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## RISK MANAGEMENT PLAN

Former Chevron Station #21-0208  
6006 International Boulevard  
Oakland, California

Project No. DG20208G.5C01

### Prepared for:

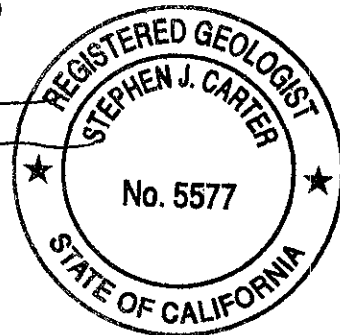
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### Prepared by:

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A handwritten signature in black ink that reads "Stephen J. Carter". The signature is written in a cursive style and is positioned above a horizontal line.

Stephen J. Carter  
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Greg A. Gurss  
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August 28, 2001

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## 1.0 INTRODUCTION

Delta Environmental Consultants Inc. network associate Gettler-Ryan Inc. (GR) prepared this Risk Management Plan (RMP) at the request of Chevron Products Company. The subject site was formerly operated as Chevron Service Station #21-0208, located at 6006 International Boulevard, Oakland, California. Operation of the station facilities ceased in approximately 1960. An environmental investigation identified petroleum hydrocarbons in the soil and groundwater beneath the site. Remedial excavation activities appear to have removed impacted soil. Groundwater beneath the site has been impacted by fuel hydrocarbon, and the lateral extent of the impact has not been delineated.

There is always some level of uncertainty in subsurface environmental investigations. Although highly unlikely, it is possible that the environmental investigation failed to identify some areas of impacted soil, and that future development of the site might encounter impact. This document provides a Risk Management Plan (RMP) for the site **in the event soil or groundwater are encountered during construction activities that exhibit obvious evidence of petroleum hydrocarbons, such as strong gasoline or oil odors, or obvious staining of the soil.** In Section 2, the compounds of concern (COCs), risk, and sources of risk are summarized. In Section 3, risk management measures are developed. Figures showing the site location and relevant former site features are provided in Appendix A.

## 2.0 RISK SUMMARY

### **2.1 Summary of Environmental Work**

All aboveground and underground facilities have been removed. Delineation of soil impact is complete. Impacted soil has been excavated and removed. Shallow groundwater beneath the site is impacted, and the lateral extent of the impact has not been delineated.

In preparation for development of the site, Subsurface Consultants, Inc. (SCI) performed a geotechnical investigation that included both the subject site and two adjacent parcels in January 2001. A geophysical survey identified an underground storage tank (UST) beneath the sidewalk, and a product line running from the UST to the former dispenser island. SCI drilled two soil borings (B-4 and B-5) in the vicinity of the former service station. Soil samples from approximately 10 feet below ground surface (bgs) and grab groundwater samples were analyzed for petroleum hydrocarbons. Concentrations of gasoline-range, diesel-range, oil-range hydrocarbons, and benzene were detected in these samples. High concentrations of lead were detected in backfill material from the UST pit.

One 1,000-gallon UST and associated product piping were removed in June 2001. Groundwater was encountered in the UST excavation, stabilizing at approximately 7 feet bgs (24 hours after UST removal). Soil samples were collected from the walls of the UST pit (CX-1-9 and CX-2-9) and the base of the product line trench (CT-1-2.5 and CT-2-2.5). Samples from the UST pit did not contain petroleum hydrocarbons. Gasoline-range hydrocarbons were detected in the two soil samples collected from the product line trench. Hydrocarbons were also detected in a grab groundwater sample from the UST pit.

A total of 17 GeoProbe borings (GP-1 through GP-17) were advanced at the site up to depths of 10 feet bgs in July 2001 to assess the lateral extent of soil impact. Soil samples were collected at 2.5 and 5.5 feet bgs. Grab groundwater samples were collected from seven of the borings. Analytical data from the soil samples indicated that soil impact is limited to the immediate vicinity of the former product line and dispenser island.

Based on these findings, approximately 150 cubic yards of soil was excavated and removed from the site in early August, 2001. At the direction of Alameda County Environmental Health Division soil samples were not collected from the walls of excavation (Analytical results of the soil samples from the GeoProbe borings were used to define the limits of the excavation).

Tables containing chemical analytical data from soil and grab groundwater samples collected during these investigations and figures showing the locations of former site features, borings, and soil samples are provided in Appendix A. Observations regarding the data are listed below.

- The highest hydrocarbon concentrations were detected in soil samples collected from the base of the product line trench. The two soil samples contained 560 and 860 parts per million (ppm) of Total Petroleum Hydrocarbons as gasoline (TPHg).
- The lateral extent of hydrocarbons in unsaturated soil has been well defined by soil samples collected from the 17 GeoProbe borings advanced in the vicinity of the former UST, dispenser island, and dispenser island.
- Benzene was not detected in any of the soil samples collected from the former UST pit or the GeoProbe borings. Benzene was detected in the soil sample from boring B-4 at 9.5 feet bgs, but this sample was collected below the level of groundwater encountered during drilling, and is probably due to the presence of impacted groundwater in this area.
- The fuel oxygenate MTBE was not detected in the soil samples collected from the UST pit or the product line trench. Two soil samples from the GeoProbe borings contained MTBE at concentrations of 0.13 and 0.43 ppm. These results are from analysis by EPA Method 8020, and have not been confirmed by EPA Method 8260. Because of the analytical Method used, and 36 other soil samples analyzed did not contain MTBE, we suspect that the reported presence of MTBE in these two samples is a false positive. The fact that Chevron ceased operation of the site in approximately 1960 supports this conclusion.
- Groundwater was encountered beneath the site between 6 and 7 feet bgs. Grab groundwater samples collected in the vicinity of the site contained TPHg up to 13,000 parts per billion (ppb) and benzene up to 100 ppb. Only one of the eight grab groundwater samples analyzed for MTBE (EPA Method 8020) contained a detectable concentration (140 ppb), and this was not confirmed by EPA Method 8260. We suspect this to be a false positive result. The lateral extent of impacted groundwater has not been delineated at this site. Again, the fact that Chevron ceased operation of the site in approximately 1960 supports this conclusion.
- The SCI report indicated that soil and groundwater samples from borings B-4 and B-5 were also analyzed for Total Petroleum Hydrocarbons as diesel (TPHd) and as oil (TPHo) hydrocarbons. Copies of the laboratory report for these analyses included footnotes indicating that compounds detected and reported in these hydrocarbon ranges were due to

the presence of gasoline-range hydrocarbons. Soil or groundwater at this site do not appear to have been impacted by TPHd or TPHo.

- The geophysical data in the SCI report do not suggest the presence of any other potential sources (USTs, piping, hydraulic hoists, etc.) at the site. A Phase I investigation performed by the property owner did not contain any information that suggested other source areas.

## 2.2 Risk Summary

Potential sources of hydrocarbon impact (UST, product piping) have been removed. Hydrocarbon impact to soil has been delineated, and the impacted soil has been excavated and properly disposed of at an off-site facility. Groundwater beneath the site is impacted with dissolved hydrocarbons, and the lateral extent of the impact has not been delineated. A Risk-Based Corrective Action analysis has not yet been performed for this site, and health-based goals have not been established. Although it appears that impacted soil has been delineated and remediated, it is possible that environmental activities performed to date may have missed pockets of impacted soil. Possible scenarios where previously impacted groundwater or unidentified hydrocarbon-impacted soil might be encountered and human or environmental receptors are exposed to hydrocarbons are discussed below.

- Construction workers engaged in subsurface piping or foundation excavation at the site could be exposed to hydrocarbon-impacted soil if excavating in unexplored portions of the site.
- Construction workers engaged in subsurface piping or foundation excavation could be exposed to impacted groundwater if the excavation extends deeper than 6 feet bgs.
- Construction dewatering could take place at or near the site. Untreated groundwater could be inadvertently discharged to the street or storm drain.
- Soil excavated from the site might be planned for use as fill for landscaping. If this soil is impacted, it could expose workers or residents to petroleum hydrocarbons.
- If previously unidentified pockets of highly impacted soil are intersected by excavations, atmospheric conditions, such as pressure and temperature, could create a situation where vapor phase hydrocarbons accumulate at the bottom of a trench or excavation. Workers might then be exposed to vapor phase hydrocarbons, or the mixture of air and vapor phase hydrocarbons could reach the lower explosive limit, and an ignition source could cause a fire or explosion.

### 3.0 RISK MANAGEMENT

It appears highly unlikely exposure risks identified in Section 2 above will be realized at this site. Soil impacted by petroleum hydrocarbons is not likely to be encountered during construction activities. All areas of known petroleum usage (USTs, lifts, piping) were investigated and remediated. Soil borings drilled outside these areas did not encounter any hydrocarbon impact. The risk of either resident or construction worker being exposed to petroleum hydrocarbons appears very low. For informational purposes a 1985 Material Safety Data Sheet for leaded Chevron gasoline is attached in Appendix B.

In the unlikely event that construction activities encounter soil that exhibits an odor of gasoline or other petroleum product, has free-flowing oil or other petroleum-like substance, or is obviously stained or discolored relative to surrounding soil, work on that portion of the project should be halted and either GR (916.631.1300) or Chevron (925.842.8898) should be contacted immediately. Chevron will dispatch appropriately trained personnel to evaluate the situation and collect samples as appropriate. Chevron will also notify the appropriate regulatory agency. If petroleum hydrocarbons are present, Chevron will arrange for appropriate remedial measures to be implemented. Excavated soil exhibiting petroleum impact will be properly disposed of by Chevron. Disposal of soil that has not been impacted by petroleum (as determined by chemical analysis) will be the responsibility of the property owner or developer. Impacted soil should not be used for landscaping or backfill at the site, but should be removed to an appropriate disposal facility.

Given the shallow depth to groundwater at this site (6 to 7 feet bgs), it is possible that impacted groundwater might be encountered during foundation or utility trenching. If it becomes necessary to pump groundwater at this site (construction dewatering, for example), Chevron should be contacted prior to initiating any pumping activities. Chevron will contact the appropriate regulatory agency, will assist in obtaining the necessary permits, and will provide assistance with any required remedial equipment or personnel required. Because the site will be supplied by municipal water service, groundwater extraction wells should not be necessary at the site. Chevron should be contacted prior to any attempt to install a groundwater extraction well at the site for any purpose.

### 4.0 LIMITATIONS

Evaluations of the subsurface conditions at the site that serve as a basis for this RMP are inherently limited due to the limited number of observation points. There may be variations in subsurface conditions in areas away from the sample points. There are no representations, warranties, or guarantees that the points selected for sampling are representative of the entire site. The recommendations provided herein reflect the sample conditions at specific locations at a specific point in time. No other interpretations, representations, warranties, guarantees, express or implied, are included or intended in this RMP. Additional work, including further subsurface investigation, might reduce the inherent uncertainties associated with this RMP.

## **APPENDIX A**

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**TABLE 1. SOIL ANALYTICAL DATA**  
Former Chevron Station #21-0208  
6006 International Boulevard  
Oakland, California

Sample ID	Date	Depth (feet)	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	MTBE (ppm)	Lead (ppm)
<b>GeoProbe Borings</b>									
GP1-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<6.1
GP1-5.5	7/17/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<6.2
GP2-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	0.43	<5.4
GP2-5.5	7/17/2001	5.5	110	<0.25	<0.25	<0.25	0.40	<2.5	7.6
GP3-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	5.4
GP3-5.5	7/17/2001	5.5	1.1	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<5.7
GP4-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<6.5
GP4-5.5	7/17/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<7.1
GP5-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<6.5
GP5-5.5	7/17/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<6.8
GP6-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	18
GP6-5.5	7/17/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<5.7
GP7-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<6.2
GP7-5.5	7/17/2001	5.5	3.4	<0.0050	<0.0050	<0.0050	0.0073	<0.050	<6.4
GP8-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<5.6
GP8-5.5	7/17/2001	5.5	1.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<5.8
GP9-2.5	7/17/2001	2.5	23	<0.025	<0.025	0.11	0.056	<0.25	11
GP9-5.5	7/17/2001	5.5	150	<0.25	<0.25	<0.25	0.53	<2.5	<6.0
GP10-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	7.5
GP10-5.5	7/17/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<5.7
GP11-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<5.8
GP11-5.5	7/17/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<5.9
GP12-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<6.6
GP12-5.5	7/17/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	7.6
GP13-2.5	7/17/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<5.7
GP13-5.5	7/17/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<5.7
GP14-2.5	7/18/2001	2.5	130	<0.25	<0.25	0.99	0.66	<2.5	<6.6
GP14-5.5	7/18/2001	5.5	150	<0.25	<0.25	<0.25	0.48	<2.5	<6.5
GP15-2.5	7/18/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	0.13	<6.4
GP15-5.5	7/18/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<7.2



**TABLE 1. SOIL ANALYTICAL DATA**  
 Former Chevron Station #21-0208  
 6006 International Boulevard  
 Oakland, California

Sample ID	Date	Depth (feet)	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	MTBE (ppm)	Lead (ppm)
GP16-2.5	7/18/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<6.6
GP-16-5.5	7/18/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<6.5
GP17-2.5	7/18/2001	2.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<7.4
GP17-5.5	7/18/2001	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<7.1
<b>Composite Samples</b>									
EH0-3	7/18/2001	----	2.5	<0.0050	<0.0050	0.015	0.013	<0.050	<6.9
EH3-6	7/18/2001	----	2.4	<0.0050	<0.0050	0.0054	0.0072	<0.050	<6.4
WH0-3	7/17/2001	----	5.0	<0.025	<0.025	<0.025	<0.025	<0.25	<6.7
WH3-6	7/17/2001	----	4.0	<0.0050	<0.0050	0.0093	0.011	<0.050	<7.2

**Explanation:**

TPHg = Total Petroleum Hydrocarbons as gasoline  
 BTEX = benzene, toluene, ethylbenzene and xylenes  
 MTBE = methyl tert-butyl ether  
 ppm = parts per million  
 ---- = not applicable

**Analytical Methods:**

TPHG/BTEX/MTBE: EPA Methods/8020M  
 Lead: EPA Method 6010

**Analytical Laboratory:**

Sequoia Analytical (ELAP #2374)

**TABLE 2. GRAB GROUNDWATER ANALYTICAL DATA**  
 Former Chevron Station #21-0208  
 6006 International Boulevard  
 Oakland, California

Sample ID	Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)	Dissolved Lead (ppb)
GP11-W	7/17/01	13,000	28	<10	110	57	<50	<75
GP12-W	7/17/01	64	<0.50	<0.50	<0.50	<0.50	<0.50	<75
GP13-W	7/18/01	57	<0.50	<0.50	<0.50	<0.50	<0.50	<75
GP14-W	7/18/01	8,100	100	<2.5	180	24	140	<75
GP15-W	7/18/01	11,000	<25	<25	43	48	<120	<75
GP16-W	7/18/01	970	<0.50	<0.50	4.7	6.0	<2.5	<75
GP17-W	7/18/01	<50	<0.50	<0.50	<0.50	<0.50	<2.5	<75

**Explanation:**

TPHg = Total Petroleum Hydrocarbons as gasoline  
 BTEX = benzene, toluene, ethylbenzene and xylenes  
 MTBE = methyl tert-butyl ether  
 ppb = parts per billion

**Analytical Methods:**

TPHG/BTEX/MTBE: EPA Methods 8015m/8020M  
 Lead: EPA Method 6010

**Analytical Laboratory:**

Sequoia Analytical (ELAP #2374)

**TABLE 1. SOIL ANALYTICAL DATA**  
 Former Chevron Station #21-0208  
 6006 International Boulevard  
 Oakland, California

Sample ID	Sample Depth (feet)	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	MTBE (ppm)	Lead (ppm)
<b>UST Pit</b>									
CX-1-9	9	6/20/2001	<1.000	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<7.5
CX-2-9	9	6/20/2001	<1.000	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<7.5
<b>Piping Trenches</b>									
CT-1-2.5	2.5	6/20/2001	560 <sup>1</sup>	<0.250	<0.250	2.4	1.4	<2.500	6.8
CT-2-2.5	2.5	6/20/2001	860 <sup>1</sup>	<0.250	<0.250	1.1	3.8	<2.500	<6.8
<b>Stockpile</b>									
CS-1		6/20/2001	1.3	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	170

**Explanation:**

TPHg = Total Petroleum Hydrocarbons as gasoline  
 BTEX = Benzene, toluene, ethylbenzene, xylenes  
 MTBE = Methyl tert-butyl ether  
 ppm = parts per million  
 --- = not applicable

**Analytical Methods**

TPHg = EPA Method 8015M  
 BTEX, MTBE = EPA Method 8020M  
 Lead = EPA Method 6010B

**Analytical Laboratory**

Sequoia Analytical (ELAP 2374)

<sup>1</sup> Laboratory notes a hydrocarbon pattern is present in the requested fuel quantitation range but it does not resemble the pattern of the requested fuel. The pattern more closely resembles that of a heavier fuel.

Table 1: Results of Analyses  
International Boulevard Family Housing  
Oakland, California

Soil Samples	Units	TPHd *	TPHo *	TPHg	Benzene	Toluene	Ethyl benzene	Xylenes	Lead
B4@0.5'	mg/kg	--	--	--	--	--	--	--	93
B4@9.5'	mg/kg	110	14	340	0.19	<0.1	1.3	0.45	--
B5@1.0'	mg/kg	--	--	--	--	--	--	--	3.2
B5@10.5'	mg/kg	310	6	1,300	<0.2	<0.2	2.6	2.6	--

Grab Groundwater Samples	Units	TPHd *	TPHo *	TPHg	Benzene	Toluene	Ethyl benzene	Xylenes	Lead
B-4	ug/l	3,600	<250	3,600	22	1.8	49	2.9	--
B-5	ug/l	1,300	260	4,200	5.7	1.7	7	5.4	--

**Notes:**

Soil samples collected on January 25, 2001

Detected concentrations shown in bold

TPHd: Total Petroleum Hydrocarbons as diesel

TPHo: Total Petroleum Hydrocarbons as motor oil

TPHg: Total Petroleum Hydrocarbons as gasoline

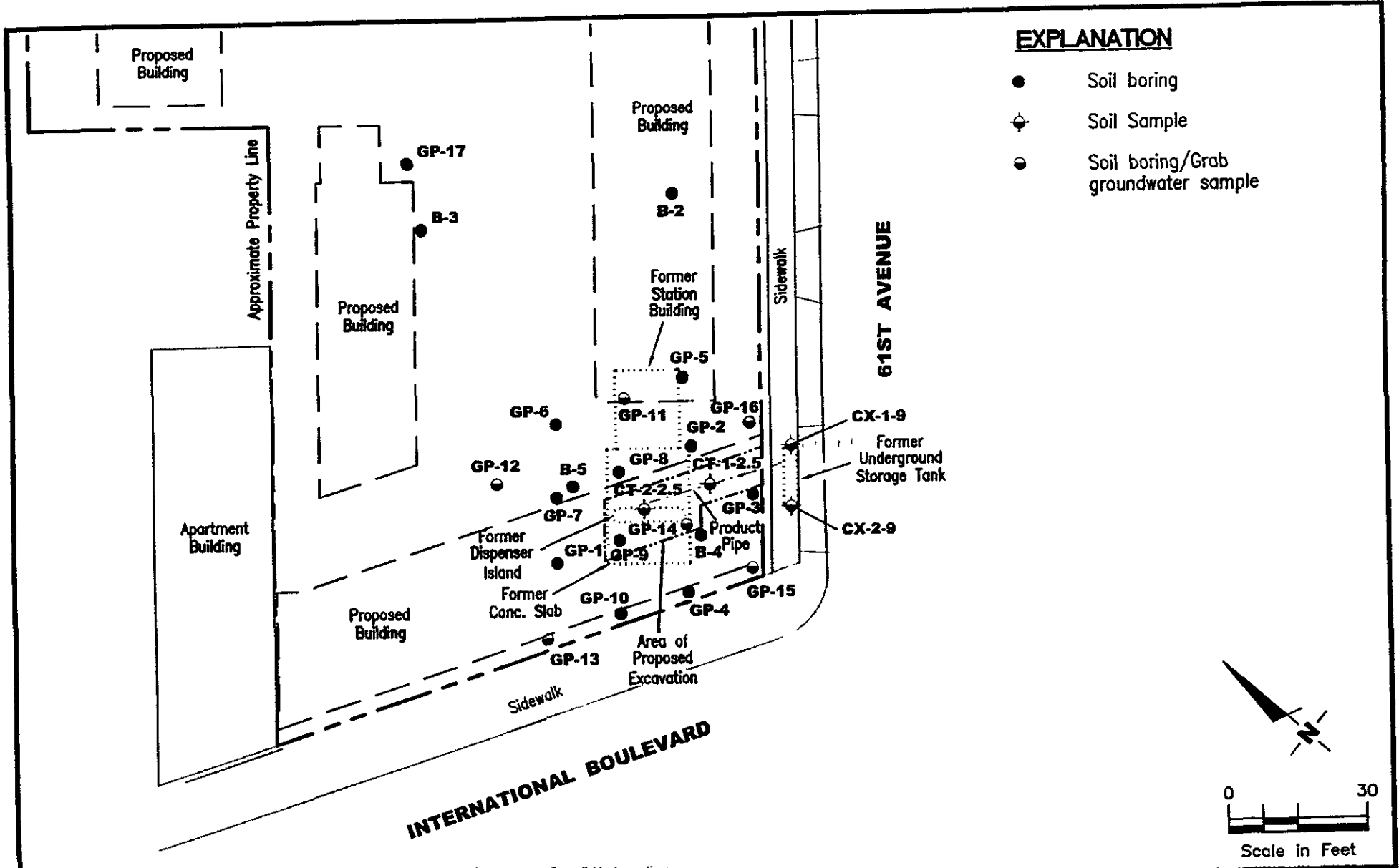
\*: Using silica gel cleanup

mg/kg: milligrams per kilogram

ug/l: micrograms per liter

--: Sample not analyzed

<: Not detected at or above the laboratory reporting limit



Source: Figure modified from drawing provided by Norcal (Geophysical Site Map 1/01) and Gettler-Ryan field observations.

FIGURE

**GETTLER - RYAN INC.**  
 6747 Sierra Ct., Suite J  
 Dublin, CA 94568 (925) 551-7555

**SOIL BORING LOCATION MAP**  
 Former Chevron Service Station No. 21-0208  
 6006 International Boulevard  
 Oakland, California

1

PROJECT NUMBER: DG20208G.4C01      REVIEWED BY:      DATE: 7/01      REVISED DATE:

## **APPENDIX B**

Dear Customer: This Bulletin contains important environmental, health and toxicology information for your employees who recently ordered this product. Please make sure this information is given to them. If you resell this product, this Bulletin should be given to the Buyer. This form may be reproduced without permission.

Chevron U.S.A. Inc.

# Material Safety Data Sheet

Prepared According to the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
(Formerly Called MATERIAL INFORMATION BULLETIN)



CPS 201305

**CHEVRON Regular Gasoline**

**DANGER!**

**HARMFUL OR FATAL IF SWALLOWED**  
**VAPOR HARMFUL**  
**LONG-TERM EXPOSURE TO VAPOR HAS CAUSED CANCER IN**  
**LABORATORY ANIMALS**  
**MAY CAUSE EYE AND SKIN IRRITATION**  
**EXTREMELY FLAMMABLE**  
**CONTAINS LEAD**  
**KEEP OUT OF REACH OF CHILDREN**

## TYPICAL COMPOSITION

Blend of paraffins, naphthenes, aromatics and olefins  
including less than 5% benzene (CAS 71-43-2), 1-5% n-hexane  
(CAS 110-54-3) and 5-15% toluene (CAS 108-88-3) plus xylene  
(CAS 1330-20-7) >99%  
May contain methyl tert butyl ether (MTBE) (CAS 1634-04-4) 10% (Max)  
F310\*, other additives including ethylene dibromide (CAS 106-  
93-4), ethylene dichloride (CAS 107-06-2) and dye <.1%  
Lead (as lead alkyl) 1g/gal.

\*Trademark for polybutene amine gasoline additive

## EXPOSURE STANDARD

The ACGIH (1984-85) TLV for gasoline is 300 ppm for a daily 8-hour exposure. No Federal OSHA exposure standard has been established for this material. See Additional Health Data for discussion of benzene exposure limits.

## PHYSIOLOGICAL & HEALTH EFFECTS

Eye irritation may result from contact with the liquid or exposure to the vapor. The scientific literature warns that vapor concentrations above 500 ppm are irritating.

Prolonged or frequently repeated liquid contact may cause skin irritation or may cause the skin to become cracked or dry from the defatting action of this material. See Additional Health Data.

Prolonged or repeated breathing of gasoline vapor may be harmful. See Additional Health Data.

This material is expected to be only slightly toxic by ingestion. Note to Physician: (See Additional Health Data.)

## EMERGENCY & FIRST AID PROCEDURES

### Eyes

Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. If irritation persists, see a doctor.

### Skin

Wash skin thoroughly with soap and water. See a doctor if any signs or symptoms described in this MSDS develop or if any skin irritation occurs. Launder contaminated clothing.

### Inhalation

Move exposed person to fresh air. If breathing has stopped, apply artificial respiration. Call a doctor immediately. See Respiratory Protection, Page 2.

### Ingestion

If swallowed, DO NOT make person vomit. Call a doctor immediately.

**ADDITIONAL HEALTH DATA**

See Page 3.

**SPECIAL PROTECTIVE INFORMATION**

**Eye Protection:** Keep away from eyes. Eye contact can be avoided by wearing chemical safety goggles.

**Skin Protection:** Keep away from skin. Skin contact can be minimized by wearing impervious protective clothing including gloves.

**Respiratory Protection:** Avoid prolonged breathing of vapor by using approved respiratory protection. In open areas, such as outdoor gasoline transfer areas, ventilation is usually adequate to prevent prolonged breathing of high gasoline vapor concentrations. See Additional Health Data.

**Ventilation:** Use this material only in well ventilated areas.

**Comment:** If you experience any of the signs or symptoms described in this MSDS, you may be exposed to harmful gasoline levels. Your exposure can be minimized if you follow the protective measures presented above.

**FIRE PROTECTION**

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.

**Flash Point:** (P-M) < -49°F (-45°C)

**Autoignition Temp.:** NDA

**Flammability Limits:** 1.4-7.6%

**Extinguishing Media:** CO<sub>2</sub>, Dry Chemical, Foam, Water Fog.

**Special Fire Fighting Procedures:** For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of normal products of combustion or oxygen deficiency. Read the entire MSDS.

**SPECIAL PRECAUTIONS**

The above information is based on data of which we are aware and is believed to be correct as of the date hereof. Since the information contained herein 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 for your determination of the suitability of the material for his particular purpose.

**ENVIRONMENTAL PROTECTION**

**Environmental Impact:** Certain geographical areas have air pollution restrictions concerning the use of materials in work situations which may release volatile components to the atmosphere. Air pollution regulations should be studied to determine if this material is regulated in the area where it is to be used. This material is considered to be a water pollutant. Every effort should be made to prevent any release of this product to the ground or to water including drainage and sewage systems.

**Precautions if Material is Released or Spilled:** Eliminate all sources of ignition in vicinity of spill or released vapor. Clean up small spills using appropriate techniques such as sorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Follow prescribed procedures for reporting and responding to larger releases.

**Waste Disposal Methods:** Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this material.

**REACTIVITY DATA**

**Stability (Thermal, Light, etc.):** Stable.  
**Incompatibility (Materials to Avoid):** May react with strong oxidizing materials.  
**Hazardous Decomposition Products:** Normal combustion forms carbon dioxide and water vapor; incomplete combustion can produce carbon monoxide.  
**Hazardous Polymerization:** Will not occur.

**PHYSICAL PROPERTIES**

See Page 3.

NDA = No Data Available



# Material Safety Data Sheet

CHEVRON Regular Gasoline

CPS 201305

## ADDITIONAL HEALTH DATA

Ingestion of gasoline or inhalation of gasoline vapor at airborne concentrations exceeding 1000 ppm may cause signs and symptoms of central nervous system depression such as headache, dizziness, loss of appetite, weakness and loss of coordination. Vapor concentrations in excess of 5000 ppm may cause loss of consciousness, coma and death. Intentional exposures to excessively high concentrations (e.g., when used as a drug of abuse) have been reported to result in clinical manifestations that may include convulsions, delirium, and hallucinations. These manifestations are not known to occur following accidental inhalation of vapor or skin contact with gasolines during normal operations. Brief exposures to high vapor concentrations may also cause pulmonary edema and bronchitis. Note to Physician: Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid which can cause pneumonitis.

This product may contain up to 4.9% benzene. Repeated or prolonged breathing of benzene vapors 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. Following a two-year cancer bioassay sponsored by the National Toxicology Program, NTP concluded that benzene is a carcinogen for rats and mice of both sexes. Note: Limiting the total hydrocarbon exposure to 300 ppm, the ACGIH TLV for gasoline, may not keep the benzene concentration below the 10 ppm Federal OSHA exposure standard and ACGIH TLV for benzene.

This product contains n-hexane. Prolonged or repeated contact with n-hexane may produce peripheral neuropathy characterized by progressive weakness and numbness in the extremities, loss of deep tendon reflexes and reduction of motor nerve conduction velocity. Recovery ranges from no recovery to complete recovery depending upon the duration of exposure and the severity of the nerve damage.

This product contains toluene. Toluene has been reported to decrease immunological response in test animals. Toluene has been reported to increase malformations in chicks exposed during organogenesis.

This product contain xylene. Xylene has been reported to be embryotoxic, teratogenic and to cause developmental disturbances in rats exposed in utero.

The American Petroleum Institute (API) sponsored a study where laboratory animals were exposed to 67, 292 and 2056 ppm unleaded gasoline vapor six hours/day, five days/week for approximately two years. Each exposure group consisted of 200 rats and 200 mice. During the course of the study, male rats had an increased incidence of kidney damage followed by repair and enlargement of the kidney tubules. At the end of the study, a dose-related incidence of microscopic kidney tumors was detected in the male rats; two tumors were found in the low exposure group, and five were found in the high exposure group. Female rats and both male and female mice did not show this type of lesion. It was noted in the study that the animals that were exposed to gasoline vapor lived longer than the control. Thus, the significance of the tumor findings is difficult to evaluate at this time. Additional findings in the API-sponsored study, which were observed only at the highest dose tested (2065 ppm), included (1) failure to gain body weight, (2) increased incidence of hepatocellular carcinomas (liver cancer) in female mice, and (3) lung inflammation in

male and female rats. Subsequent testing has shown that the six to ten carbon isoparaffinic compounds in gasoline are apparently responsible for the early kidney damage seen in the male rat in the API study although the larger isoparaffins have not been individually tested. Information collected by the API and others indicates that the damage occurs only in the male rat, does not occur in female rats or mice and monkeys of either sex and may not occur in man. How this early kidney injury relates to the development of kidney tumors seen in the API study is currently unknown.

The significance to man of the results of the studies discussed above is not known. While we believe that low level or infrequent exposure to gasoline vapor is not likely to cause cancer or other serious disease, in light of the above information, the precautions outlined in this MSDS should be carefully observed. If strong odor of gasoline is present or if any irritation occurs, individuals should leave the area or institute suitable protective measures (see page 2 - Special Protective Information).

#### **SPECIAL PRECAUTIONS**

NEVER siphon gasoline by mouth. READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

Use only as a motor fuel. Do not use for cleaning, pressure appliance fuel, or any other such use. DO NOT USE OR STORE near flame, sparks or hot surfaces. USE AND STORE ONLY IN COOL, WELL VENTILATED AREA. Keep container closed. DO NOT TRANSFER LIQUID TO AN UNLABELED CONTAINER. DO NOT weld, heat or drill container. Replace cap or bung. Emptied container still contains hazardous or explosive vapor or liquid.

#### **PHYSICAL PROPERTIES**

Solubility: Soluble in hydrocarbons; insoluble in water.

Appearance (Color, Odor, etc.): Orange to bronze liquid.

Boiling Point: 25-225°C (Range)\*

Melting Point: n/a

Specific Gravity: 0.7-0.8 (Range)

Vapor Pressure: 5-15 psi (max.) @ 100°F (Range)\*

Vapor Density (Air=1): 3-4(Range)

Percent Volatile (Volume %): 99+

Evaporation: NDA

\*Variable with season and location.

n/a = Not Applicable

NDA = No Data Available