

Permitting Application - Permit Detail and Log Permit										
POINT	AIR#	AIR# ID	STATUS	OFFICE	ARMs Facility	RW Br:	PAHAMA CITY			
SITE NAME	CHEVRON PANAMA CITY TERMINAL				COUNTY	BAY				
OWNER/COMPANY	CHEVRON U.S.A. INC.									
AIR Permit #	0050056	013	AC	Project #	013	CRA Reference #	303002			
Permit Office	RWD (DISTRICT)			Agency Action	Issued		OGC			
Project Name	CHEVRON PRODUCTS COMPANY		Desc	Chevron Panama City Terminal						
Type/Sub/Des	AC	1F	Source less than 5 tpy \$250			Logged	11/27/2007			
Received	11/27/2007		Issued	02/22/2008		Expires	02/22/2013		Application Action	
Fee	250.00		Fee Recd	250.00		Date			Override	NONE
Related Party										
Role	APPLICANT			Begin	11/27/2007		End			
Name	CHARLES, KEVIN				Company	CHEVRON PANAMA CITY TERMINAL				
Address	525 WEST BEACH DRIVE									
City	PANAMA CITY			State	FL	Zip	32401		Country	
Phone	850-785-7426		Fax							
Processors										
Processor	JACKSON_A			Active	03/06/2008		Inactive			Events

Permitting Application - Permit Detail and Log Permit									
<b>ARMS Facility</b>									
POINT	AIRS ID	0060056	STATUS	A	OFFICE	NWDP	IW Br:	PANAMA CITY	
SITE NAME		CHEVRON PANAMA CITY TERMINAL			COUNTY		BAY		
OWNER/COMPANY		CHEVRON U.S.A. INC.							
<b>Project</b>									
AIR Permit #			Project #	013	CRA Reference #	303002			
Permit Office	NWD (DISTRICT)				Agency Action	Pending			
Project Name	CHEVRON PRODUCTS COMPANY			Dest	Chevron Panama City Terminal				
Type/Sub/Des	AC	IF	Source less than 5 tpy \$250			Logged	11/27/2007		
Received	11/27/2007		Issued		Expires		OGC	<input type="checkbox"/>	
Fee	250.00		Fee Recd	250.00		Dele		Override	NONE
<b>Related Party</b>									
Role	APPLICANT			Begin	11/27/2007		End		
Name	CHARLES, KEVIN				Company	CHEVRON PANAMA CITY TERMINAL			
Address	525 WEST BEACH DRIVE								
City	PANAMA CITY			State	FL	Zip	32401	Country	
Phone	850-785-7426		Fax						
<b>Processors</b>									
Processor	GORDON_MJ			Y	Active	11/27/2007		Inactive	
<a href="#">Events</a>									



Global Marketing



**Kevin M. Charles**  
Terminal Manager

**Chevron Products  
Company**  
Panama City Terminal  
525 West Beach Drive  
Panama City, FL 32401  
Tel 850-785-7426 x 29  
Fax 850-784-1566  
kmcharles@chevron.com

November 21, 2007

Ms. Sandra F. Veazey  
Air Program Administrator  
Florida Department of Environmental Protection  
160 Government Center  
Pensacola, Florida 32502

**Subject: Non-Title V Air Construction Permit Application for the Chevron Panama City Terminal (Permit No. 0050056-012-AF) for Ethanol Storage**

Dear Ms. Veazey,

Attached are four (4) copies of the Non-Title V Air Construction Permit Application for the storage of Ethanol at the Chevron Panama City, Florida Terminal and a check for the \$250.00 air permit fee.

We appreciate your assistance in the Chevron Panama City Terminal Air Permit Application process. If you have any questions please contact me at (850) 785-7426 Ext 29.

Sincerely,

Kevin M. Charles  
Chevron Panama City  
Terminal Manager

**Application for an Air Construction Permit  
for a Synthetic Non-Title V Source**

**Chevron  
Panama City Terminal  
Air Permit 0050056-012-AF**

Prepared for:  
Chevron  
Panama City Terminal  
525 West Beach Drive  
Panama City, Florida 32401

Prepared by:  
URS Corporation  
400 Northpark Town Center  
1000 Abernathy Road, N.E., Suite 900  
Atlanta, Georgia 30328

November 2007

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## 1.0 Introduction

Chevron Panama City Terminal operates a bulk petroleum products distribution terminal in Panama City, Bay County, Florida. The facility receives a variety of refined bulk petroleum products by barge, stores those products in a variety of fixed and floating roof storage tanks, and distributes these products by tank truck (Standard Industrial Classification [SIC] Code 5171). Due to market pressures, the Chevron Panama City Terminal is proposing to develop the blending of ethanol with gasoline at its Terminal located on 525 West Beach Drive in Panama City. The Terminal is proposing the following changes:

- Change the service of Tank No. 63 from jet fuel service to ethanol service.
- Modify Tank No. 63 by installing an internal floating roof (IFR). This modification will make Tank No. 63 subject to NSPS 40 CFR Subpart Kb requirements. Tank No. 63 will have safe fill volume of approximately 156,463 gallons.
- Add associated piping, valves, and pumps for blending ethanol with gasoline.

The ethanol will be offloaded into Tank No. 63 for storage and then sent back to the loading rack for blending with gasoline and final distribution onto tank trucks. This facility does not distribute petroleum products or ethanol via marine vessel.

Chevron is requesting that ethanol be included in the permitted combined maximum throughput of 325,760,000-gallons in any 12 consecutive months for gasoline and aviation gasoline. Chevron does not plan to increase the throughputs or maximum allowable VOC emissions through this modification.

This application constitutes Chevron's request to obtain an air construction permit for the following:

- **Item 1 Converting Tank No. 63, from jet fuel service to ethanol service, and modifying Tank No. 63 by adding an internal floating roof. Tank No. 63 will have safe fill volume of approximately 156,463 gallons.**

The Chevron facility is currently operating under State of Florida Department of Environmental Protection (FDEP) Permit No. 0050056-012-AF. The current operating permit is a Federally Enforceable State Operating Permit (FESOP) to operate the facility under enforceable limitations which prevent the facility from being a major source under the Title V Operating Permit program. Emissions from the post-construction facility are estimated to be the same as prior emissions. Chevron does not plan to increase emissions with this construction; therefore, the

Panama City terminal will remain a Synthetic Minor source. This application fulfills the requirements of DEP Rules 62-4.210 F.A.C. and 62-210.300 F.A.C.

### **Item 1**

Chevron is requesting to modify Tank No. 63, from jet fuel service to ethanol service and by adding an internal floating roof. Tank No. 63 will have safe fill volume of approximately 156,463 gallons. There will be no increase in the permitted throughputs or maximum allowable VOC emissions through this modification.

### **Emission Estimates**

Emission estimates for regulated air pollutants were calculated and compared to the current permitted emissions. These estimates provide the basis for the regulatory conclusions documented in this permit application. The emission estimates presented in this permit application and calculated by EPA TANKS v4.09d are included in Appendix E.

Based on these emissions calculations the Chevron Panama City Terminal, supports the conclusion that the proposed permit modification will not result in an increase of facility-wide actual emissions above the current permit's thresholds. See Table 1-1 and Appendix E for the emissions summary and calculations.

**Table 1-1. Emission Estimates**

Pollutant	Emissions from Tank No. 63 in Jet Fuel Service*	Emissions from Tank No. 63 in Ethanol Service**	Currently Permitted Emissions	Proposed Permitted Emissions
Total VOC Emissions	0.202 tpy	0.640 tpy	88.3 tpy	88.3 tpy
Total HAP Emissions	0.237 tpy	0.000714 tpy	25	25

\*The comparison between jet fuel and ethanol were based on the same throughput of each product through Tank No. 63.

\*\*Note that ethanol throughput is displacing approximately 10% gasoline throughput, as the ethanol will be blended with gasoline and therefore a net decrease in VOC and HAP emissions will be occurring with the decrease in gasoline throughput.

## 2.0 Regulatory Review

This section documents a regulatory review conducted in support of this permit application.

### Florida Regulatory Requirements

The following is a list of applicable Florida Regulations:

- 62-4.050 F.A.C. Procedure to Obtain Permits and Other Authorizations Application
- 62-210 F.A.C. Stationary Sources - General Requirements
- 62-210.300 F.A.C. Permits Required
- 62-212.300 F.A.C. and Application for FESOP.
- 62-296.320 F.A.C. General Pollutant Emission Limiting Standards
- 62-297.310 F.A.C. General Test Requirements
- 62-297.330 F.A.C. Applicable Test Requirements
- 62-297.340 F.A.C. Frequency of Compliance Tests
- 62-297.570 F.A.C. Test Reports
- 40 CFR 60, Subpart A, General Provisions
- 40 CFR 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels

## **Appendix A**

### **Permit Application Forms**

# APPLICATION FOR AIR PERMIT - NON-TITLE V SOURCE

See Instructions for Form No. 62-210.900(3)

## I. APPLICATION INFORMATION

### Identification of Facility

1. Facility Owner/Company Name: <b>Chevron Products Company</b>	
2. Site Name: <b>Chevron Panama City Terminal</b>	
3. Facility Identification Number: <b>0050056</b> [ ] Unknown	
4. Facility Location: <b>Chevron Panama City Terminal</b> Street Address or Other Locator: <b>525 West Beach Drive</b> City: <b>Panama City</b> County: <b>Bay</b> Zip Code: <b>32401</b>	
5. Relocatable Facility? [ ] Yes [X] No	6. Existing Permitted Facility? [X] Yes [ ] No

### Application Contact

1. Name and Title of Application Contact: <b>Lou Milkint – Health, Environmental, and Safety Specialist</b>	
2. Application Contact Mailing Address: Organization/Firm: <b>Chevron Products Company</b> Street Address: <b>5500 West Commerce Street</b> City: <b>Tampa</b> State: <b>Florida</b> Zip Code: <b>33616</b>	
3. Application Contact Telephone Numbers: Telephone: <b>(813) 973-7691</b> Fax: <b>(813) 973-7607</b>	

### Application Processing Information (DEP Use)

1. Date of Receipt of Application:	
2. Permit Number:	

**Purpose of Application**

**Air Operation Permit Application**

This Application for Air Permit is submitted to obtain: (Check one)

- Initial non-Title V air operation permit for one or more existing, but previously unpermitted, emissions units.
- Initial non-Title V air operation permit for one or more newly constructed or modified emissions units.

Current construction permit number: \_\_\_\_\_

- Non-Title V air operation permit revision to address one or more newly constructed or modified emissions units.

Current construction permit number: \_\_\_\_\_

Operation permit number to be revised: \_\_\_\_\_

- Initial non-Title V air operation permit under Rule 62-210.300(2)(b), F.A.C., for an existing facility seeking classification as a synthetic non-Title V source.

Current operation/construction permit number(s):

\_\_\_\_\_

- Non-Title V air operation permit revision for a synthetic non-Title V source. Give reason for revision; e.g., to address one or more newly constructed or modified emissions units.

Operation permit number to be revised: \_\_\_\_\_

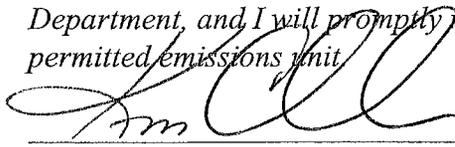
Reason for revision: \_\_\_\_\_

**Air Construction Permit Application**

This Application for Air Permit is submitted to obtain: (Check one)

- Air construction permit to construct or modify one or more emissions units.
- Air construction permit to make federally enforceable an assumed restriction on the potential emissions of one or more existing, permitted emissions units.
- Air construction permit for one or more existing, but unpermitted, emissions units.

**Owner/Authorized Representative**

1. Name and Title of Owner/Authorized Representative: <b>Kevin Charles, Terminal Manager</b>	
2. Owner/Authorized Representative Mailing Address: Organization/Firm: <b>Chevron Products Company</b> Street Address: <b>525 West Beach Drive</b> City: <b>Panama City</b> State: <b>Florida</b> Zip Code: <b>32401</b>	<i>chk@chevron.com</i>
3. Owner/Authorized Representative Telephone Numbers: Telephone: <b>(850) 785-7426</b> Fax: <b>(850) 784-1566</b>	
4. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative* of the facility addressed in this application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.</i>	
 Signature	<i>Nov 21, 2007</i> Date

\* Attach letter of authorization if not currently on file.

**Professional Engineer Certification**

1. Professional Engineer Name: <b>Samir M. Najim</b> Registration Number: <b>57206</b>	<i>Sam_najim@urscorp.com</i>
2. Professional Engineer Mailing Address: Organization/Firm: <b>URS Corporation</b> Street Address: <b>400 Northpark Town Center, 1000 Abernathy Road, NE, Suite 900</b> City: <b>Atlanta</b> State: <b>GA</b> Zip Code: <b>30328</b>	
3. Professional Engineer Telephone Numbers: Telephone: <b>(678) 808-8919</b>	<i>cell 770/714 7932</i> Fax: <b>(678) 808-8400</b>

4. Professional Engineer Statement:

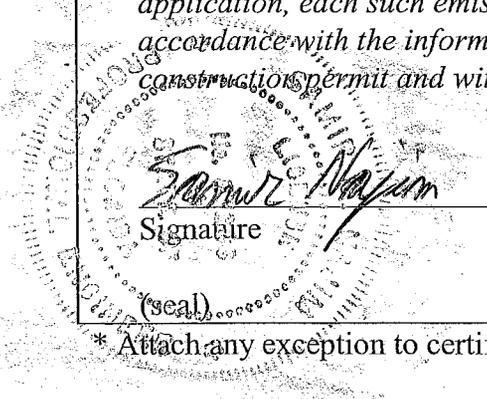
*I, the undersigned, hereby certify, except as particularly noted herein\*, that:*

*(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and*

*(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.*

*If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [ X ], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.*

*If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [   ], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.*

A circular professional engineer seal is partially visible on the left side of the page, overlapping the signature line. It contains text around the perimeter, including "STATE OF FLORIDA" and "PROFESSIONAL ENGINEER".  
\_\_\_\_\_  
Signature

11/20/07  
\_\_\_\_\_  
Date

\* Attach any exception to certification statement.

**Scope of Application**

Emissions Unit ID	Description of Emissions Unit	Permit Type	Processing Fee
007	Modifying Tank No. 63 (currently a fixed roof tank in Jet Fuel Service in Emission Unit ID 003), into ethanol service. Tank No. 63 will be modified with an Internal Floating Roof and subject to NSPS 40 CFR 60 Subpart Kb.	AF1C	\$250

**Application Processing Fee**

Check one:  Attached - Amount: \$ 250  Not Applicable

**Construction/Modification Information**

1. Description of Proposed Project or Alterations:

**This submittal is a request to modify Tank No. 63 (currently a fixed roof tank in Jet Fuel Service in Emission Unit ID 003), into ethanol service. Tank No. 63 will be modified with an Internal Floating Roof and subject to NSPS 40 CFR 60 Subpart Kb. Tank No. 63 will have a safe fill capacity of 156,463 gallons.**

**Chevron is not requesting a change in permitted throughput limits or maximum allowable VOC emissions with this modification. Chevron is requesting that ethanol be included in the combined volatile organic liquid (VOL) throughput of 325,760,000 gallons for gasoline, aviation gasoline. Based on the emission estimates attached, emissions from the facility will remain below major source thresholds (VOC, CO, NOX, and PM < 100 tpy, total HAP < 25 tpy, individual HAP < 10 tpy). Therefore, the Chevron Panama City Terminal will retain its status as a permitted Synthetic Minor source. The facility-wide emissions limit for VOC is 88.3 tpy for any 12 consecutive month period.**

2. Projected or Actual Date of Commencement of Construction: **January 31, 2008**

3. Projected Date of Completion of Construction: **May 1, 2008**

**Application Comment**

**Chevron would like to proceed with this project on a fast track basis to meet the market demands in the Panama City Area. Therefore Chevron is willing to meet and discuss this permit in person with the FDEP to achieve this fast track project.**

## II. FACILITY INFORMATION

### A. GENERAL FACILITY INFORMATION

#### Facility Location and Type

1. Facility UTM Coordinates: Zone: <b>16</b> East (km): <b>628.3</b> North (km): <b>3336.8</b>			
2. Facility Latitude/Longitude: Latitude (DD/MM/SS): <b>30/09/19</b> Longitude (DD/MM/SS): <b>85/39/52</b>			
3. Governmental Facility Code: <b>0</b>	4. Facility Status Code: <b>A</b>	5. Facility Major Group SIC Code: <b>51</b>	6. Facility SIC(s): <b>5171</b>
7. Facility Comment (limit to 500 characters):  <b>This facility is a petroleum terminal consisting of storage tanks, loading rack, and a vapor combustion unit. The terminal receives petroleum products by barge, stores those products in a variety of fixed and floating roof storage tanks, and distributes these products by tanker trucks. The ethanol for the terminal will be received by tank trucks at the facility tank truck loading rack (TTLR). Tanker truck loading emissions are controlled by a vapor combustion unit (VCU). This facility does not distribute petroleum products via marine terminal. Facility emissions are limited by limiting the maximum throughput of petroleum liquids and the facility-wide emissions limit of 88.3 tpy of VOC's for any 12 consecutive month period. This facility is considered a synthetic minor facility with the following Air Operating Permit (Number: 0050056-012-AF).</b>			

#### Facility Contact

1. Name and Title of Facility Contact: <b>Kevin Charles, Terminal Manager</b>			
2. Facility Contact Mailing Address: Organization/Firm: <b>Chevron Products Company</b> Street Address: <b>525 West Beach Drive</b> City: <b>Panama City</b> State: <b>FL</b> Zip Code: <b>32401</b>			
3. Facility Contact Telephone Numbers: Telephone: <b>(850) 785-7426</b> Fax: <b>(850) 784-1566</b>			

**Facility Regulatory Classifications**

**Check all that apply:**

1. <input type="checkbox"/> Small Business Stationary Source?	<input type="checkbox"/> Unknown
2. <input checked="" type="checkbox"/> Synthetic Non-Title V Source?	
3. <input checked="" type="checkbox"/> Synthetic Minor Source of Pollutants Other than HAPs?	
4. <input checked="" type="checkbox"/> Synthetic Minor Source of HAPs?	
5. <input type="checkbox"/> One or More Emissions Units Subject to NSPS?	
6. <input type="checkbox"/> One or More Emission Units Subject to NESHAP Recordkeeping or Reporting?	
7. Facility Regulatory Classifications Comment (limit to 200 characters):	
<p><b>This terminal is currently a permitted synthetic minor source. 40 CFR 63 Subpart R does not apply since the facility is not a major source of HAPs.</b></p>	

**Rule Applicability Analysis**

<p><b>62-4.050 F.A.C. Procedure to Obtain Permits and Other Authorizations Application</b> <b>62-210 F.A.C. Stationary Sources - General Requirements</b> <b>62-210.300 F.A.C. Permits Required</b> <b>62-212.300 F.A.C. and Application for FESOP.</b> <b>62-296.320 F.A.C. General Pollutant Emission Limiting Standards</b> <b>62-297.310 F.A.C. General Test Requirements</b> <b>62-297.330 F.A.C. Applicable Test Requirements</b> <b>62-297.340 F.A.C. Frequency of Compliance Tests</b> <b>62-297.570 F.A.C. Test Reports</b> <b>NSPS 40 CFR 60 Subpart A, General Provisions</b> <b>NSPS 40 CFR 60 Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels.</b></p>
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## C. FACILITY SUPPLEMENTAL INFORMATION

### Supplemental Requirements

1. Area Map Showing Facility Location: <input checked="" type="checkbox"/> Attached, Document ID: <b>Appendix B</b> <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
2. Facility Plot Plan and Tank Detail Drawing: <input checked="" type="checkbox"/> Attached, Document ID: <b>Appendix C</b> <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
3. Process Flow Diagram(s): <input checked="" type="checkbox"/> Attached, Document ID: <b>Appendix D</b> <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
4. Precautions to Prevent Emissions of Unconfined Particulate Matter: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
5. Supplemental Information for Construction Permit Application: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
6. Supplemental Requirements Comment: <b>Appendix E includes the following: Emissions Calculations from the Excel spreadsheets, and Emission calculations from EPA TANKS v4.09d.</b>  <b>Appendix F includes the MSDS for Ethanol.</b>

## III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through G as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

### A. GENERAL EMISSIONS UNIT INFORMATION

#### Emissions Unit Description and Status

<p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).</p> <p><input type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.</p> <p><input checked="" type="checkbox"/> This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.</p>		
<p>2. Description of Emissions Unit Addressed in This Section (limit to 60 characters):  <b>Modify Tank No. 63 (currently a fixed roof tank in Jet Fuel Service in Emission Unit ID 003), into ethanol service. Tank No. 63 will be modified with an Internal Floating Roof and subject to NSPS 40 CFR 60 Subpart Kb. Tank No. 63 will have a safe fill capacity of 156,463 gallons.</b></p>		
<p>3. Emissions Unit Identification Number: <span style="float: right;"><input type="checkbox"/> No ID</span>                  ID: <b>Tank 63 will be part of EU 007, and no longer part of EU 003</b> <span style="float: right;"><input type="checkbox"/> ID Unknown</span></p>		
<p>4. Emissions Unit Status Code: <b>A</b></p>	<p>5. Initial Startup Date: <b>May 1, 2008</b></p>	<p>6. Emissions Unit Major Group SIC Code: <b>51</b></p>
<p>7. Emissions Unit Comment: (Limit to 500 Characters)  <b>Tank No. 63 will be modified with an Internal Floating Roof for the storage of ethanol.</b></p>		

**Emissions Unit Control Equipment**

<p>1. Control Equipment/Method Description (limit to 200 characters per device or method):</p> <p><b>Tank No. 63 will be modified with an Internal Floating Roof for the storage of ethanol. Tank 63 will have a stainless steel mechanical shoe seal to comply with 40 CFR 60.112b(a)(1)(ii)</b></p>
<p>2. Control Device or Method Code(s): <b>099</b></p>

**Emissions Unit Details**

1. Package Unit:		
Manufacturer:		Model Number:
2. Generator Nameplate Rating:		MW
3. Incinerator Information:		
Dwell Temperature:		°F
Dwell Time:		seconds
Incinerator Afterburner Temperature:		°F

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Heat Input Rate:		mmBtu/hr
2. Maximum Incineration Rate:	lb/hr	tons/day
3. Maximum Process or Throughput Rate:		
4. Maximum Production Rate:	NA	
5. Requested Maximum Operating Schedule:		
	<b>24 hours/day</b>	<b>7 days/week</b>
	<b>52 weeks/year</b>	<b>8760 hours/year</b>
6. Operating Capacity/Schedule Comment (limit to 200 characters):		
<p><b>Tank No. 63 will be modified with an Internal Floating Roof for the storage of ethanol. Chevron will limit high volatile products of ethanol, gasoline and aviation gasoline to 325,760,000 gallons per year and 96,000 gallons per hour at the loading rack.</b></p>		

## B. EMISSION POINT (STACK/VENT) INFORMATION

### Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram? <b>See Plot Plan</b>	2. Emission Point Type Code: <b>3</b>	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): <b>Existing Tank No. 63</b>		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: <b>Tank No. 63 in EU 007 – Petroleum liquid storage tanks storing ethanol, having an internal floating roof, and subject to NSPS 40 CFR 60 Subpart A &amp; Kb requirements.</b>		
5. Discharge Type Code: <b>P</b>	6. Stack Height:  feet	7. Exit Diameter:  feet
8. Exit Temperature:  <b>Ambient</b>	9. Actual Volumetric Flow Rate:  acfm	10. Water Vapor:  %
11. Maximum Dry Standard Flow Rate:  dscfm	12. Nonstack Emission Point Height:  <b>40</b> feet	
13. Emission Point UTM Coordinates:  Zone: <b>16</b> East (km): <b>628.3</b> North (km): <b>3336.8</b>		
14. Emission Point Comment (limit to 200 characters):  <b>Standing and working losses occur through breather vents on the tank. The Nonstack Emission Point Height is the minimum shell height of the storage tank in this emission unit.</b>		

**C. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate:** Segment   1   of   1  

1. Segment Description (Process/Fuel Type) (limit to 500 characters):  <b>Standing Losses from storage tanks – Gasoline, Aviation Gasoline and Ethanol; Internal Floating Roof Tanks</b>		
2. Source Classification Code (SCC): <b>40400110</b>		3. SCC Units: <b>Thousand Gallons Stored</b>
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):  <b>Chevron will limit high volatile products of ethanol, gasoline and aviation gasoline to 325,760,000 gallons per year and 96,000 gallons per hour at the loading rack.</b>		

**Segment Description and Rate:** Segment   1   of   1  

1. Segment Description (Process/Fuel Type) (limit to 500 characters):  <b>Working Losses from Storage Tanks – Gasoline, Aviation Gasoline, and Ethanol; Internal Floating Roof Tanks</b>		
2. Source Classification Code (SCC): <b>40400116</b>		3. SCC Units: <b>Thousand Gallons Transferred or Handled</b>
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):  <b>Chevron will limit high volatile products of ethanol, gasoline and aviation gasoline to 325,760,000 gallons per year and 96,000 gallons per hour at the loading rack.</b>		



**E. VISIBLE EMISSIONS INFORMATION  
(Only Emissions Units Subject to a VE Limitation)**

**Visible Emissions Limitation:** Visible Emissions Limitation \_\_\_\_\_ of \_\_\_\_\_ Not Applicable

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment (limit to 200 characters):	

**F. CONTINUOUS MONITOR INFORMATION  
(Only Emissions Units Subject to Continuous Monitoring)**

**Continuous Monitoring System:** Continuous Monitor \_\_\_\_\_ of \_\_\_\_\_ Not Applicable

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number: _____ Serial Number: _____	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

## G. EMISSIONS UNIT SUPPLEMENTAL INFORMATION

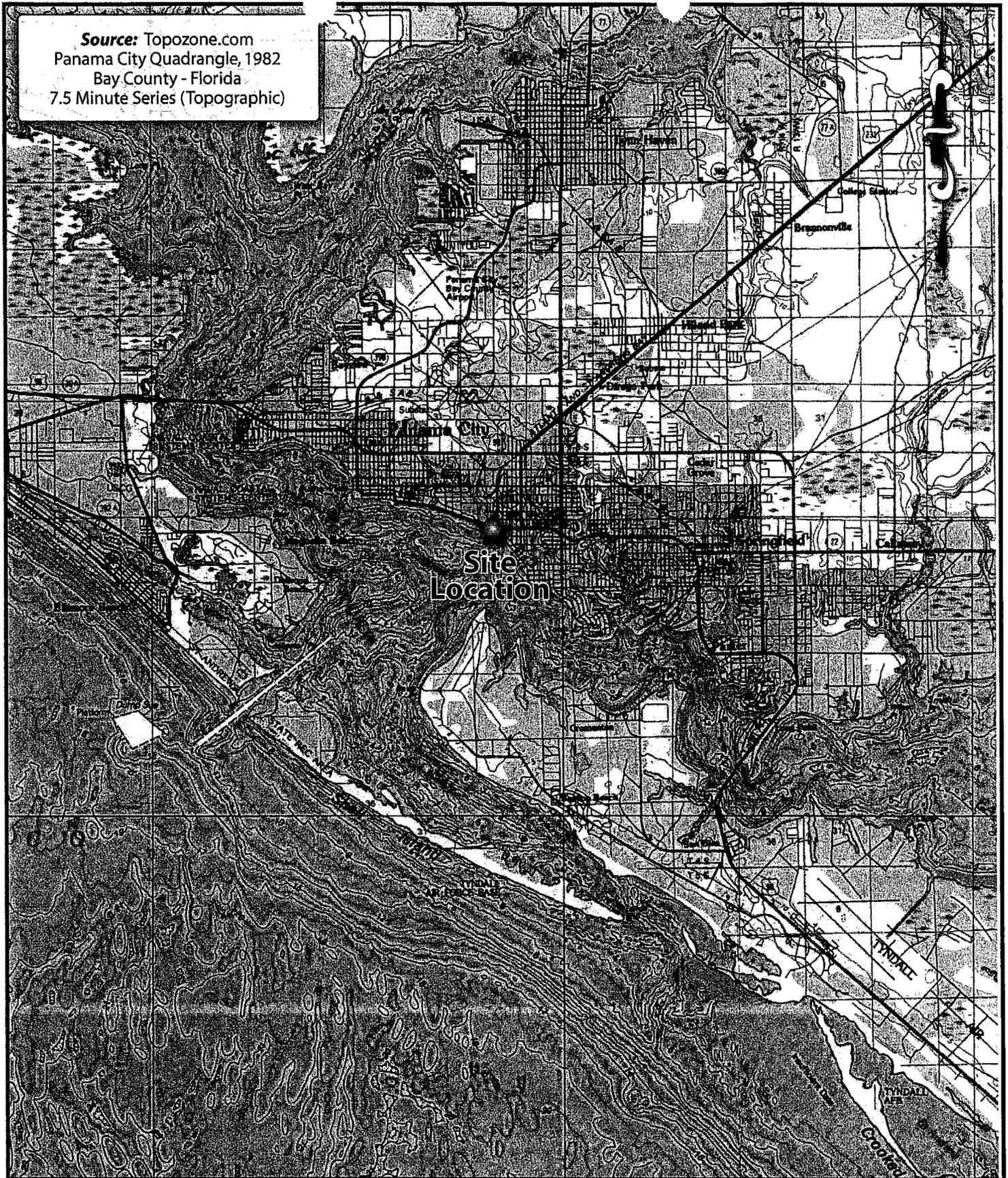
### Supplemental Requirements – Previously Listed in Section II C

1. Process Flow Diagram <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
2. Fuel Analysis or Specification <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
3. Detailed Description of Control Equipment <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
4. Description of Stack Sampling Facilities <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
5. Compliance Test Report <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously submitted, Date: _____ <input type="checkbox"/> Not Applicable
6. Procedures for Startup and Shutdown <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
7. Operation and Maintenance Plan <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable <input type="checkbox"/> Waiver Requested
8. Supplemental Information for Construction Permit Application <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
9. Other Information Required by Rule or Statute <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
10. Supplemental Requirements Comment:

## **Appendix B**

### **Area Map Showing Facility Location**

Source: Topozone.com  
 Panama City Quadrangle, 1982  
 Bay County - Florida  
 7.5 Minute Series (Topographic)



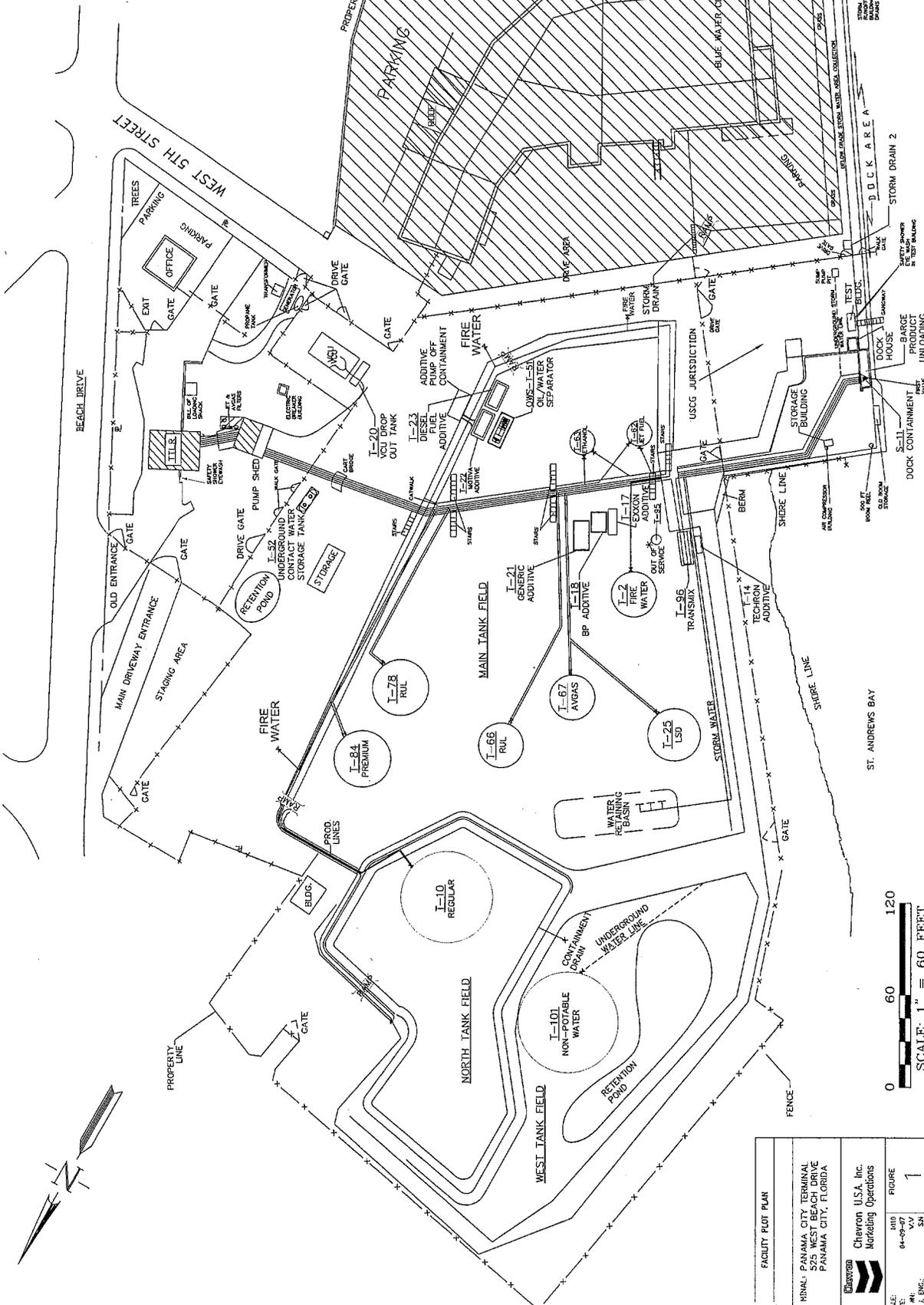
CLIENT: <b>Chevron</b>		TITLE: <b>Site Location Map</b>		
PROJECT: <b>Chevron Panama City Terminal 525 West Beach Drive, Panama City, Florida</b>				
DATE: <b>November 2007</b>	DESIGNED BY:			PROJ NO.: 15261369
SCALE: <b>1:100,000</b>	DRAWN BY: <b>J. Gross</b>			TASK: 45050
FILE: <b>H:\Projects\Chevron\PanamaCity\Figure 1.ai</b>	CHECKED BY: <b>S. Najim</b>			FIGURE: <b>1</b>

**Appendix C**

**Facility Plot Plan**

PANAMA CITY TERMINAL TANKS

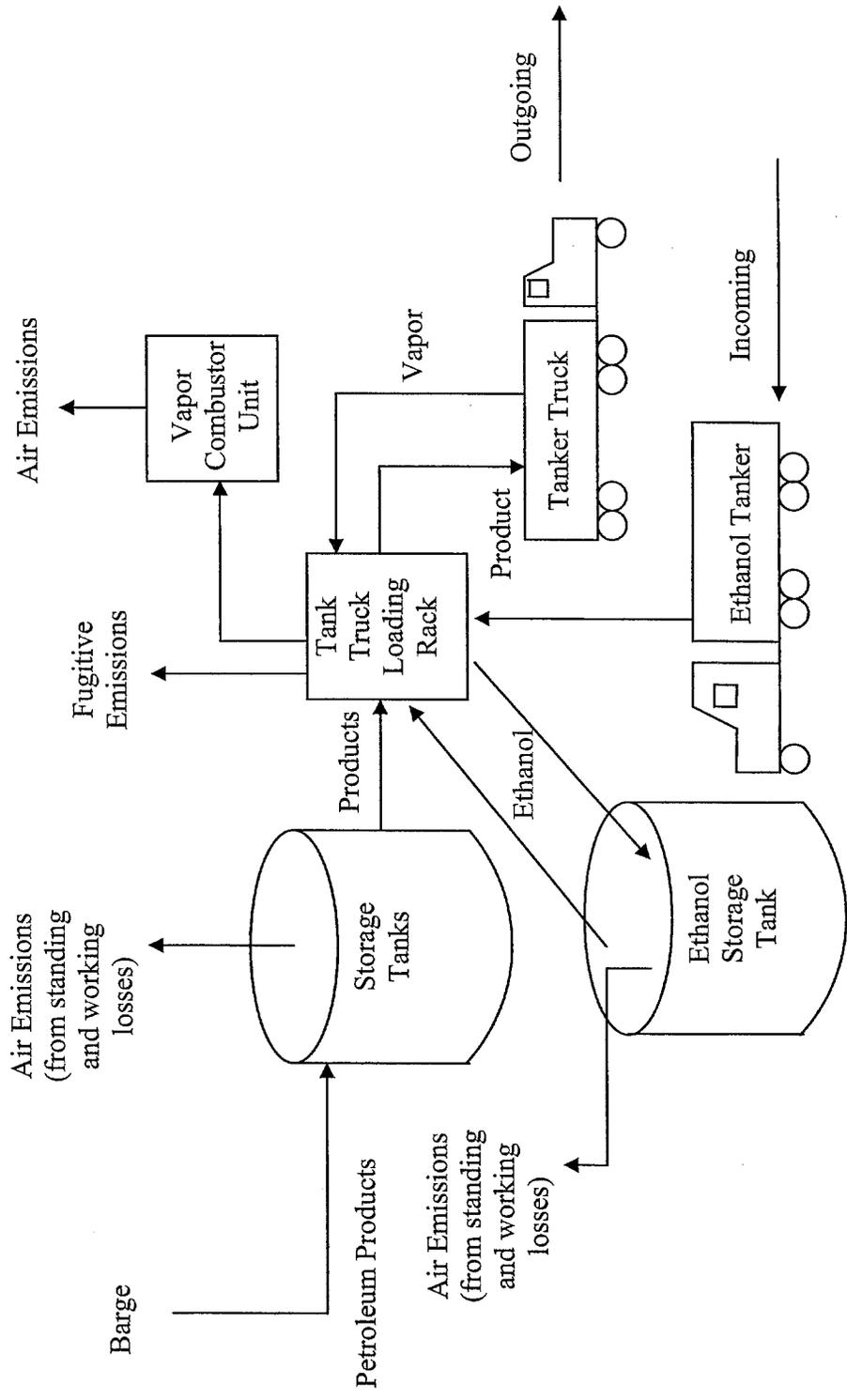
TANK NUMBER	TANK SIZE	HAZ. CAPACITY (GALS)	PRODUCT
1	85'-0" x 40'-2"	46,000	REGULAR
2	84'-0" x 40'-0"	43,084	FIRE WATER
10	110'-0" x 46'-0"	66,854	REGULAR
14	12'-0" x 35'-0"	872	DESOX. ADDITIVE
17	8'-0" x 16'-0"	143	EXON ADDITIVE
18	8'-0" x 10'-0"	98	BP ADDITIVE
21	8'-0" x 14'-0"	13	USG DROPOUT
22	8'-0" x 14'-0"	14	NOVA ADDITIVE
23	21'-6" x 8'-0"	164	DESO. LUBRICANT
25	10'-0" x 8'-0"	93	DESO. LUBRICANT
25	43'-5" x 30'-7"	20,392	DESO. NO. 2
51	37'-0" x 8'-0"	239	OWS
52	37'-0" x 8'-0"	298	OWS/PROCESS
62	30'-0" x 40'-0"	4,800	JET FUEL
63	30'-0" x 40'-0"	4,800	REGULAR
64	54'-8" x 46'-1"	18,481	AVGAS
67	54'-8" x 46'-1"	18,481	AVGAS 100
78	67'-0" x 47'-5"	28,117	REG. / PREMIUM
84	95'-0" x 45'-1"	50,112	PREMIUM
95	12'-0" x 35'-0"	804	OUT OF SERVL.
96	31'-11" x 8'-0"	295	TRANSIMX



FACILITY PLOT PLAN	
MINOR PANAMA CITY TERMINAL 525 WEST BEACH DRIVE PANAMA CITY, FLORIDA	
	Chevron U.S.A. Inc. Marketing Operations
SCALE: 1" = 60 FEET	FIGURE: 1
DATE: 04-09-07	BY: VV
APPROVED: [Signature]	SH
DESIGNED: [Signature]	

## **Appendix D**

### **Process Flow Diagram**



**Process Flow Diagram for Chevron Panama City Terminal Operations**

## **Appendix E**

### **Emission Calculations**

Emissions Calculations from the Excel spreadsheets,  
Emission calculations from EPA TANKS v4.09d

- Tank No. 63 with Jet Fuel
- Tank No. 63 with Ethanol

Prepared By: Laurel Key Date: 11/16/2007 Reviewed By: Sam Najim Date: 11/19/2007

**Section I. General Information**

Project: Chevron Panama City Terminal - Ethanol Project Emissions Calculations Project No.: 15261541  
 Subject: Ethanol Project Emissions Estimate for Chevron Products Company's Panama City, Florida Terminal

**Section II. Source Description**

- A. Chevron Tampa Terminal operates a bulk petroleum products distribution terminal in Panama City, Florida. The terminal receives a variety of refined petroleum products by barge and stores those products in fixed and floating roof storage tanks, and distributes these products by tank trucks (Standard Industrial Classification [SIC] Code 5171). Volatile organic compound (VOC) are due to standing and working tank losses, product loading losses, and fugitive emissions.
- B. This calculation estimates emissions from the conversion of the Tank No. 63, which is currently in Jet Fuel service to ethanol service at the Panama City Terminal. Tank No. 63 will be converted from being a fixed roof tank, to a fixed roof tank with an internal floating roof. Emissions include (Standing and Working tank losses) and associated piping and blending equipment, loading losses, and fugitive emissions associated with equipment installation.

**Section III. Data**

**Table III-1. Projected Throughput [Ref. A]**

Month	Ethanol
Total (gal/yr)	32,576,000

Ethanol throughput is based on 10% of all gasoline product throughputs (325,760,000 gallons)

- A. To calculate loading losses from the loading of gasoline products, 2005 VCU source test data [Ref. B] will be used plus 13 mg/L for fugitive emissions.

VCU VOC Emissions (Measured Value): 9.76 mg/L [Ref. B]  
 VCU Fugitive Emissions: 13 mg/L [Rule 62-212.300, FAC]

For ethanol emission estimate loading losses from the loading rack assuming a control efficiency of 97.22% as per 2005 VCU source test data [Ref. B].

Vapor Combustion Unit Control Efficiency: 97.22 %  
 Daily Average Ambient Temperature: 65.4 °F [Ref. B]  
 Saturation Factor: 1.0 (Truck loading with dedicated vapor balance service [Ref. D])

**Table III-3. Physical Data of Ethnaol [Ref. C]**

Product	Vapor Molecular Weight (lb/lb-mole)	Vapor Pressure (psia @61.25°F)
Ethanol	46.07	0.7339

- B. The American Petroleum Institute (API) has conducted extensive studies to develop and quantify fugitive emission leak factors for a variety of piping components found at marketing terminals [Ref. E,F]. These leak factors were not developed on a seasonal or monthly basis, and they are generally applied across components without respect to prevailing climatological conditions. Also, these products are not site-specific. Summarized below in Table III-4 is data used to estimate fugitive emissions from valves, flanges, and pumps.

**Table III-4. Fugitive Emission Data for Valve, Flanges, and Pumps**

Component	Average Number <sup>a</sup>	Emission Factor (lb/hr/component) <sup>b</sup>
Valves	32	1.5E-04
Connectors	16	6.7E-05
Pumps	2	9.3E-04

<sup>a</sup> Reference E  
<sup>b</sup> Reference F

Prepared By: Laurel Key Date: 11/16/2007 Reviewed By: Sam Najim Date: 11/19/2007

**Section IV. Approach**

- A. The Environmental Protection Agency's (EPA) TANKS v4.09 [Ref. G] was used to estimate standing and working emissions of VOC from the storage tanks presented in this calculation. Because this software is a peer-reviewed technical resource, a detailed manual calculation of the fixed-roof tank emission algorithms was not prepared. Complete documentation of the calculations performed in the TANKS v4.09 program is presented in EPA's AP-42 document [Ref. C].
- B. The following method is used to calculate loading losses from ethanol products. The American Petroleum Institute (API) has conducted much research into emissions from product loading. The current EPA-approved method for estimating loading losses is described in AP-42 Chapter 5, Section 5.2.2.1.1 [Ref. D]. This method is driven by a combination of parameters, including product vapor pressure, ambient temperature, and loading method. The general form of the emission factor equation is:

$$L = 12.46 * S * P * M * (100 - \text{Control Efficiency}(\%)) / T / 100$$

where

- L = Loading Loss (lb/Mgal)
- S = Saturation Factor
- P = True Vapor Pressure of Liquid Loaded (psia)
- M = Molecular Weight of Vapors (lb/lb-mole)
- T = Temperature (°R)

For example, the loading loss factor for the ethanol is calculated as follows:

$$L = 12.46 * 1.0 * 0.7339 * 46.07 * (100 - 97.22) / (65.4 + 460) / 100$$

$$= 0.0223 \text{ lb VOC/Mgal product loaded}$$

VOC emissions from the loading of ethanol is estimated as follows:

$$\begin{aligned} \text{VOC Loading Emissions} &= \text{Loading Factor (lb VOC/Mgal product) * Annual Ethanol Throughput (gal/yr) * (1 Mgal/1,000 gal)} \\ &= 0.0234 \text{ (lb VOC/Mgal) * 32,576,000 (gal/yr) Volume of ethanol * (1 Mgal/1,000 gal)} \\ &= 726.1488 \text{ lb VOC/yr} = 3.63\text{E-01 tpy VOC} \end{aligned}$$

- C. Fugitive VOC emissions from valves, pumps, and flanges are estimated as follows:

$$\text{VOC Fugitive Emissions} = \text{Emission Factor (lb/hr/component) * Number of Components * Hours of Operation per Year (hr/yr)}$$

For example, VOC emissions from terminal valves are estimated as follows:

$$\begin{aligned} \text{VOC Emissions from Valves} &= 1.5\text{E-04 (lb/hr/valve) * 32 valves * 24 (hr/day) * 365 (day/yr)} \\ &= 42 \text{ lb VOC/yr} = 0.021 \text{ tpy VOC} \end{aligned}$$

- D. The Ethanol Project Total Emissions are estimated by summing the actual emissions from working and standing tank losses, product loading, and fugitive emissions.

- E. Since the ethanol that will blended contains a maximum of 5% gasoline, HAP emissions have been estimated as follows:

$$\begin{aligned} \text{HAP Emissions: Example Benzene} &= \text{Weight Fraction of Benzene * VOC Emissions (tons/yr) * \% Gasoline in Fuel Grade Ethanol} \\ &= 0.005 * 0.63985 \text{ tons/yr} * 5\% \\ &= 1.57\text{E-04 tons/yr} \end{aligned}$$

Prepared By: Laurel Key Date: 11/16/2007 Reviewed By: Sam Najim Date: 11/19/2007

**Section V. Results**

A. See Attachment 2 for TANKS 4.09 output files for Ethanol Emissions.

**Table V-1. VOC Emissions from the Storage Tanks**

Pollutant	Storage Tank
VOC (lb/yr)	485.82
VOC (tpy)	0.24291

B. VOC emissions from the loading rack are summarized below in Table V-2.

**Table V-2. VOC Emissions from the Loading Rack**

Pollutant	Loading Rack
VOC (lbs/yr)	726.15

C. Actual VOC emissions from fugitive sources (valves, pumps, and flanges) are summarized below in Table V-3.

**Table V-3. Emissions from Fugitive Sources**

Component	VOC Emissions (tpy)
Valves	0.021
Connectors	0.005
Pumps	0.008
<b>Total VOC</b>	<b>0.034</b>

D. Total VOC and HAP emissions from the Ethanol Project are summarized below in Table V-4 and Table V-5.

**Table V-4. Total VOC Emissions from Ethanol Project**

Component	VOC Emissions (tpy)
Tank Losses	0.24291
Loading Losses	0.36307
Fugitive Losses	0.03387
<b>Total VOC</b>	<b>0.63985</b>

**Table V-5. HAP Emissions [Ref. D]**

HAP	Weight Fraction	Total tons/yr.
Benzene	4.91E-03	1.57E-04
Cresol (-o)	2.64E-06	8.45E-08
Cumene	7.04E-06	2.25E-07
Ethyl Benzene	4.74E-04	1.52E-05
Hexane	8.31E-03	2.66E-04
Napthalene	1.88E-06	6.02E-08
Phenol	7.10E-06	2.27E-07
Styrene	1.14E-05	3.63E-07
Toluene	6.59E-03	2.11E-04
Xylenes	2.00E-03	6.39E-05
<b>Total HAPs (tons/year)</b>	<b>=</b>	<b>7.14E-04</b>

Prepared By: Laurel Key Date: 11/16/2007 Reviewed By: Sam Najim Date: 11/19/2007

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**Section VI. References**

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- A. Data per communication with Panama City Terminal Manager.
- B. Results for Source Test performed on John Zink Vapor Combustion Unit (2005)
- C. Material Safety Data Sheet for Ethanol Fuel Grade Chevron Products Company, February. 14, 2006. See Appendix F.
- D. AP-42, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary and Area Sources, U.S. Environmental Protection Agency, Research Triangle Park, N.C., Fifth Edition, January 1995, Section 5.2.
- E. API Publication 4588, 1993
- F. API Average Fugitive Equipment Leak Factors
- G. TANKS v4.09 User's Guide, U.S. Environmental Protection Agency.

**TANKS 4.0.9d**  
**Emissions Report - Detail Format**  
**Tank Identification and Physical Characteristics**

**Identification**

User Identification: PC-63  
 City: Panama City  
 State: FL  
 Company: Chevron Products Company  
 Type of Tank: Vertical Fixed Roof Tank  
 Description: Jet Fuel Tank

**Tank Dimensions**

Shell Height (ft): 43.00  
 Diameter (ft): 30.00  
 Liquid Height (ft): 33.60  
 Avg. Liquid Height (ft): 30.00  
 Volume (gallons): 177,656.00  
 Turnovers: 183.37  
 Net Throughput(gal/yr): 32,576,000.00  
 Is Tank Heated (y/n): N

**Paint Characteristics**

Shell Color/Shade: White/White  
 Shell Condition: Good  
 Roof Color/Shade: White/White  
 Roof Condition: Good

**Roof Characteristics**

Type: Cone  
 Height (ft): 0.94  
 Slope (ft/ft) (Cone Roof): 0.06

**Breather Vent Settings**

Vacuum Settings (psig): -0.03  
 Pressure Settings (psig): 0.03

Meteorological Data used in Emissions Calculations: Apalachicola, Florida (Avg Atmospheric Pressure = 14.73 psia)

**TANKS 4.0.9d**  
**Emissions Report - Detail Format**  
**Liquid Contents of Storage Tank**

**PC-63 - Vertical Fixed Roof Tank**  
**Panama City, FL**

Mixture/Component	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
	Month	Avg.	Min.		Max.	Avg.	Min.					
Chevron - Jet Kerosene	All	70.07	65.44	74.70	68.10	0.0113	0.0105	0.0132	130.0000		130.00	Option 1: VP70 = .0113 VP80 = .0154

**TANKS 4.0.9d**  
**Emissions Report - Detail Format**  
**Detail Calculations (AP-42)**

**PC-63 - Vertical Fixed Roof Tank**  
**Panama City, FL**

<b>Annual Emission Calculations</b>	
Standing Losses (lb):	27.4189
Vapor Space Volume (cu ft):	9,410.1695
Vapor Density (lb/cu ft):	0.0003
Vapor Space Expansion Factor:	0.0311
Vented Vapor Saturation Factor:	0.9921
<b>Tank Vapor Space Volume:</b>	
Vapor Space Volume (cu ft):	9,410.1695
Tank Diameter (ft):	30.0000
Vapor Space Outage (ft):	13.3127
Tank Shell Height (ft):	43.0000
Average Liquid Height (ft):	30.0000
Roof Outage (ft):	0.3127
<b>Roof Outage (Cone Roof)</b>	
Roof Outage (ft):	0.3127
Roof Height (ft):	0.9380
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	15.0000
<b>Vapor Density</b>	
Vapor Density (lb/cu ft):	0.0003
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0113
Daily Avg. Liquid Surface Temp. (deg. R):	529.7393
Daily Average Ambient Temp. (deg. F):	68.0792
Ideal Gas Constant R (psia.cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	527.7692
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,473.5000
<b>Vapor Space Expansion Factor</b>	
Vapor Space Expansion Factor:	0.0311
Daily Vapor Temperature Range (deg. R):	18.5159
Daily Vapor Pressure Range (psia):	0.0027
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0113
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0105
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0132
Daily Avg. Liquid Surface Temp. (deg. R):	529.7393
Daily Min. Liquid Surface Temp. (deg. R):	525.1103
Daily Max. Liquid Surface Temp. (deg. R):	534.3682
Daily Ambient Temp. Range (deg. R):	15.9750
<b>Vented Vapor Saturation Factor</b>	
Vented Vapor Saturation Factor:	0.9921
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0113
Vapor Space Outage (ft):	13.3127
<b>Working Losses (lb):</b>	
Vapor Molecular Weight (lb/lb-mole):	377.2552
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	130.0000
Annual Net Throughput (gal/yr.):	0.0113
Annual Turnovers:	32,576,000.0000
Turnover Factor:	183.3656
Maximum Liquid Volume (gal):	0.3303
	177,656.0000

TANKS 4.0 Report

Maximum Liquid Height (ft):  
Tank Diameter (ft):  
Working Loss Product Factor:

33.6000  
30.0000  
1.0000

Total Losses (lb):

404.6741

TANKS 4.0.9d  
Emissions Report - Detail Format  
Individual Tank Emission Totals

Emissions Report for: Annual

PC-63 - Vertical Fixed Roof Tank  
Panama City, FL

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Chevron - Jet Kerosene	377.26	27.42	404.67



# TANKS 4.0.9d

## Emissions Report - Detail Format

### Tank Identification and Physical Characteristics

**Identification**  
 User Identification: PC-63\_IFR  
 City: Panama City  
 State: FL  
 Company: Chevron Products Company  
 Type of Tank: Internal Floating Roof Tank  
 Description: Ethanol Storage Tank

**Tank Dimensions**  
 Diameter (ft): 43.00  
 Volume (gallons): 156,463.00  
 Turnovers: 208.20  
 Self Supp. Roof? (y/n): Y  
 No. of Columns: 0.00  
 Eff. Col. Diam. (ft): 0.00

**Paint Characteristics**  
 Internal Shell Condition: Light Rust  
 Shell Color/Shade: White/White  
 Shell Condition: Good  
 Roof Color/Shade: White/White  
 Roof Condition: Good

**Rim-Seal System**  
 Primary Seal: Mechanical Shoe  
 Secondary Seal: None

**Deck Characteristics**  
 Deck Fitting Category: Typical  
 Deck Type: Welded

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam./Unbolted Cover, Ungasketed)	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	13
Sample Pipe or Well (24-in. Diam./Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam./Weighted Mech. Actuation, Gask.	1

Meteorological Data used in Emissions Calculations: Apalachicola, Florida (Avg Atmospheric Pressure = 14.73 psia)

# TANKS 4.0.9d

## Emissions Report - Detail Format

### Liquid Contents of Storage Tank

**PC-63\_IFR - Internal Floating Roof Tank**  
**Panama City, FL**

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Ethyl alcohol	Jan	62.25	58.21	66.29	68.10	0.7103	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	Feb	63.63	59.26	67.99	68.10	0.7442	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	Mar	66.80	62.19	71.42	68.10	0.8278	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	Apr	70.27	65.08	75.46	68.10	0.9284	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	May	73.50	68.14	78.87	68.10	1.0316	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	Jun	75.89	70.77	81.00	68.10	1.1140	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	Jul	76.39	71.71	81.06	68.10	1.1319	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	Aug	76.17	71.61	80.74	68.10	1.1242	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	Sep	74.78	70.36	79.20	68.10	1.0751	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	Oct	70.84	66.06	75.62	68.10	0.9460	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	Nov	66.75	62.36	71.13	68.10	0.8263	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	
Ethyl alcohol	Dec	63.57	59.53	67.60	68.10	0.7427	N/A	N/A	46.0700		46.07	Option 2: A=8.321, B=1718.21, C=237.52	

# TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

## PC-63\_IFR - Internal Floating Roof Tank Panama City, FL

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	11,8277	12,4075	13,8427	15,5807	17,3760	18,8185	19,1342	18,9989	18,1365	15,8861	13,8167	12,3816
Seal Factor A (lb-mole/ft-yr):	5.8000	5.8000	5.8000	5.8000	5.8000	5.8000	5.8000	5.8000	5.8000	5.8000	5.8000	5.8000
Seal Factor B (lb-mole/ft-yr (mph) <sup>1.75</sup> ):	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000
Value of Vapor Pressure Function:	0.0124	0.0130	0.0145	0.0163	0.0181	0.0197	0.0200	0.0198	0.0189	0.0166	0.0144	0.0129
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7103	0.7442	0.8278	0.9284	1.0316	1.1140	1.1319	1.1242	1.0751	0.9460	0.8263	0.7427
Tank Diameter (ft):	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	14.0541	14.0541	14.0541	14.0541	14.0541	14.0541	14.0541	14.0541	14.0541	14.0541	14.0541	14.0541
Number of Columns:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Effective Column Diameter (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Net Throughput (gal/mo.):	2,714,666.6660	2,714,666.6660	2,714,666.6660	2,714,666.6660	2,714,666.6660	2,714,666.6660	2,714,666.6660	2,714,666.6660	2,714,666.6660	2,714,666.6660	2,714,666.6660	2,714,666.6660
Shell Clingage Factor (tbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100	6.6100
Tank Diameter (ft):	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000
Deck Fitting Losses (lb):	8.1049	8.5022	9.4856	10.6766	11.9068	12.8963	13.1116	13.0189	12.4279	10.8859	9.4678	8.4844
Value of Vapor Pressure Function:	0.0124	0.0130	0.0145	0.0163	0.0181	0.0197	0.0200	0.0198	0.0189	0.0166	0.0144	0.0129
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact. (lb-mole/yr):	170.9000	170.9000	170.9000	170.9000	170.9000	170.9000	170.9000	170.9000	170.9000	170.9000	170.9000	170.9000
Deck Seam Losses (lb):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Length (ft):	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400	290.4400
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Length Factor (ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000	43.0000
Vapor Molecular Weight (lb/lb-mole):	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700	46.0700
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	33,9867	34,9638	37,3825	40,3114	43,3369	45,7679	46,2999	46,0718	44,6185	40,8261	37,3386	34,9202

Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/(yr mpr <sup>1.75</sup> n))	m	Losses (lb)
Access Hatch (24-in. Diam./Unbolted Cover, Ungasketed)	1	36.00	5.90	1.20	27.1965
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	10.5764
Roof Leg or Hanger Well/Adjustable	13	7.90	0.00	0.00	77.5856
Sample Pipe or Well (24-in. Diam./Slit Fabric Seal 10% Open)	1	12.00	0.00	0.00	9.0655
Vacuum Breaker (10-in. Diam./Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	4.6838

**TANKS 4.0.9d**  
**Emissions Report - Detail Format**  
**Individual Tank Emission Totals**

**Emissions Report for: Annual**

**PC-63\_IFR - Internal Floating Roof Tank**  
**Panama City, FL**

Components	Losses (lbs)			Total Emissions	
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss		Deck Seam Loss
Ethyl alcohol	188.21	168.65	128.97	0.00	485.82



## **Appendix F**

### **Supplemental Attachments**

MSDS for Ethanol



# Material Safety Data Sheet

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Ethanol - Fuel Grade

**Product Use:** Gasoline fuel additive

**Product Number(s):** CPS296660

**Synonyms:** Ethyl Alcohol

**Company Identification**

Chevron Products Company  
Marketing, MSDS Coordinator  
6001 Bollinger Canyon Road  
San Ramon, CA 94583  
United States of America

**Transportation Emergency Response**

CHEMTREC: (800) 424-9300 or (703) 527-3887

**Health Emergency**

ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted.  
(800) 231-0623 or (510) 231-0623

**Product Information**

Technical Information: (510) 242-5357

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

**SPECIAL NOTES:** California limits benzene content to < 0.1%.

COMPONENTS	CAS NUMBER	AMOUNT
Ethanol - fuel grade	Mixture	100 %volume
Ethanol	64-17-5	92.1 - 98.04 %volume
Methanol	67-56-1	< 0.5 %volume
Water	7732-18-5	< 1 %volume
Gasoline	86290-81-5	1.96 - 4.76 %volume
Benzene	71-43-2	< 0.23 %volume
Fusel oil	8013-75-0	< 5 %volume

## SECTION 3 HAZARDS IDENTIFICATION

\*\*\*\*\*

### EMERGENCY OVERVIEW

- EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE
- MAY BE HARMFUL IF SWALLOWED
- NOT FOR HUMAN CONSUMPTION
- CAUSES EYE, SKIN, AND RESPIRATORY TRACT IRRITATION
- CANCER HAZARD - CAN CAUSE CANCER
- BIRTH DEFECT HAZARD - MAY CAUSE BIRTH DEFECTS

- MAY CAUSE DAMAGE TO:
- CARDIOVASCULAR SYSTEM
- LIVER

\*\*\*\*\*

**IMMEDIATE HEALTH EFFECTS**

**Eye:** Contact with the eyes causes irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision.

**Skin:** Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Contact with the skin is not expected to cause an allergic skin response. Symptoms may include pain, itching, discoloration, swelling, and blistering. Not expected to be harmful to internal organs if absorbed through the skin.

**Ingestion:** May be harmful if swallowed. THIS ALCOHOL IS DENATURED AND IS NOT FIT FOR HUMAN CONSUMPTION. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea.

**Inhalation:** The vapor or fumes from this material may cause respiratory irritation. Mists of this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

**DELAYED OR OTHER HEALTH EFFECTS:**

**Reproduction and Birth Defects:** This material may cause harm to the unborn child.

**Cancer:** Prolonged or repeated exposure to this material can cause cancer. Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

**Target Organs:** Repeated inhalation of this material at concentrations above the recommended exposure limit may cause damage to the following organ(s): Repeated ingestion of this material may cause damage to the following organ(s): Liver Cardiovascular System

Risk depends on duration and level of exposure. See Section 11 for additional information.

**SECTION 4. FIRST AID MEASURES**

**Eye:** Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get medical attention if irritation persists.

**Skin:** Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

**Ingestion:** If swallowed, get medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

**Inhalation:** Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

## SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

### FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Flammable liquid.

NFPA RATINGS: Health: 1 Flammability: 3 Reactivity: 0

### FLAMMABLE PROPERTIES:

Flashpoint: < -14 °C (< 7 °F)

Autoignition: 363 °C (685 °F)

Flammability (Explosive) Limits (% by volume in air): Lower: 3.3 Upper: 19

EXTINGUISHING MEDIA: Dry Chemical, CO<sub>2</sub>, AFFF Foam or alcohol resistant foam.

### PROTECTION OF FIRE FIGHTERS:

**Fire Fighting Instructions:** For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Do not breathe mist. Wash thoroughly after handling.

**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77,

'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

**General Storage Information:** DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces. USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

### ENGINEERING CONTROLS:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

### PERSONAL PROTECTIVE EQUIPMENT

**Eye/Face Protection:** Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.

**Skin Protection:** Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.

**Respiratory Protection:** Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.

When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

### Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Benzene	ACGIH	.5 ppm (weight)	2.5 ppm (weight)	--	Skin A1 Skin
Benzene	OSHA SRS	1 ppm (weight)	5 ppm (weight)	--	--
Benzene	OSHA Z-2	10 ppm (weight)	--	25 ppm (weight)	--
Ethanol	ACGIH	1000 ppm (weight)	--	--	A4

Ethanol	OSHA Z-1	1900 mg/m3	--	--	--
Gasoline	ACGIH	300 ppm (weight)	500 ppm (weight)	--	A3
Methanol	ACGIH	200 ppm (weight)	250 ppm (weight)	--	Skin

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

**Color:** Colorless

**Physical State:** Liquid

**Odor:** Petroleum odor

**pH:** Not Applicable

**Vapor Pressure:** 4.5 psi

**Vapor Density (Air = 1):** 1.6

**Boiling Point:** 78.3°C (173°F)

**Solubility:** Soluble in water and many organic solvents.

**Freezing Point:** Not Applicable

**Specific Gravity:** 0.794 @ 15.6°C (60.1°F)

**Viscosity:** 1.06 cSt @ 40°C (104°F)

## SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. May react with strong oxidizing materials and magnesium and magnesium alloys.

**Hazardous Decomposition Products:** None known (None expected)

**Hazardous Polymerization:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

### IMMEDIATE HEALTH EFFECTS

**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Sensitization:** The skin sensitization hazard is based on evaluation of data for similar materials or product components.

**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Oral Toxicity:** The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

### ADDITIONAL TOXICOLOGY INFORMATION:

This product contains ethanol (ethyl alcohol). Chronic ingestion of ethanol can damage the liver, nervous system and heart. Chronic heavy consumption of alcoholic beverages has been associated with an increased risk of cancer. Ingestion of ethanol during pregnancy can cause human birth defects such as fetal alcohol syndrome. This product contains benzene.

**GENETIC TOXICITY/CANCER:** Repeated or prolonged breathing of benzene vapor has been associated with the development of chromosomal damage in experimental animals and various blood diseases in humans ranging from aplastic anemia to leukemia (a form of cancer). All of these diseases can be fatal. In some individuals, benzene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation.

**REPRODUCTIVE/DEVELOPMENTAL TOXICITY:** No birth defects have been shown to occur in pregnant laboratory animals exposed to doses not toxic to the mother. However, some evidence of fetal toxicity such as delayed physical development has been seen at such levels. The available information on the effects of benzene on human pregnancies is inadequate but it has been established that benzene can cross the human placenta.

**OCCUPATIONAL:** The OSHA Benzene Standard (29 CFR 1910.1028) contains detailed requirements for training, exposure monitoring, respiratory protection and medical surveillance triggered by the exposure level. Refer to the OSHA Standard before using this product.

## **SECTION 12 ECOLOGICAL INFORMATION**

### **ECOTOXICITY**

This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

### **ENVIRONMENTAL FATE**

This material is expected to be readily biodegradable. Denatured fuel ethanol is highly soluble in water although the gasoline component (~2-5 %weight) is likely to phase separate under most potential spill scenarios (i.e., when the ethanol concentration in receiving waters is less than 70%) resulting in some sheen and micro emulsion formation.

Due to ethanol's aerobic microbial degradability and biochemical oxygen demand (BOD), significant oxygen depletion is a potential secondary complication in some water bodies where receiving water concentrations of ethanol exceed approximately 12-35 mg ethanol/L for more than 12-36 hours.

It is possible that under stagnant water or even extremely low flow conditions, anaerobic biodegradation could occur. Under such circumstances it is likely that methanogenic bacteria will prevail in metabolizing most of the ethanol resulting in the generation of methane gas. Whether biodegradation occurs aerobically or anaerobically, metabolic pathway intermediates (e.g., acetaldehyde, butyric acid, acetone) as well as microbial biomass may present taste/odor issues in affected freshwater systems.

## **SECTION 13 DISPOSAL CONSIDERATIONS**

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

## **SECTION 14 TRANSPORT INFORMATION**

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: ALCOHOLS, N.O.S.,3,UN1987,II

IMO/MDG Shipping Description: ALCOHOLS, N.O.S.(ETHANOL),3,UN1987,II

**SECTION 15 REGULATORY INFORMATION**

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects:	YES
2. Delayed (Chronic) Health Effects:	YES
3. Fire Hazard:	YES
4. Sudden Release of Pressure Hazard:	NO
5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Benzene	01-1, 02, 03, 04, 05, 06, 07
Ethanol	01-1, 02, 04, 05, 06, 07
Fusel oil	06
Gasoline	01-2B, 07
Methanol	03, 05, 06, 07

**CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):**

Component	Component RQ	Component TPQ	Product RQ
Ethanol	100 lbs	None	102 lbs
Gasoline	100 lbs	None	990 lbs
Methanol	5000 lbs	None	1000000 lbs

**CHEMICAL INVENTORIES:**

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

**WHMIS CLASSIFICATION:**

Class B, Division 2: Flammable Liquids  
Class D, Division 2, Subdivision A: Very Toxic Material -  
Teratogenicity and Embryotoxicity  
Carcinogenicity  
Class D, Division 2, Subdivision B: Toxic Material -  
Skin or Eye Irritation

**SECTION 16 OTHER INFORMATION**

NFPA RATINGS: Health: 1 Flammability: 3 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, \*- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

**REVISION STATEMENT:** This revision updates the following sections of this Material Safety Data Sheet: 1,14

**Revision Date:** 02/14/2006

**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.