Guidelines for Fuel Dispensing Operations



(Revised December 2022)

Detailed Site-Specific AP-42 Method

When estimating emissions from underground storage tanks, it is assumed that no breathing or standing losses occur because the insulating nature of the earth limits the temperature change. Underground storage tanks are classified as fixed roof tanks, users NOT submitting an Abbreviated Report may use the current AP-42, Chapter 7.1 (June 2020) methodology to estimate working loss (total loss) for aboveground or underground storage tanks.

Default Emission Factor Method

For service stations and other facilities where gasoline and/or diesel fuel are transferred and dispensed, VOC emissions may be estimated and reported using emission factors established by the South Coast AQMD and the California Air Resources Board (CARB). Diesel fuel dispensing emission factors were estimated based on AP-42, Chapter 5.2 (June 2008). These emission factors include losses from loading, storing, dispensing, and spills or leaks from all components of the transfer and dispensing facility. All gasoline fuel dispensing assumes emissions control technology. Users should use the appropriate emission factor for diesel fuel dispensing based on whether the operations are controlled or uncontrolled.

For Gasoline Fuel Dispensing:

Underground Gasoline Tanks:

VOC EF = 0.743 lb/1000 gal (controlled)

Toxics Emissions:

- Benzene EF = 0.00399 lb/1000 gal
- Ethylbenzene EF = 0.00364 lb/1000 gal (for AB2588 facilities)

Aboveground Tanks:

VOC EF = 0.921 lb/1000 gal (controlled)

Toxics Emissions:

- Benzene EF = 0.00480 lb/1000 gal
- Ethylbenzene EF = 0.00383 lb/1000 gal (for AB2588 facilities)

For Diesel Fuel Dispensing:

VOC EF = 0.028 lb/1000 gal (uncontrolled) VOC EF = 0.0028 lb/1000 gal (controlled)

The AER Reporting Tooling automatically populates these default emission factors when fuel dispensing is chosen as an emission source category in the Edit Device Page.

Fuel Dispensing

Example Reporting for Gasoline Dispensing at a Fueling Site

An industrial facility operating on-site refueling equipment dispensed 25,000 gallons of gasoline during the reporting period.

The following steps illustrate how to report VOC and Toxics emissions from underground storage tanks with attached gasoline dispensing equipment.

First, go to the Emission Sources (ES) page and select "Profile" next to the device you would like to report.

Facility ID: 999014	Build	l Repo	rtin	g Sti	ructi	ure								
Abbreviated Reporting 1. Facility Information	Emissi	on Sour	ces (ES) Cl	assifi	cation								
 Status Update Combustion Fuels Emission Sources (ES) Report Process/Emissions Additional Toxic Substances Production and Usage Perform Data Validation 	 Summary: This section contains facility permit profile. Please make sure that every device has a specified Emission Source (ES). New emission sources can also be added. Instruction: Add Devices (emissions sources) by clicking "Add New Emission Source". Edit devices by clicking "Profile" under the Emission Source (ES) Column. Add emission data by clicking "Open" under the Emissions column. Upload storage tank data by clicking on link "Click here" below. 									be t ge				
9. Print Facility Report 10. Report Submission	Abbr Starting Your eli Facility. Click <u>he</u>	in Report gibility to	ed R ting Y o file	ear 202 Abbrev	22 some viated etails a	e facilities can q Report depends about Abbreviate	ualify f s in par ed Repo	for Abbrev t on the orting and	viated types its po	Reportir of Emiss ssible be	ng sion Sour enefits.	ces used	at yo	ur
	Storag	e Tank Er	nissio	ns Bato	h File	Import - Click he	ere for	more inst	ructio	ns.				
	Add	New Emi	ssion	Source	9									
	Displa A/N AER D	aying 1 e Device ID	missi	on sou	rces.		Permit Permit	t NO t Device I	D					
	Sear	ch Emissi	on So	urces										
								Search:				P	rint Pre	eview
	Emission Source (ES)	Emissions	A/N	Permit NO	Permit Device ID	Permit Equipment Description	AER Device ID	ES Name	ES Group Name	Source Category	Has Emissions	Equipment	PERP	ES Status
· · · · · · · · · · · · · · · · · · ·		0	10045	540045			504	Fueling		Storage	V	Storage		Work in

12345 F12345

Showing 1 to 1 of 1 entries

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Previous Next

tank and Dispensing

Storage Tanks

ES1

Equipment

Complete all required fields (i.e., fields marked with a red asterisk "*") on the Edit Emission Source page, being careful to select the appropriate Tank Type from the drop-down list. Once completed with data entry, click any of the orange buttons to continue.

Facility ID: 999014	Edit Emission Source	
Abbreviated Reporting 1. Facility Information 2. Status Update 3. Combustion Fuels 4. Emission Sources (ES) 5. Report Process/Emissions 6. Additional Taxic	Instruction: Add new en specificatio best reflect Red Asterisl populated,	nissions sources using information found on permits, manufacturers ns, or identifying placards. Select the Operating ES Status that the device's operation for this reporting period. All areas with a (*) must be addressed. Note: Some devices have been pre- verify that the information is correct
Substances Production and Usage 7. Perform Data Validation 8. Review Summaries 9. Print Facility Report 10. Report Submission	Abbreviated Report Starting in Reporting Year 2022 Your eligibility to file Abbrevia Facility. Click here to find out more det	ing some facilities can qualify for Abbreviated Reporting ated Report depends in part on the types of Emission Sources used at your ails about Abbreviated Reporting and its possible benefits.
	Permitted	
	A/N	12345
	PERP Equipment(CARB's Portable Equipment Registration Program)	Only CARB GHG MRR and Over 250 tons/yr (PTE) facilities must report PERP Emissions are not included when calculating emission fees
	Permit No	F12345
	Permit Device ID	
	Permit Equipment Description	
	AER Device ID	ES1
	ES Name	Fueling Equipment *
	Operating ES Status Comment	Normal Operation
	Emission Source Category	Storage Tanks Categorize Emission Source
	Equipment	Storage tank and Dispensing
	Tank Type	Underground Tank v*
	Design Capacity	0.000000 ~
	Save or Save and retu	rn to List of Emission Sources or ss Reporting or <u>Cancel</u>
	Optional: Save and Mark as	Completed Click here to delete this emission source and associated data.

To enter data for the fuel dispensing equipment, select the device from the Emission Sources page by clicking on the "Open" link in the emission source table. Then, click on the "Open" button on the Process References pop-up window.

cility I	D. 9990	114									
citity i	D. 9990	514	Form data i	s success	fully saved.						
acility In tatus Up	formation	5	Build Rep	orting	Structu	re					
ombustic	on Fuels	_	Emission Sou	rces (ES) Classifica	ation					
mission S leport Pro dditional stances P ge	Sources (E ocess/Emi l Toxic Production	S) ssions a and	Summary:	This se device added	ection cont has a spec	ains facilit cified Emis	y permit sion Sour	profile. Ple ce (ES). Ne	ease make su w emission s	re that eve ources can	ery also b
erform D)ata Valida Immaries	tion	Instruction	: Add Do device	evices (emi es by clickir	issions sou ng "Profile"	rces) by c under th	licking "Ad Emission	d New Emissi Source (ES) (ion Source" Column. Ac	. Edit
Proce	ess Refer	rences	_		,	3			()		×
A/N	Permit No	Permit Device ID	Permit Device Description	AER Device ID	ES Name	ES Group Name	Source Category	Emissions?	Equipment	PERP	ES Status
Open	10045	510045				Fueling		Storage		Storage	
Open	12345	F12345			ES1	Equipment		Tanks	Ŷ	Dispensing	N
Open	12345 P	Process ID	Source (Group	ES1 Proce	Equipment	/Fuel Nam	Tanks	Y	Operation	Туре
	12345	Process ID P1	Source (Storage	Group Tanks	Proce	Equipment	/Fuel Nam	ranks e Wo	Y Status rk in progress	Operation routine	N Type e
Add	d Process	rizsa Process ID P1 s/Materi	Source (Storage al/Fuel A/N AER Device II	Group Tanks	Proce	Equipment	/Fuel Nam Permit I Permit I	e Wo NO Device ID	Y Status rk in progress	Operation routin	Type e
Add	d Process	rocess ID P1	Source C Storage al/Fuel A/N AER Device II Search Emiss	Group Tanks	Proce	Equipment ess/Material	/Fuel Nam Permit I Permit I	e Wo	Y Status rk in progress	Operation routin	Type e
Add	d Process	riccess ID P1	Source C Storage al/Fuel A/N AER Device II Search Emis:	Group Tanks	Proce	Equipment	/Fuel Nam Permit I Permit I	e Wo NO Device ID earch:	Y Status rk in progress	Operation routin	N Type e
Add	d Process	rocess ID P1	Source C Storage al/Fuel A/N AER Device II Search Emission Source (ES) Emission	D D Sroup Tanks D D Sion Source	ermit Permit P ID Device P ID	ermit Equipment	/Fuel Nam Permit I Permit I So So So So So	e Wo NO Device ID earch: ES ES Name Group Name	Y Status rk in progress	Operation routin	N Type e DK
Add	d Process	riccess ID P1	Source C Storage ' al/Fuel (A/N AER Device II Search Emission Source Emission (ES) Profile Open	Group Tanks	rmit Permit Porte	ermit Equipme Description	/Fuel Nam	e Wo NO Device ID earch: ES ES Name ES Group Name	Y Status rk in progress Source Haa Category Emissi Storage Tanks Y	Constant and Dispensing Operation routin	N Type e DK V rint Prev

Enter process information for the device by clicking on the "Open" link under "Step 1: Process" on the Report Process/Emissions page. Select the appropriate Product type and Rule # (Required information) from the drop-down lists and then click the "Save" button.

Facility ID: 999014										
Abbreviated Reporting	Storage T	ānks								
 Facility Information Status Update 	Edit Emis	sion Process	- Stor	age Tanks	3				×	e liquid
3. Combustion Fuels 4. Emission Sources (ES)	AER Device ID	Permit Device ID	A/N	Process ID	Equipm	ent	Tank Type	Product	Rule #	ces
5. Report Process/Emissions	ES1		12345	P1	Storage tar Dispens	nk and ing				tank
Combustion External Combustion Internal Combustion	AER Device	ID ES1 AN: 12	345	AER Device M Permit Devic	Name e ID	Fueling	Equipme	nt		hust be hould
Use of organics	Process ID	P1		Process Nam	e					e tank
Spray Coating/Spray Booth Other Use of Organics	Tank Type Process Co	mment		Imported fro	m EPA TANKS	No	_			elp
Storage Tanks	Product	Gasoli	ne (RV	P 7) - Defa	ult	-	*			
Fugitive Components	Rule #	461		▼ * Add F	Rule					
Other Processes Process Upset	Equipment	Code Storage	tank a	nd Dispens	ing			~	ł	porting.
6. Additional Toxic Substances Production and Usage							Save	Canc	el	
7. Perform Data Validation	Stop 1: Proc	220					On	ional: Mar	k as C	ompleted
8. Review Summaries	Step 1. Plot	.055					Οp	ional. mai	n as c	ompieteu
9. Print Facility Report	AER De	vice ID Permit I)evice II	A/N Pro	ocess ID	Equipm	ent	Tank Ty	pe Pro	duct Rule #
10. Report Submission	Open S1			12345	P1 Stora	ge tank and	d Dispensin	3		
							Click	here to <u>de</u>	lete th	is process.
	Step 2: Thro	oughput								

Enter fuel throughput information by clicking on the "Open" link under "Step 2: Throughput". Enter the amount of gasoline dispensed from the equipment, select the appropriate units of measure (Note: Mgal = 1,000 gallons), and select throughput type ("Input" is the default). Click "Save" to close the window.

Other Use of Organics	Abbr	ovisted P	porti	pd				
Storage Tanks	Edit Thro	ughput Infor	mation	- Storage	Tanks			×
Fugitive Components Other Processes	AER Device ID	Permit Device ID	A/N	Process ID	Equipment	Tank Type	Produc	t Rule #
Process Upset	ES1		12345	P1	Storage tank and	Underground Tank	Gasoline (RVP	7) - 461
Additional Toxic ostances Production and				A	nnual Throughput 25.00000000 M gal	IUIK	Delduit	
Perform Data Validation	Annual Thr	oughput	2	<u>5.000000</u> 0	ه ٥	• M gal 🗸 *		
Review Summaries	Throughpu	t Type	I	nput 🗸 🕴				
Print Facility Report	Throughpu	t Comment						
. Report Submission								
							Save	Cancel
	Stop 2:	Thursdamut						
	SLED Z.	Inroughput						
	step z.	Inrougnput						
	Step 2.	Inrougnput			Annual Throug	hput		
	Open	Inrougnput			Annual Throug 25.00000000 N	hput I gal		
	Open Step 3:	Criteria Emis	sions (l	bs)	Annual Throug 25.0000000 N	hput I gal Use <u>Default</u>	Emission Factors	if available.
	Step 2: Open Step 3:	Criteria Emis	sions (l	bs) Unit	Annual Throug 25.00000000 M Controlled EF	hput I gal Use <u>Default</u> EF Data Source	Emission Factors Overall CE	if available. Emissions

At this point, users submitting an Abbreviated Report should return to the Emission Sources (ES) page and following the steps above. Users submitting an Abbreviated Report should use not change default emission factors or add additional pollutants as detailed below. Doing so will disqualify the user from submitting an Abbreviated Report.

For users that are NOT CTR Abbreviated Reporters, should use the best available site-specific information. For example, the Safety Data Sheets (SDS) for the gasoline used at the site indicate the presence of benzene, ethylbenzene and naphthalene in varying percentages. Since, the SDS states that the gasoline contains naphthalene, the user must enter a new toxic compound by clicking on the "Add New" button under "Step 4: Toxic (TAC/ODC) Emissions". Select the appropriate TAC, enter the emission factor, and select the Emission Factor Data Source (SCAQMD Guidelines for this example).

Report Process/Emissions	Open Tox	IC (TAC/OD	C) Emi	ssion intoi	mation -	storage la	IIKS		
ombustion	AER Device ID	Permit Device ID	A/N	Process ID	Equip	ment	Tank Type	Produc	t R
Internal Compustion	ES1		12345	P1	Storage t	ank and U	nderground	Gasoline (RVI	7)-
of organics					Annual Thro	ughput			
ay Coating/Spray					25.0000000	∪ m gai			
n Vr. Uso of Organics	TAC/ODC T	oxic Pollutants /	Ozone D	enleting Comp	ounds				
Tanks	Pollutant		19 -	PAHS [PAH	POM				~ *
Components			9120	03 - Naphth	alene [PAH	I, POMJ			~
ocesses	TAC Group		19 -	PAHs [PAH,	POM]				
Upset	CAS # (Pol	lutant)	9120	3 - Naphtha	alene [PAH	, POM]			
nal Toxic	STORAGE 1	ANK LOSS							
s Production and	Total Loss B	ĒF	0.00	042		lbs/M gal			
m Data Validation			C C	ontrolled EF	value				
w Summaries			(n	nark checkbox	if EF listed re	epresents EF de	etermined after c	ontrol)	
Facility Report	Overall Cor	ntrol Efficiency							
ort Submission	Emission Fa	actor Comment							
									11
			1.1						
			If not	t using AQP	1D defaul	t emission fa	actor please p	orovide deta	ailed
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			If not refer with Proce	ences in the the informa esses withou	1D defaul Emission tion. It this info	t emission fa Factor Comi rmation are	actor please p ment box abo subject to au	provide deta ve or uploa dit.	ailed d file
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	Emission Fa	actor Data Sourc	If not refer with Proce SCA	ences in the the informa esses withou QMD Guidel	1D default Emission tion. It this info ines bs	t emission fa Factor Comr rmation are	actor please p ment box abo subject to au	provide deta ve or uploa dit.	ailed d file
	Emission Fa Emissions	actor Data Sourc	If not reference With Proce SCA 1.050	ences in the the informa esses withou QMD Guidel	1D defaul E Emission tion. It this info ines bs	t emission fa Factor Comr rmation are	actor please p ment box abo subject to au	orovide deta ve or uploa dit.	iled d file
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	Emission Fa Emissions Step 4: 7	actor Data Sourc	If not reference with Proce SCA 1.050	ences in the ences in the esses withou QMD Guidel 000000e-2 l	1D defaul Emission tion. ut this info ines bs s)	t emission fa Factor Comr rmation are	actor please p ment box abo subject to au	rovide deta ve or uploa dit. Save	iled d file v *
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	Emission Fa Emissions Step 4: 1	actor Data Source	If not refer with Proce SCA 1.050 DDC) Em CAS #	August 2000 August 2000 Augus	1D defauli Emission tion. It this info ines bs bs s) Unit lbs / M gal	t emission fr Factor Com rmation are Controlled EF No	EF Data Source AQMD default	rovide deta ve or uploa dit. Save	iiled d file * * Cancel Emission 9.97500000

Data entry for this device is now complete. You may edit any of the entered data by selecting "Open" next to the device on the Emission Sources (ES) page and following the steps above.