

**ENGINEERING EVALUATION
AUTHORITY TO CONSTRUCT**

Facility Name: Gas Net Inc.

Application Number: APCD2024-APP-008448

Equipment Type: Modified Gas Station – 26A

Facility ID: APCD1983-SITE-02630

Equipment Address: 6085 Lake Murray Blvd.
La Mesa, CA 91942

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Permit Engineer: Liliana Jaime

Senior Engineer: Allison Weller

1.0 BACKGROUND

1.1 Type of Application – Gas Net Inc. is applying to modify an existing gas station to replace all underground storage tanks and increase the tank size of one of their tanks changing from three 10,000 gallon tanks to one 30,000 gallon tank and one 10,000 gallon tank.

Installation, operation and maintenance conditions will be incorporated into the ATC and PTO to ensure compliance with all requirements, regulations and standards in the applicable CARB Executive Order, relevant Installation, Operation and Maintenance Manual (IOMs) and District Rules and Regulations.

1.2 Permit History – Existing gas station.

1.3 Facility Description – This is a retail gasoline dispensing facility.

Records	Status	Description
APCD1983-SITE-02630	-	-

APCD1994-APP-940402	Approved	Initial Application for Gas Station
APCD2008-PTO-020845	Active	Current and active PTO.
APCD2024-APP-008448	In Review	Modification of Gas Station

1.4 Other Background Information – This is not a Title V facility.

2.0 PROCESS DESCRIPTION

2.1 Equipment Description –

Existing Equipment:

Gasoline Dispensing Facility (Retail) (BACT): Eight (8) nozzles, as listed in Exhibit 1 of the Phase II Executive Order (E.O.) specified below, with three (3) grades per nozzle;
Phase II VRS: Healy Vacuum Assist per ARB E.O. VR-202-W;
ISD System: Veeder-Root Software;
CAS Configuration: Vertical Position per Exhibit 2 of ARB E.O. VR-202-W;
Phase I VRS: Two Point OPW per ARB E.O. VR-102-E;
Tanks: Three (3) 10,000 gallon, gasoline, underground {manifolded underground and aboveground}

Update Equipment:

Gasoline Dispensing Facility (Retail) (BACT): Eight (8) nozzles, as listed in Exhibit 1 of the Phase II Executive Order (E.O.) specified below, with three (3) grades per nozzle;
Phase II VRS: Healy Vacuum Assist per ARB E.O. VR-202;
ISD System: Compliant Veeder-Root Software Version;
CAS Configuration: Vertical Position per Exhibit 2 of ARB E.O. VR-202;
Phase I VRS: Two Point OPW per ARB E.O. VR-102;
Tanks: One (1) 30,000 gallon gasoline and One (1) 10,000 gallon gasoline, underground {manifolded underground and aboveground}

2.2 Process – This is a facility equipped with a gasoline tank and the associated equipment to receive, store and dispense gasoline.

2.3 Emissions Controls – This facility is equipped with Phase I and Phase II controls.

2.4 Attachments – Refer to applicable Executive Order and/or Installation, Operation and Maintenance Manual for supporting information.

3.0 EMISSIONS

3.1 Emission Estimate Summary –

Table 1: Emissions Estimate Increase (Post - Pre Project)

Annual VOC Emissions	43.8	lbs/year
Annual VOC Emissions (in tons)	0.02	tons/year
Daily VOC Emissions	0.12	lbs/day
Average Hourly Emissions	0.01	lbs/hour
MAX Hourly Emissions	1.51	lbs/hour (MAX)

Note: MAX Hourly Emissions are based on the assumption that the worst case scenario for one (1) hour is dispensing gas while the tank is being loaded with gas from a delivery (to full max tank capacity). However, the actual max hourly emissions are expected to be lower. Facilities are not allowed to fill tanks past 90% and most full deliveries are not filling an empty tank (fuel deliveries are typically ordered in advance before tanks run “dry”). Average volume of bulk tank delivery also varies.

Average Hourly Emissions are based on the projected annual gasoline throughput (gallons per year) over a time period of 365 days per year and 24 hours per day.

3.2 Emission Estimate Assumptions –

Calculation Procedure: The equations based on maximum throughput proposed by the facility.

The SDCAPCD Emission Calculation Procedures were used to calculate the annual VOC emissions (located at https://www.sdapcd.org/content/dam/sdc/apcd/PDF/Misc/EFT/Gasoline_Dispensing_Facilities/APCD_Submerged_Fill_of_Underground_Tank_with_Phase_I_Controls_Only.pdf).

Equations:

$$E_a = U_a \times EF_t \times C_i$$

$$E_h = T \times EF_l \times C_i$$

Variables:

E_a	Annual emissions of gasoline vapor (lbs/year)
E_h	Maximum hourly emissions of gasoline vapor (lbs/hour)
U_a	Annual gasoline throughput (gallons/year)
T	Maximum one-hour bulk gasoline delivery
EF_t	Emission factor (combined) for throughput (lbs/gallon)
EF_l	Emission factor for underground tank loading (lbs/gallon)
C_i	Concentration of each listed substance in the gasoline vapor (lbs/lb)

Emission Factors:

The above SDAPCD methodology requires the input of emission factors from CARB’s Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities dated December 23, 2013 were used (<https://ww3.arb.ca.gov/vapor/gdf-emisfactor/gdfumbrella.pdf>), which are shown in the following table:

Table 2: Emission Factors:

Sub Category	Revised (lbs/1000 gal)
	EVR
Phase II Fueling	0.10878
Phase I Bulk Transfer Losses	0.15
Pressure Driven Losses	0.024
Phase II Fueling – Spillage	0.24
Gasoline Dispensing Hose Permeation	0.009
Year 2017	
Total	0.53178

The Phase II Fueling emission factor for Non-ORVR and ORVR vehicles was calculated based on a weighted average per the “Engineering Manager Assigned Task – GDF Risk Assessment Report (Dated: 7/22/2014).” The document assumed ARB’s 2015 ORVR saturation rate of 0.78 for the state. The weighted average calculation is as follows:

$$\begin{aligned}
 & (\text{Percent NonORVR} \times \text{NonORVR EVR Emission Factor}) \\
 & + (\text{Percent ORVR} \times \text{ORVR EVR Emission Factor}) \\
 & = \text{Phase II Fueling Emission Factor}
 \end{aligned}$$

$$\begin{aligned}
 & \left((1 - 0.78) \times 0.42 \frac{\text{lbs}}{1000 \text{ gallons}} \right) + \left(0.78 \times 0.021 \frac{\text{lbs}}{1000 \text{ gallons}} \right) \\
 & = 0.10878 \frac{\text{lbs}}{1000 \text{ gallon}}
 \end{aligned}$$

3.3 Emission Calculations –

Emissions Post Construction:

Variable	Value	Units	Description
U_A	1,800,000	gallons/year	Annual Gasoline Throughput
EF_T	0.53178	lbs/1000 gallons	Total Emission Factor
C_i	1	lbs/lb	Concentration of VOCs in gasoline vapor
E_A	1089.20	lbs/year	Annual VOC Emissions: $U_A * EF_T * C_i$

E_A	0.5446	tons/year	Annual VOC Emission: $E_A * (1 \text{ ton}/2000 \text{ lbs})$
E_D	2.984	lbs/day	Daily VOC Emissions: $E_A * (1 \text{ year}/365 \text{ days})$
$E_{H\text{average}}$	0.1243	lbs/hour	Average Hourly VOC Emissions: $E_D * (1 \text{ day}/24 \text{ hours})$
$E_{H\text{max}}$	6.094*	lbs/hour	MAX Hourly VOC Emissions: (Tank capacity* $E_{FI} * C_i$) + (E_A – Average Phase I EVR/Loading Emissions)

3.4 Attachments – APP-008448_VR Emission Calculations

4.0 APPLICABLE RULES

4.1 Prohibitory Rules

Rule 61.3 – Transfer of Volatile Organic Compounds into Stationary Storage Tanks

The facility will be subject to Rule 61.3.1, which is more stringent than this rule. Compliance with 61.3.1 is expected as outlined below.

Rule 61.3.1 – Transfer of Gasoline into Stationary Underground Storage Tanks

Before issuance of the PTO, the engineering inspection will ensure the equipment is installed in compliance with this rule. Conditions will be included in the ATC and PTO to further ensure compliance.

The CARB certified Phase I EVR system that will be installed is the OPW system as listed in ARB E.O. VR-102.

The Authority to Construct (ATC) and Permit to Operate (PTO) will incorporate conditions pertaining to the allowable replacement parts and identification, installation, maintenance, repairs, operation, required testing and recordkeeping.

Rule 61.4 – Transfer of Volatile Organic Compounds into Vehicle Fuel Tanks

(5) VOC's from any stationary storage tank into a vehicle fuel tank at any non-retail service station where 95 percent of vehicles refueled are equipped with Onboard Refueling Vapor Recovery (ORVR) provided that the Phase II vapor recovery system, if previously installed, has been properly removed. Any person claiming this exemption shall maintain records of the make, model year, vehicle identification number and any other information indicating whether the vehicle is equipped with ORVR, for all vehicles refueled at such facility. These records shall be maintained on site for at least three years and be made available to the District upon request.

Compliance is expected. This is an existing gas station with Phase II EVR equipment installed.

Rule 61.4.1 – Transfer of Gasoline from stationary underground storage tanks into vehicle fuel tanks

(5) Transfer of gasoline from any stationary underground storage tank into a vehicle fuel tank at any non-retail gasoline dispensing facility where 95 percent of vehicles refueled are equipped with Onboard Refueling Vapor Recovery (ORVR) provided that the Phase II vapor recovery system, if previously installed, has been properly removed. Any person claiming this exemption shall maintain records of the make, model year, vehicle identification number and any other information indicating whether the vehicle is equipped with ORVR, for all vehicles refueled at such facility. These records shall be maintained on site for at least three years and be made available to the District upon request.

Compliance is expected. This is an existing gas station with Phase II EVR equipment installed.

Rule 61.5 – Visible Emissions Standards for Vapor Control Systems

No person shall discharge, or allow to be discharged, into the atmosphere from any vapor control system used to meet the requirements of Rules 61.1, 61.2, 61.3, 61.4 or 61.7, air contaminants in such a manner that the opacity of the emission is:

- (1) Greater than 10% for a period or periods aggregating more than one (1) minute in any 60 consecutive minutes; or*
- (2) Greater than 40% at any time.*

Compliance is expected given the nature of the process.

Rule 61.6 – NSPS Requirements for Storage of Volatile Organic Compounds

Any person owning or operating any source subject to the provisions of any federal New Source Performance Standard (NSPS), the enforcement of which has been delegated to the San Diego County Air Pollution Control District must, in addition to complying with Rules 61.1 through 61.5 and 61.7 and 61.8, comply with Regulation X.

This source is not subject to NSPS requirements.

Rule 61.7 – Spillage and Leakage of Volatile Organic Compounds

This rule is applicable to the spillage and fugitive liquid leaks associated with the transfer and storage of volatile organic compounds.

(1) Except as provided for in Section (b) above, no person shall:

- (i) Spill, allow the spillage or cause spillage of such compounds during the disconnection of fittings used for transfer, except for spillage which would normally occur with equipment handled in a manner designed to minimize spillage.*
- (ii) Use or allow equipment to be used to transfer fuel unless the equipment is free of defects and properly maintained in a manner designed to minimize spillage, and*
- (iii) No person shall allow fugitive liquid leaks along the liquid transfer path, including any storage tank.*

The facility is expected to comply. Conditions will be added to the permit to limit spillage and fugitive liquid leaks. Compliance with Rule 61.7 will be verified during inspections, and performance tests will be required on an annual basis in order to verify the vapor recovery systems comply with Rule 61.7.

Rule 61.8 – Certification Requirements for Vapor Control Equipment

This rule is applicable to all vapor recovery systems installed after July 1, 1976, which are subject to the certification requirements of Division 26, Part 4, Chapter 3, Article 5, of the State of California Health and Safety Code.

(c) STANDARDS

No person shall install, provide, sell or sell for use within the County of San Diego a gasoline vapor control system or system component subject to the certification requirements of Division 26, Part 4, Chapter 3, Article 5, of the State of California Health and Safety Code unless it has been certified by the California Air Resources Board.

Complies, Phase I vapor recovery system certified per CARB Executive Order VR-102 series and Phase II vapor recovery system certified per CARB Executive Order VR-202 series is proposed.

4.2 New Source Review (NSR)

Rule 20.1 New Source Review – General Provisions

This rule is applicable to any new or modified stationary source or emission unit if the stationary source is not a major stationary source. A federal major stationary source, as defined in Rule 20.1(c)(30), means “any emission unit, project or stationary source which has, or will have after issuance of an Authority to Construct or modified Permit to Operate, an aggregate potential to emit one or more air contaminants in amounts equal to or greater than any of the emission rates listed below in Table 20.1 –5b”.

**TABLE 20.1 – 5b
Federal Major Stationary Source**

<u>Air Contaminant</u>	<u>Emission Rate (Ton/yr)</u>
Fine Particulate Matter (PM _{2.5})	100
Particulate Matter (PM ₁₀)	100
Oxides of Nitrogen (NOx)*	
marginal or moderate	100
serious	50
severe	25
extreme	10
Volatile Organic Compounds (VOC)*	
marginal or moderate	100
serious	50
severe	25
extreme	10
Oxides of Sulfur (SOx)	100
Carbon Monoxide (CO)	100
Lead (Pb)	100

* based on EPA’s ozone nonattainment designation for the San Diego Air Basin in 40 CFR 81.305

District Rule 20.1 outlines the terms and definitions for New Source Review.

NSR is applicable since the facility is adding an emission unit (GDF). The proposed aggregate VOC potential to emit (PTE) is less than 25 tons per year, therefore the source is not a major stationary source as given in Table 20.1-6 and is subject to the non-major source requirements of Rule 20.2.

Rule 20.2 – Non-Major Stationary Sources

(d)(1)(i) BACT for New or Modified Emission Units

Any new or modified emission unit which has any increase in its potential to emit particulate matter (PM10), oxides of nitrogen (NOx), volatile organic compounds (VOC) or oxides of sulfur (SOx) and which unit has a post-project potential to emit of 10 pounds per day or more of PM10, NOx, VOC, or SOx shall be equipped with Best Available Control Technology (BACT) for each such air contaminant.

The potential to emit for this pollutant from this equipment can exceed this trigger level, so BACT is required. The facility will be installing CARB certified Phase I and Phase II EVR systems with compatible ISD software, which is considered BACT.

(d)(2)(i) AQIA for New or Modified Emission Units

For each project which results in an emissions increase equal to or greater than any of the amounts listed in Table 20.2 - 1, the applicant shall demonstrate to the satisfaction of the Air Pollution Control Officer through an AQIA that the project will not:

- (A) cause a violation of a state or national ambient air quality standard anywhere that does not already exceed such standard, nor*
- (B) cause additional violations of a national ambient air quality standard anywhere the standard is already being exceeded, nor*
- (C) cause additional violations of a state ambient air quality standard anywhere the standard is already being exceeded, except as provided for in Subsection (d)(2)(v), nor*
- (D) prevent or interfere with the attainment or maintenance of any state or national ambient air quality standard.*

**TABLE 20.2 - 1
AQIA Trigger Levels**

<u>Air Contaminant</u>	<u>Emission Rate</u>		
	<u>(lb/hr)</u>	<u>(lb/day)</u>	<u>(tons/yr)</u>
Particulate Matter (PM ₁₀)	---	100	15
Fine Particulate Matter (PM _{2.5})	---	67	10
Oxides of Nitrogen (NOx)	25	250	40
Oxides of Sulfur (SOx)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6

The facility emissions are below the levels listed in Table 20.2-1, therefore an AQIA is not required.

This subsection and all subsequent provisions ((d)(3) and (d)(4)) of Rule 20.2 do not apply because emissions fall below the thresholds requiring an AQIA as summarized in

Table 20.2-1 and (d)(4) (VOC emissions increase of 250 pounds per day or 40 tons per year).

4.3 Toxic New Source Review- Rule 1200

Rule 1200 applies to any new, relocated or modified emission unit which results in any increase in emissions of one or more toxic air contaminant(s), and for which an Authority to Construct or Permit to Operate is required. This rule requires health risks be reviewed to ensure the risks are below one in one million for cancer (with T-BACT installed), and that the health hazard index is less than one from chronic non-cancer and acute toxic air contaminants.

This gasoline dispensing facility (GDF) is subject to Rule 1200.

Rule 1200 (b) EXEMPTIONS

(1) The standards of Section (d) shall not apply to:

(v) The following emission units provided the resulting increase in maximum incremental cancer risk at every receptor location is less than 100 in one million, the total acute noncancer health hazard index is less than 10 and the total chronic noncancer health hazard index is less than 10:

(B) Gasoline service station emission units, provided that T-BACT will be installed.

The GDF will be equipped with CARB certified Phase I and Phase II vapor recovery controls which is considered T-BACT.

Rule 1200 evaluation was performed with 1.8 million gallons of annual throughput for gasoline with max hourly throughputs calculated from Section 3. The closest worker receptors are 20 meters away, and the closest resident receptors are 90 meters away. Distances were measured from the closest dispenser.

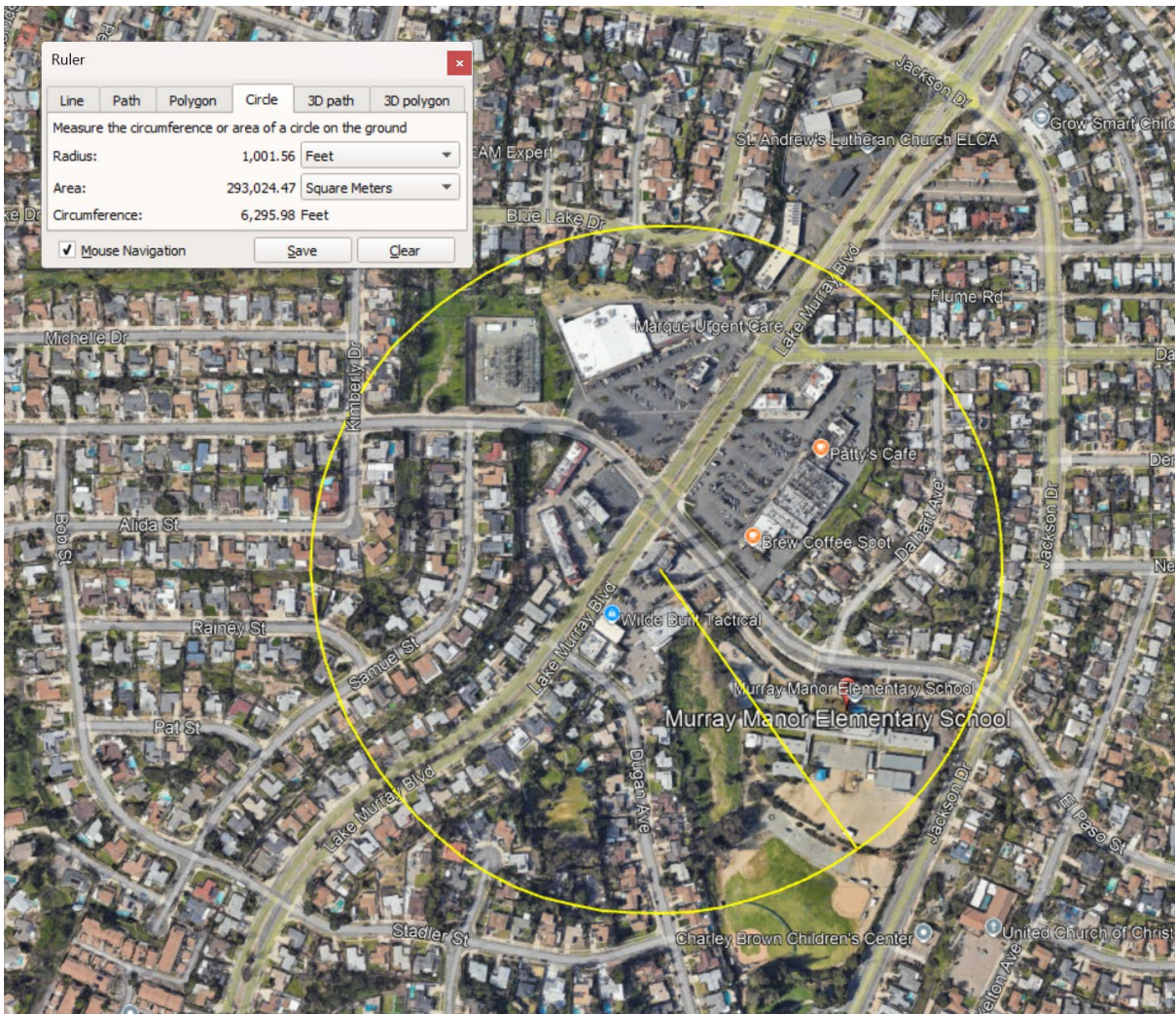
The GDF under consideration is equipped with T-BACT and the evaluated de minimis health indices and cancer risk for this operation were within the standards of Rule 1200.

Therefore, the GDF is exempt from the Standards in Rule 1200 §(d) as allowed by the aforementioned subsection (b)(1)(v)(B).

4.4 AB3205

AB3205 requires a public notice prior to issuing an Authority to Construct for equipment emitting hazardous air contaminants at a facility within 1000 feet of a school. The law also requires the District to consider any comments before authorizing construction.

There is one Elementary School located within 1000 ft of the equipment: Murray Manor Elementary School. A notice will be sent to the School.



4.5 NESHAPS, NSPS and ATCMs

NESHAP:

CFR Part 63, Subpart CCCCC, NESHAP for Area Source Categories: Gasoline Dispensing Facilities

This NESHAP is applicable to all gasoline dispensing facilities.

Date of Promulgation: January 1, 2008

All of the applicable requirements for this regulation are currently met by the EVR Phase I and Phase II equipment that will be installed at this location and operating practices required under the various CARB Executive Orders and SDAPCD District Rules 61.3.1 and 61.4.1 for gasoline dispensing facilities.

NSPS: None

ATCM:

Subchapter 7.5, Section 93101 Benzene Airborne Toxic Control Measure – Retail Service Stations

Complies, CARB Certified Phase I and Phase II EVR are going to be installed.

4.6 Title V – This is not a Title V facility.

4.7 Attachments – N/A.

5.0 RECOMMENDATION & CONDITIONS

It is expected that the gasoline dispensing facility will comply with all applicable requirements, and it is recommended that an Authority to Construct be issued at the end of the AB3205 comment period with standard conditions, including pre backfill requirements for a modified gas station, unless comments received would result in necessary changes to the project.

6.0 RECOMMENDED CONDITIONS

The recommended conditions are based off of condition set APCD2008-CON-000058 – Retail or Non-Retail Gas Stations with Vacuum Assist, CAS and VR ISD, including 3 additional conditions for pre-backfill:

Number	Description
31	In addition to the annual compliance tests referenced above, the applicant shall schedule an initial compliance test with the undersigned engineer, within 60 days of the Construction Completion. (Rule 61.3, 61.3.1, 61.4, 61.4.1)
32	Prior to the initial compliance test, the applicant shall schedule a pre-backfill inspection with the undersigned engineer. During this inspection, the engineer will verify the underground vapor recovery piping system is installed in accordance with the application and relevant Executive Orders. The tank sumps must be dry for this inspection. (Rule 61.4.1)
33	During this pre-backfill inspection proof of certification per attachment K, must be provided to the engineer. In addition, the engineer will verify that the electrical clamp points are electrically connected to an earth grounding (<1ohm resistance), at each Phase I and Phase II point. (61.3.1, 61.4.1)