” listed amounts (e.g., B5 = up to 5% biodiesel)
- RD is chemically identical to fossil diesel
- For BD and RD, reporter must have title to fuel at point of regulation to claim as biomass-derived fuel. (Usually as a position holder)

Reporting Emissions from LPG

- LPG (Liquid Petroleum Gas) from a refiner
  - Components of LPG must be reported separately
    - Ethane, Ethylene, Propane, Propylene, Butane, Butylene, Isobutene, Isobutylene, Pentanes Plus
    - Different emission factors for each
- LPG produced in refineries is reported under §95121 but LPG produced by fractionators or imported are reported under §95122
- Refineries must report emissions resulting from LPG produced and delivered in California
  - Only those in mixtures that could be used as a fuel by an end-user
  - Bulk Butanes/Pentanes etc. sold to other refineries for use as feedstock do not fit the definition of LPG and are not reported as fuel for purposes of emissions calculations

Reporting Emissions from LPG



Excluded Fuel Volumes

- Fuel that may be **excluded** from emissions reporting with evidence:
  - fuels used in marine vessels and aviation;
  - fuels exported from California
  - fossil fuels previously delivered out of an upstream California terminal or refinery rack prior to delivery out of a second terminal rack (§95121(a)(2) in detail in guidance)
- The volume of all transportation fuels that are excluded from emissions reporting must be reported pursuant of §95121(d)(9) Burden of evidence is on reporter to exclude fuels. If evidence is not provided, fuel volumes must be included

MRR §95121 and Other Reporting Programs

- Renewable Fuel Standard (RFS)
  - RFS is a federal standard that requires the inclusion of biofuels in transportation fuels.
  - Good RFS tracking reduces risk of misreporting biofuels to MRR program
- CARB Low Carbon Fuel Standard (LCFS)
  - LCFS seeks to lower the carbon intensity of transportation fuel over time.
  - Fuel suppliers may use common data management systems for reporting to both programs

Course 2.2: Transportation Fuel Suppliers

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3. **Emissions Calculations**
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Emissions Calculations (1)

- Fuel Suppliers must calculate the emissions that result from the complete combustion of the fuel
- Reporting entities enter volume quantities into an XML spreadsheet where emissions are automatically calculated
- Key to correct emissions is reporting correct volumes!
  - In workbook, entities cannot alter EF or HHV
- Spreadsheet is then uploaded to Cal e-GGRT

Emissions Calculations (2)

Blendstock, Distilate Fuel Oil or Biomass-Derived fuel	[Product] Annual volume of product "i" delivered, or imported outside the bulk system, into California by the reporting party. Report CARBOB as RBOB. (barrels).
TOTAL	0
CBOB—Summer	
Regular	
Midgrade	
Premium	
CBOB—Winter	
Regular	
Midgrade	
Premium	
RBOB (CARBOB)—Summer	
Regular	
Midgrade	
Premium	
RBOB (CARBOB)—Winter	
Regular	
Midgrade	
Premium	

Spreadsheet is available here:
https://ccdsupport.com/confluence/download/attachments/112035331/Suppliers%20of%20Transportation%20Fuels%20Calculation%20and%20Reporting%20Tool.xls?version=14&modificationDate=1549304377000&api=v2

Emissions Calculations (3)

- Transportation fuel suppliers must use the following equation for calculation of CO2 (in MT) emissions - using emissions factors (EF) from Table MM-1, column C:
  - CO2i = Producti * EFi
  - Product is in bbl
  - EF is in MT of CO2/bbl

Emissions Calculations (4)

- For calculation of CH_4 and N_2O (in MT) emissions - Use the following equation and Table 2-4 (Table 1 in 2014 Reg.) of §95121(b) (3) for EF

  CH_4 or $N_2O = 1x10^{-6} * Fuel * EF$

  - This is Eq-C8 in Subpart C except uses EF below
  - Fuel is in bbl and EF is in g/bbl
- Table 2-4 of §95121(b) will be used for each fuel

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

Emissions Calculations (5)

- All fuel suppliers in this section must also estimate CO_2e emissions using the following equation:
- GHG_i =
  - Mass emissions of CO_2, CH_4, N_2O from fuels combusted or oxidized.
- GWP_i =
  - Global warming potential for each greenhouse gas as defined in §95102.
    - CO_2 = 1 GWP
    - CH_4 = 25 GWP
    - N_2O = 298 GWP

$$CO_2e = \sum_{i=1}^{n} GHG_i \times GWP_i$$

Updated from 2020 training. See errata.

Emissions Calculations (6)

- An example: Calculate the total CO_2e in metric tons (from CO_2, CH_4, and N_2O) for a position holder with 10,000 barrels Distillate No. 2
  - 10,000 bbl diesel* 0.4296 MT CO_2/bbl = 4,296 MT CO_2
  - 10,000 bbl diesel * 2 g CH_4/bbl * 1 MT/1,000,000g = 0.02 MT CH_4
  - 10,000 bbl diesel * 1 g N_2O/bbl * 1 MT/1,000,000g = 0.01 MT N_2O
- $CO2e = CO_2*1 + CH_4*25 + N_2O*298$
- CO_2e = 4,296 MT CO_2*1 + 0.02 MT CH_4*25 + 0.01 MT N_2O*298 = 4,297.49 MT

$$CO_2e = \sum_{i=1}^{n} GHG_i \times GWP_i$$

Updated from 2020 training. See errata.

Case Study 1

See Handout #2.2.4

Case Study 1: Review Bills of Lading for Use in Evaluating Fuel Throughput Data

Table 1	Emissions Reported		
Trans #	Fuel	Bbl	Destination
CARBOB1	RBOB summer regular	40	South Lake Tahoe, CA
CARBOB2	RBOB summer regular	50	Sacramento, CA
CARBOB4	RBOB summer regular	46	Orland, CA
CARBOB5	RBOB summer regular	84	Perris, CA
CARBOB6	RBOB summer regular	118	Lake Tahoe, NV
DistULS6	Distillate #2 ULS	114	Riverside, CA
DistULS7	Distillate #2 ULS	92	Merced, CA
DistULS8	Distillate #2 ULS	116	Tucson, AZ
DistULS9	Distillate #2 ULS	120	Salinas, CA
DistULS12	Distillate #2 ULS	90	Emeryville, CA
DistULS15	Distillate #2 ULS	70	Rialto, CA

Table 2	Bills of lading		
Trans #	Fuel	Bbl	Destination
CARBOB1	RBOB summer regular	40	South Lake Tahoe, CA
CARBOB2	RBOB summer regular	50	Sacramento, CA
CARBOB4	RBOB summer regular	46	Orland, CA
CARBOB5	RBOB summer regular	84	Perris, CA
CARBOB6	RBOB summer regular	118	Lake Tahoe, NV
CARBOB7	RBOB summer regular	100	Medford, OR
DistULS6	Distillate #2 ULS	114	Riverside, CA
DistULS7	Distillate #2 ULS	92	Merced, CA
DistULS8	Distillate #2 ULS	116	Tucson, AZ
DistULS9	Distillate #2 ULS	120	Salinas, CA
DistULS9	Distillate #2 ULS	125	Las Vegas, NV
DistULS12	Distillate #2 ULS	90	Emeryville, CA
DistULS13	Distillate #2 ULS	100	Phoenix, AZ
DistULS15	Distillate #2 ULS	70	Rialto, CA
DistULS17	Distillate #2 ULS	130	Bakersfield, CA
DistULS19	Distillate #2 ULS	150	Reno, NV

- You are verifying the emissions from a position holder at a California terminal. The reported fuel transactions are included in Table 1.
- You have requested all BOLs for fuel transactions during that time period. The results are in the Table 2 above.
- Identify any errors that were made in the emissions data report, calculate the percent error, and determine whether a material misstatement is present.
- Identify what volumes of fuels should have been reported as excluded, pursuant to §95121(d)(9)

Case Study 1: Review Bills of Lading for Use in Evaluating Fuel Throughput Data - Solution

	Bills of lading		
Trans #	Fuel	Bbl	Destination
CARBOB1	RBOB summer regular	40	South Lake Tahoe, CA
CARBOB2	RBOB summer regular	50	Sacramento, CA
CARBOB4	RBOB summer regular	46	Orland, CA
CARBOB5	RBOB summer regular	84	Perris, CA
~~CARBOB6~~	~~RBOB summer regular~~	~~118~~	~~Lake Tahoe, NV~~
~~CARBOB7~~	~~RBOB summer regular~~	~~100~~	~~Medford, OR~~
DistULS6	Distillate #2 ULS	114	Riverside, CA
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DistULS15	Distillate #2 ULS	70	Rialto, CA
DistULS17	Distillate #2 ULS	130	Bakersfield, CA
~~DistULS19~~	~~Distillate #2 ULS~~	~~150~~	~~Reno, NV~~

Transactions in **black** text, strikethrough represent transactions with destinations outside of California, which were appropriately excluded from the emissions data report.

Transactions in blue text, strikethrough represent transactions with destinations outside of California, which were included the emissions data report.

The transaction in red text was erroneously excluded, and represents a correctable error.

Reporting entities may exclude transactions for which they can provide evidence that they are destined for outside California, but their inclusion does not represent a correctable error. (The calculation of material misstatement is shown both ways on the following slides.)

Case Study 1: Review BOL for Use in Evaluating Fuel Throughput Data – Solution (2) if excluding out-of-state

	Bills of lading		
Trans #	Fuel	Bbl	Destination
CARBOB1	RBOB summer regular	40	South Lake Tahoe, CA
CARBOB2	RBOB summer regular	50	Sacramento, CA
CARBOB4	RBOB summer regular	46	Orland, CA
CARBOB5	RBOB summer regular	84	Perris, CA
~~CARBOB6~~	~~RBOB summer regular~~	~~118~~	~~Lake Tahoe, NV~~
~~CARBOB7~~	~~RBOB summer regular~~	~~100~~	~~Medford, OR~~
DistULS6	Distillate #2 ULS	114	Riverside, CA
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DistULS15	Distillate #2 ULS	70	Rialto, CA
DistULS17	Distillate #2 ULS	130	Bakersfield, CA
~~DistULS19~~	~~Distillate #2 ULS~~	~~150~~	~~Reno, NV~~

- 220 bbl CARBOB x .3686 $MTCO_2$/bbl = <u>81.09</u> $MTCO_2$
- 616 bbl DFO #2 x .4296 $MTCO_2$/bbl = <u>264.63</u> $MTCO_2$
- <u>345.72</u> $MTCO_2$ verifier total (383.21 $MTCO_2$ total reported)
- (345.72 – 383.21)/ 383.21 = **-9.8%** error

Updated from 2020 training. See errata.

Case Study 1: Review BOL for Use in Evaluating Fuel Throughput Data – Solution (3) if including out-of-state

	Bills of lading		
Trans #	Fuel	Bbl	Destination
CARBOB1	RBOB summer regular	40	South Lake Tahoe, CA
CARBOB2	RBOB summer regular	50	Sacramento, CA
CARBOB4	RBOB summer regular	46	Orland, CA
CARBOB5	RBOB summer regular	84	Perris, CA
~~CARBOB6~~	~~RBOB summer regular~~	~~118~~	~~Lake Tahoe, NV~~
~~CARBOB7~~	~~RBOB summer regular~~	~~100~~	~~Medford, OR~~
DistULS6	Distillate #2 ULS	114	Riverside, CA
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DistULS15	Distillate #2 ULS	70	Rialto, CA
DistULS17	Distillate #2 ULS	130	Bakersfield, CA
~~DistULS19~~	~~Distillate #2 ULS~~	~~150~~	~~Reno, NV~~

- 338 bbl CARBOB x .3686 $MTCO_2$/bbl = <u>124.59</u> $MTCO_2$
- 732 bbl DFO #2 x .4296 $MTCO_2$/bbl = <u>314.47</u> $MTCO_2$
- <u>439.06</u> $MTCO_2$ verifier total (383.21 $MTCO_2$ total reported)
- (439.06 – 383.21)/ 383.21 = **14.6%** difference
- Exclusion of DistULS17 represents correctable error

Updated from 2020 training. See errata.

Case Study 1: Review BOL for Use in Evaluating Fuel Throughput Data – Solution (4) if including out-of-state

	Bills of lading		
Trans #	Fuel	Bbl	Destination
CARBOB1	RBOB summer regular	40	South Lake Tahoe, CA
CARBOB2	RBOB summer regular	50	Sacramento, CA
CARBOB4	RBOB summer regular	46	Orland, CA
CARBOB5	RBOB summer regular	84	Perris, CA
~~CARBOB6~~	~~RBOB summer regular~~	~~118~~	~~Lake Tahoe, NV~~
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DistULS15	Distillate #2 ULS	70	Rialto, CA
DistULS17	Distillate #2 ULS	130	Bakersfield, CA
~~DistULS19~~	~~Distillate #2 ULS~~	~~150~~	~~Reno, NV~~

- §95121(d)(9) requires that entities report fuel "that is excluded from emissions reporting due to demonstration of final destination outside California"
- As currently reported, the entity must report as excluded:
  - 100 bbl RBOB AND
  - 225 bbl of DFO #2
- If entity updates their report to exclude all BOLs sent out of CA, they would report as excluded:
  - 218 bbl RBOB AND
  - 341 bbl of DFO #2

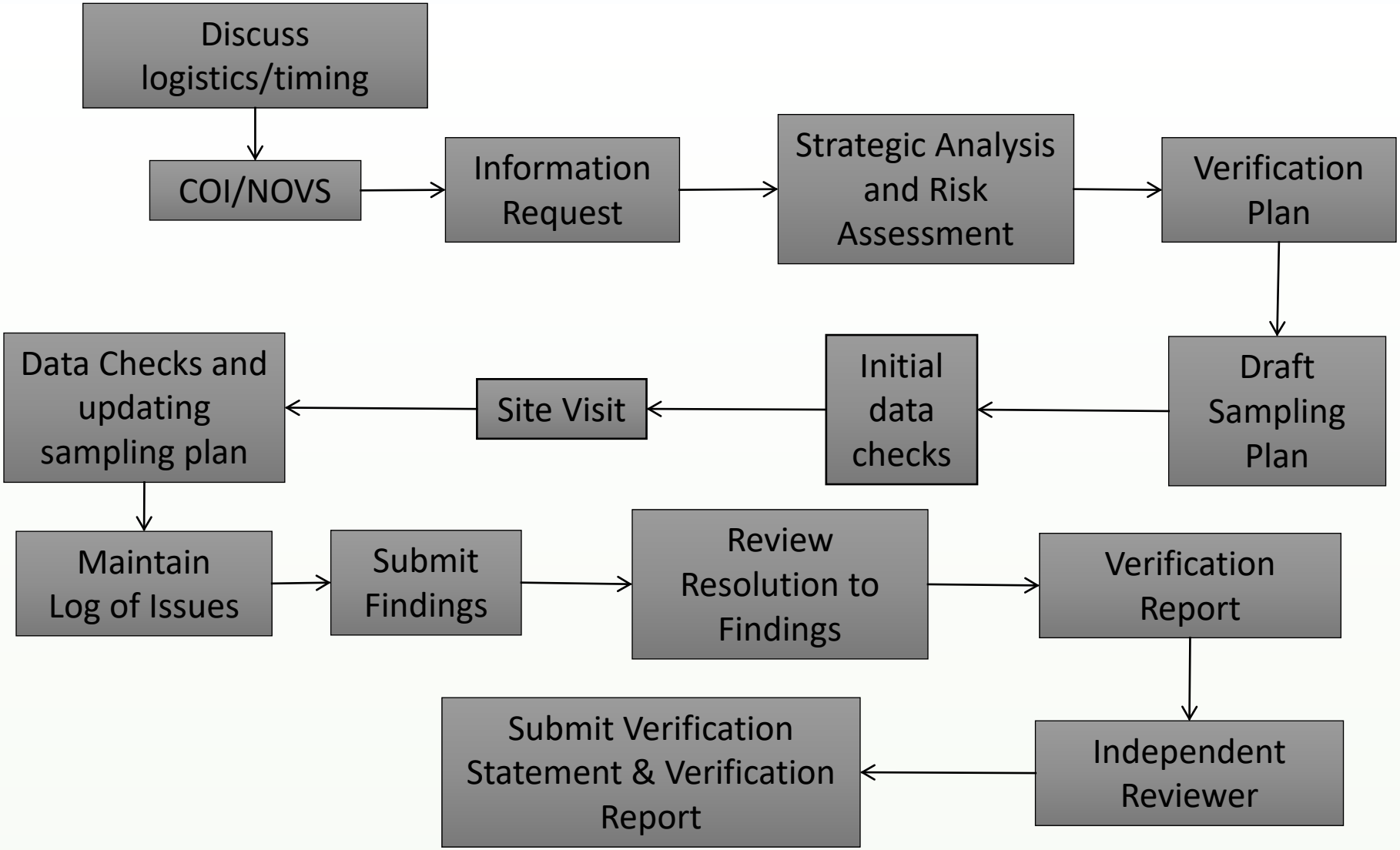
Course 2.2: Transportation Fuel Suppliers

1. Overview
2. Reporting Information
3. Emissions Calculations
4. Case Study 1
5. **Monitoring & Meter Calibration**
6. **Verification**
   - **A Reminder**
   - **Verifying Emissions**
   - **Site Visit**
   - **Verifying Excluded Fuels**
   - **Missing Data Substitutions**
7. Case Study 2

Monitoring & Meter Calibration in MRR §95121(c)

- Part §98.3(i) and MRR §95103(k) specify calibration and measurement accuracy requirements for the suppliers.
- §95103(k)(7) and §95121(c) state which meters are exempt from calibration requirement.
- Key question: Does the fuel supplier and receiving entity have common or affiliated ownership?
  - No => Do not need to meet calibration requirements
  - Yes => Must meet calibration requirements unless any of the follow conditions exist:
    - Fuel supplier does not operate the fuel billing meter
    - Billing meter is also used by unaffiliated companies
    - Billing meter is sealed by County sealer of weights and measures

Verification Process: A Reminder



Verifying Emissions: First Steps

- Review Cal e-GGRT report and spreadsheet reporting form
- Initial data request:
  - GHG Monitoring Plan
  - Database fuel tracking
- Draft Verification Plan
- Draft Sampling Plan
  - Strategic Analysis and Risk Assessment
  - Plan approach to verification:
    - Understand how data flow from initial creation to input in report
    - Ensure sampling approach traces data to source
    - Sample path from emissions report to data source
    - Sampling based on volume of product, type of product and calculated emissions for each product
    - Remember qualitative considerations and exports out-of-state and exclusions for aviation and marine fuels

Verifying Emissions: Site Visit or Webinar (1)

- Interview staff early in the site visit. Include questions like:
  - Do they understand the MRR requirements and give confidence that the data was input correctly?
  - What QA checks or final reconciliations were done?
  - If volumes listed in different data sources disagree, which value is reported and why?
  - Are these steps documented in GHG Monitoring Plan?
- Identify product measurement and calibration points, even if they are financial meters
- Identify responsible parties for tracking transactions/providing data. Is it the reporter or a third party? How does this change the risk for misreporting?
  - Are those parties also responsible for calibration and operation of meters?

Verifying Emissions: Site Visit (2)

- After obtaining database of transactions maintained by reporter:
  - Compare database to data reported to CARB
  - Discuss with staff how database is maintained, what other purposes it serves and what queries/filters are applied prior to reporting to CARB
  - Ask staff to recreate any queries or filters for one month of data (or more if you consider it warranted)
  - Ask about reconciliations and original vs. final values
- Select a percentage of invoices to review, focusing on high risk sources identified in sampling plan
  - Both quantitative and qualitative risks

Verifying Emissions: Site Visit (3)

- Review bills of lading for any shipments that were excluded due to out-of-state destination, aviation or marine use
- After site visit/webinar:
  - Cross-check vs. BOE tax data found here: http://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm Ask about differences identified – list in issues log
  - Review for other errors: reporting spreadsheet populated correctly; CBOB instead of CARBOB; DFO #1 instead of #2
- Spend ample time on tracking and reconciliation
  - What is the origin of final data reported?
  - Is it reconciled to other sources?
  - When sources are in conflict, which one is selected and why?

Excluded Fuels

- Verifiers should determine what fuels were excluded due to export from CA or marine/aviation usage
- Are these fuels appropriately reported in emissions data report as excluded (§95121(d)(9))?
- For fuel exported from California:
  - How was export amount determined?
  - Do bills of lading show destination outside of California?
  - Are exported fuels “CARB fuels” (CARB diesel, CARBOB), or fuels not used in California? (Non-CARB fuel exports are lower risk)

Excluded Fuels

- For aviation/marine fuels:
  - Is it a reportable fuel? If not, low risk.
    - Many aviation fuels (jet fuel A, aviation gasoline) are not reportable
  - Review GHG Monitoring Plan—this should be discussed
  - What evidence do they have the fuel is used exclusive for marine/aviation applications?
  - Do bills of lading show marine-only terminal? How is that documented?
  - Do they use separate fuel codes and customer accounts for marine fuel? How is this documented? What controls are in place?

Missing Data Substitutions

- "Missing" or invalid data is unlikely to be encountered, since the values verifiers see are likely already the result of established billing procedures
- However, verifiers should ask how invalid data would be reconciled; any terminal/refinery racks that are not two-party financial transactions should be discussed
- Consider requesting a copy of their financial audit even if audit from prior year,
  - any major issues with revenue could be a flag to consider missing/invalid data

Case Study 2

Verifying a Fuel Supplier

Risk-Based Sampling for Bob's Fuel Supplier

The next three slides are an **example** of how the verifier might consider risk in a verification, which was discussed during the training. This is not a template.

(In barrels)	RBOB Summer Regular	RBOB Winter Premium	RBOB Winter Regular	Diesel #2 (next slide)
Sales at Terminal 1 – from entity-owned refinery	450,000	110,000	315,000	86,500
Sales at Terminal 1 – purchased upstream from Company A	0	0	40,000	20,000
Remote Terminal 2 – purchased upstream from Company B	35,900	12,500	0	211,000

Confirm with both engineering and financial staff how transactions were compiled from raw data/invoices; Check June & August transactions; Test one day for consistency.

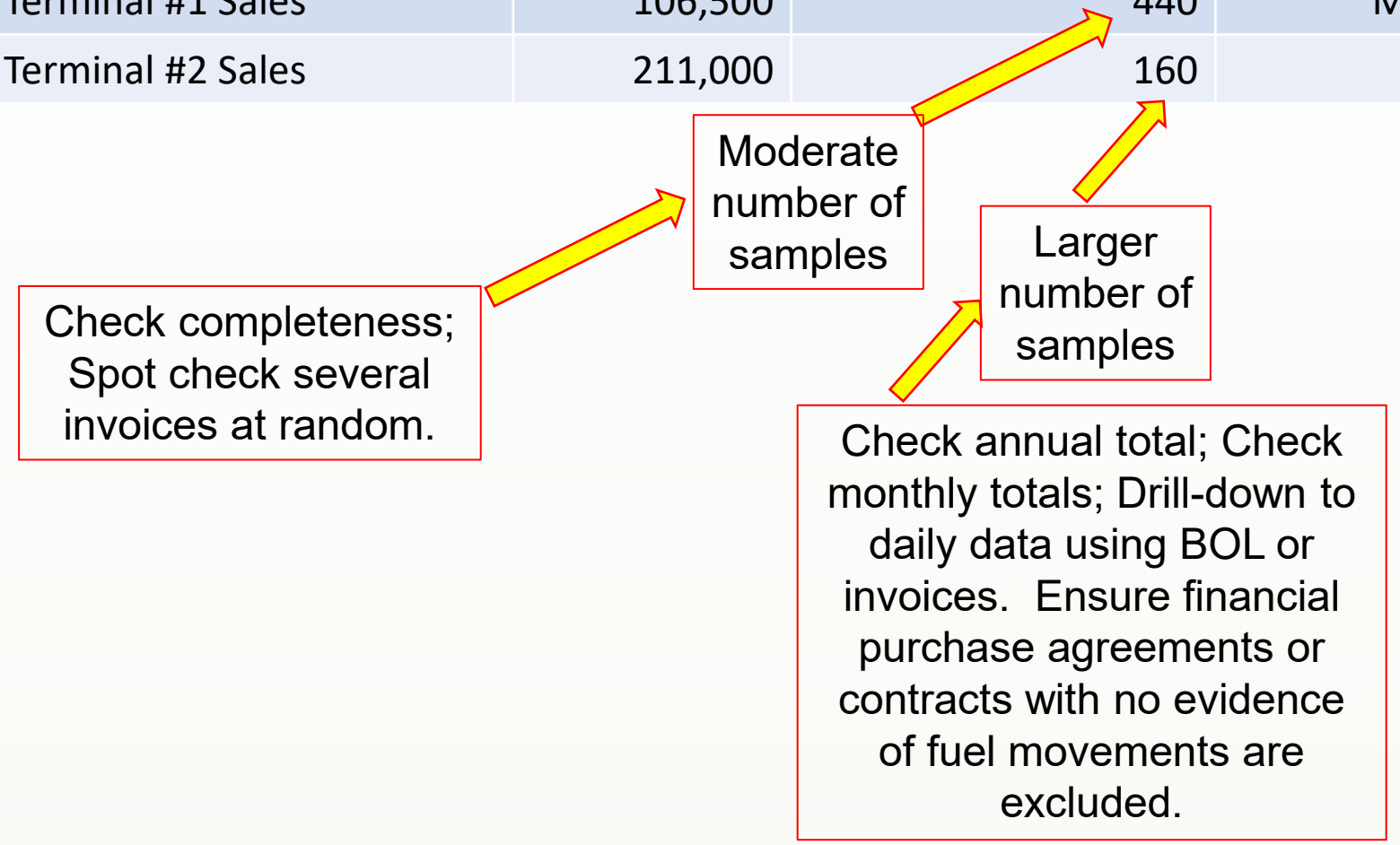
Detailed recalculation of Feb-March sales; validate with all other in-house data sets.

Remote terminal managed by different group; Risk of mishandling data; check completeness.

Purchase invoices are well-documented; review system; check subset of invoices.

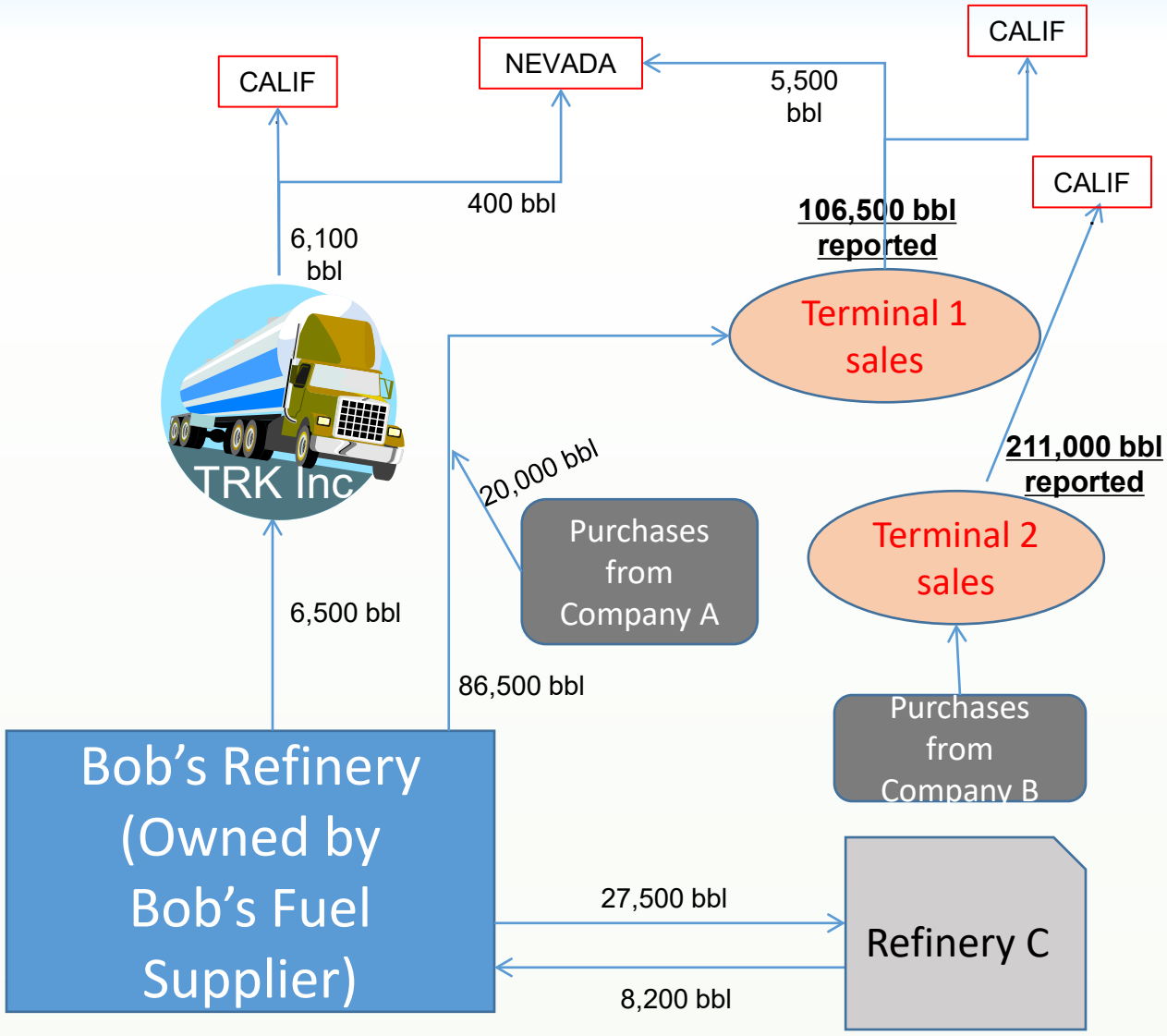
Data Checks for Diesel Fuel

	Diesel #2 (in barrels)	# of Invoices or Records to Review	Risk Ranking
Terminal #1 Sales	106,500	440	Medium
Terminal #2 Sales	211,000	160	High



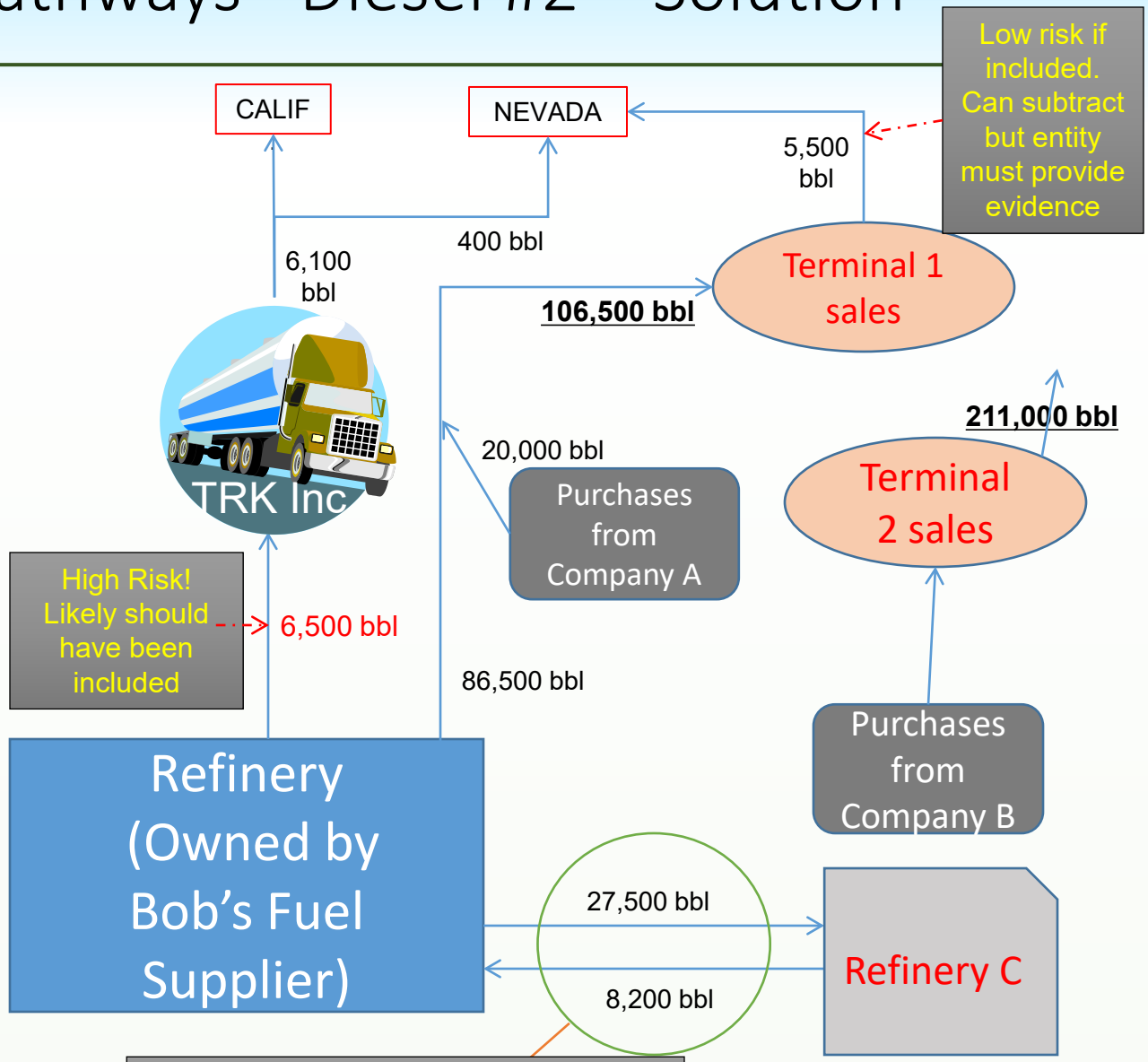
Tracing Fuel Pathways - Diesel #2

Location and volume	Was it reported?
Terminal #1 Sales, 86,500 + 20,000 bbl	Reported
Terminal #2 Sales, 211,000 bbl	Reported
Purchases from A (20,000 bbl)	Included in terminal #2 sales
Refinery C Sales (27,500 bbl)	Not reported
Purchases from Refinery C (8,200 bbl)	Not reported
Sales to TRK Inc. (6,500 bbl)	Not reported



Tracing Fuel Pathways - Diesel #2 – Solution

Location and volume	Was it reported correctly?
Terminal #1 Sales, 86,500 + 20,000 bbl	Correctly Reported
Terminal #2 Sales, 211,000 bbl	Correctly Reported
Purchases from A (20,000 bbl)	Correctly included in terminal #2 sales
Refinery C Sales (27,500 bbl)	Correctly Excluded
Purchases from Refinery C (8,200 bbl)	Correctly Excluded
Sales to TRK Inc. (6,500 bbl)	Not reported



Participation Exercise 2.2.1

- See subpart MM emissions data report in handouts
- Familiarize yourself with the format of the report and review the reported transactions
- How would you approach a risk assessment and sampling plan if you had this data?
- Identify any particular issues or red flag that you would sample.

Course 2: Transactions

Complete:

- Course 2.1: Electric Power Entities (EPE)
- Course 2.2: Suppliers of Transportation Fuels

Next:

- Course 2.3: Suppliers of Natural Gas, Natural Gas Liquids & Liquefied Petroleum Gas
- Course 2.4: Suppliers of CO_2